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ORIGINAL ARTICLE

Temporary overpessimism: Job loss expectations following a large negative employment shock

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Abstract

Job loss expectations were widespread amongst workers in East Germany following reunification with West Germany. Though experiencing a large negative employment shock, East German workers were nevertheless overpessimistic immediately after reunification with respect to their job loss risk. Over time, job loss expectations fell and converged to West German levels, which was driven by a stabilizing economic environment and by an adaptation of the interpretation of economic signals with workers learning to distinguish individual risk from firm-level risk. In fact, conditional on actual job loss risk, East German workers quickly caught up to West Germans regarding the share of correctly predicted job losses.

KEYWORDS

expectations, job loss, transition economies

JEL CLASSIFICATIONS

D84; J64; J63; P20

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1 | INTRODUCTION

Job loss expectations, that is expecting a job loss in the near future with a high perceived likelihood, are shown to have adverse effects on many labour and non-labour market outcomes and on workers' behaviour. Bohle et al. (2001), Knabe and Rätzl (2010), and Green (2011) report a detrimental effect on well-being and health measures.¹ However, little is known about the formation of job loss expectations at the individual level. In particular, what are the drivers of changes in job loss expectations over time and how do workers' job loss expectations respond to economic shocks? In contrast, there exists a large literature in macroeconomics investigating the formation of expectations (for example regarding inflation expectations or stock value forecasts).²

Our study presents novel empirical evidence at the individual level showing an immediate overshooting of job loss expectations in response to a large negative employment shock, as well as a large downward adjustment over time. Similarly, Linz and Semykina (2008) show that post-Soviet Russia also experienced high levels of job loss expectations in the early transition period and a strong decrease afterwards. To the best of our knowledge, our paper is the first that analyses the drivers of changes in the prevalence and accuracy of job loss expectations over time.

Our show case is East Germany in the aftermath of reunification. We document a very high initial level of job loss expectations in excess of actual job loss risk (overreaction) but a subsequent strong decline in job loss expectations (convergence to West German levels). We focus on two explanatory factors. On the one hand, changes in the economic environment, which constitute changes in economic signals, lead a worker to update her job loss expectations. On the other hand, changes in the interpretation of signals reflect changes in how workers translate economic signals into job loss expectations. Both factors turn out to be important drivers of the observed decline in job loss expectations in East Germany. In addition, we further scrutinize individual drivers of changes in job loss expectations, with expectations about employment changes at the firm-level proving most important.

The analysis of subjective expectations elicited through surveys had been rare in the economic literature for many decades (Manski & Straub, 2000). Starting with the pioneering work by Manski and Straub (2000), Manski (2004) and others, however, there has been a rise in empirical studies using elicited expectations.³ Our empirical analysis relies on subjective expectations elicited repeatedly in a panel survey (German Socioeconomic Panel, henceforth SOEP), which elicited job loss expectations as early as 1990/91 in both East and West Germany. This allows us to merge job loss expectations with the actual job losses in the future, as well as to control in detail for changes in individual characteristics over time.

¹There exists a large literature showing mostly detrimental effects. Aaronson (1998) and Campbell et al. (2007) find lower wage growth amongst males. Benito (2006) finds negative effects on consumption and Lusardi (1998) and Carroll et al. (2003) document a positive association with savings. Warr (1987), Wichert et al. (2000), and Burchell et al. (2002) find increased job dissatisfaction. Expecting job loss is also found to negatively influence loyalty to the firm (Sverke & Goslinga, 2003), decrease motivation for respecting safety guidelines (Probst & Brubaker, 2001), increase the propensity of further training (Elman & O'Rand, 2002), and to affect fertility choices (Bernardi et al., 2008).

²A recent study by Kucinkas & Peters (2018) analyzes the response of expectations to shocks over time focussing on under- or overreaction. The review by Coibion et al. (2018) discusses different approaches for expectation formation in the macroeconomic literature.

³For Germany, Kassenböhmer & Schatz (2017) analyze the determinants for unemployed workers to correctly estimate or under-/over-estimate their job finding probability, similar in spirit to our analysis. Dickerson & Green (2012) provide a descriptive analysis of job loss expectations and realizations using SOEP data, but they do not distinguish between East and West Germany and they do not analyze changes over time.

In response to the large negative employment shock in East Germany after reunification, we document strong (over)pessimism regarding job security in the early 1990s. Nearly half of all East German workers in 1991 expected to lose their job within the next two years (4% in West Germany at the same time), whilst an actual job loss occurred for only 31% of these workers (7% in West Germany) implying that the share of East German workers expecting a job loss was much higher than the share of actual job losses. By 1999, job loss expectations in East Germany had converged considerably to the West German level and remained stable thereafter. The remaining differences after 1999 can be explained by differences in actual job loss risk between East and West Germany. Job loss expectations in West Germany were quite stable and only a small share of workers expected a job loss. An analysis of the effect of a negative employment shock on job loss expectations would be difficult in a setting like West Germany without substantial shocks to job loss risk. In contrast, East Germany offers a unique opportunity to study a substantial change in job loss expectations.

Our analysis focuses on explaining changes in job loss expectations over time based on cross-sectional regressions. Data limitations preclude analysing individual level changes over time because job loss expectations are not elicited every year and are only recorded for employed individuals. Regarding expectation formation, Tortorice (2012) finds that workers are more pessimistic about the trend in national unemployment at the end of a recession than at the beginning, extrapolating too much into the future from recent experience and thus failing to account for the stabilization of the economic surroundings. Malmendier and Nagel (2016) argue that this effect (extrapolation from recent experiences) is even stronger for younger individuals. Such a pattern is also likely to apply to East Germans, who, with little experience in a market economy, became overpessimistic immediately after reunification and did not foresee the subsequent stabilization of economic conditions. Later, they adapted their expectations once they had received signals of stabilizing economic surroundings and had learned more about the transmission of the shock.⁴

To examine these aspects empirically, we first show how job loss expectations respond to changes in the economic signals perceived by workers. We separately analyse changes in signals related to the individual's economic situation, like industry affiliation or unemployment history, and measures of the 'external' economic situation, proxied by the economic situation of the worker's firm. If the interpretation of signals in East Germany had remained fixed at the level of 1991, shifts in the economic situation of the firm would have induced a substantial decline in the prevalence of job loss expectations in East Germany, amounting to about 60% of the actual decline between 1991 and 1999, whilst changes at the individual level explain little. The effect of changes in the economic situation of the firm, however, depends strongly on the base year chosen for the coefficients used for the counterfactual, indicating that changes in the interpretation of economic signals play an important role for changes in job loss expectations, which so far has received little attention in the literature.

Workers adapt the interpretation of economic signals by learning more about the signal's relevance for their individual job loss risk or about the information content of a signal change. The large reunification shock might have left workers unable to gauge correctly the relevance of labour market signals for their individual job loss risk initially. In order to study the extent of changes in interpretations, we compare the value of the coefficients of individual level determinants of

⁴Green et al. (2000) find that changes in the unemployment rate affect perceived job security. For a discussion of the formation of job loss expectations in East Germany right before and after reunification, see Lechner et al. (1994). Roth & Wohlfart (2020) or Armantier et al. (2016) provide causal evidence from experiments on how individuals update their expectations when new information become available, but do not investigate changes in the way individuals interpret signals.

job loss expectations over time, as they reflect the way market signals translate into job loss expectations. Furthermore, changing effects of different determinants on the likelihood of job loss should be informative about changes in the information content of specific signals. Past and expected changes in the firm's employment show the largest changes in interpretation over time, meaning that workers changed how they interpret the economic situation of their firm with regard to their own job loss risk. In 1991, a pessimistic assessment of the employer's economic situation strongly increased job loss expectations and the effect was much larger than the increase in the actual job loss risk. The effect on job loss expectations was much smaller in 1999. Thus, the subjective assessment of the employer's economic situation emerges as the driving factor for both changes in signals and changes in interpretation. Job loss rates amongst those who expected job loss in East Germany also converged towards those observed in West Germany, which was driven by changes in the interpretation of the firm's economic situation, in the composition of those who expected job loss in East Germany, and in the reasons for job loss.

The paper is structured as follows: Section 2 outlines the setting of German reunification. Section 3 includes first descriptive evidence on job loss expectations and actual job loss in East and West Germany and outlines the convergence of East German job loss expectations to West German values. Section 4 then analyses the role of changes in signals and changes in the interpretation of signals to explain this convergence. Section 5 presents robustness checks by discussing different reasons for job loss and different subjective assessments of a worker's economic situation other than job loss expectations. Section 6 analyses the determinants of the job loss rate amongst those East German workers who expected job loss and compares it to findings for similar West German workers. Section 7 concludes.

2 | THE CASE OF GERMAN REUNIFICATION

Between the fall of the Berlin wall on 9 November 1989 and the official reunification of the two parts of the country on 3 October of the following year, steps for a swift political and economic union were implemented, including the harmonization of institutions, the introduction of the Western Deutschmark in East Germany, the start of the privatization of state-owned East German enterprises and the expansion of the collective bargaining system to East Germany. Market mechanisms were, thus, introduced into the East German economy, which stood in stark contrast to the command economy known from before. Individual workers could now make their labour market choices on their own and without interference by the state. This also meant, however, that individuals suddenly faced the threat of unemployment, which had widely been absent in the GDR. Unemployment indeed increased sharply in the first years after reunification as many of the inefficient formally state-owned companies were privatized, often reducing their workforce or being shut down altogether.

The introduction of a market economy resulted in East German workers having to form expectations about their economic future, especially their risk of job loss in this changing economic environment. The developments in the labour market in East Germany in the years after reunification, thus, offer a unique setting for analysing the development of job loss expectations of workers after a large negative shock to their economic surroundings. In contrast to many other settings, there exists a panel dataset, the German Socioeconomic Panel (SOEP), which elicited expectations about job security and actual job loss from the East German workforce as early as 1990. Additionally, West Germany provides a well suited counterfactual for expectations in a settled market economy and also allows to account for shocks common to both parts of the country.

3 | EXPECTATIONS IN EAST AND WEST GERMANY

Job loss expectations of employed individuals in East and West Germany are directly elicited through the question 'Do you expect to lose your job within the next two years'? The question was asked every year in East Germany from 1990 to 1994 and afterwards at least every second year. A complication is that even though the wording of the question remained the same over time, the scaling of the answers changed. From 1990 to 1998, individuals could choose amongst four ordinal responses, namely 'Surely not', 'Rather unlikely', 'Likely' and 'Surely'. Starting in 1999, individuals were asked to state their expected numerical probability of job loss in the range of 0% to 100% in 10% increments (thus involving 11 answer categories).

Since we analyse expectations starting in 1990, we use a simple, uniformly defined indicator for job loss expectations. Specifically, we create a dummy variable for expected job loss, which is equal to 1 if the individual answered 'Likely' or 'Surely' on the ordinal scale (up to 1998) or gave a probability of 60–100% on the cardinal scale (starting 1999) and 0 if the individual answered 'Surely not' or 'Rather unlikely' or stated a job loss probability between 0% and 50%.⁵ To contrast this expectation indicator with what actually happened to workers, we also construct an indicator for future job loss realizations. This indicator is equal to 1 if individuals were unemployed at least one month in the 24 months following the interview.⁶ In addition, we restrict the sample to individuals who had already entered the labour market during GDR times.⁷ Also note that, as individuals are asked if they expect to lose their current job, the displayed results are based on individuals who are employed at the time of the survey.

Figure 1 displays the shares of job loss expectations and actual job loss (within the next two years) based on the two indicators for East and West Germany. Our expectation indicator seems to make the expectation data based on different answer scales comparable, as there is no apparent break in any series in 1999. For West Germany, the shares of job loss expectations and actual job loss were quite stable over time and both shares were quite low, always lying between 5 and 10%. This seems to be a common finding in times of economic stability, see Schmidt (1999) for the United States, Lübke & Erlinghagen (2014) for most European countries and Dickerson and

⁵Manski & Straub (2000) advocate the use of probabilistic answer scales for eliciting expectations, since they are less ambiguous and thus less prone to heterogeneity in individual interpretations of the answers compared to ordinal response scales. According to Dickerson & Green (2012), answers in the SOEP based on the probabilistic scale are better at predicting subsequent job loss. The probabilistic answers are, however, not available in the early 1990s, the time of the largest changes in job loss expectations in East Germany.

⁶This might overestimate actual realizations as a month of unemployment can also constitute a voluntary break between two jobs. It could also underestimate realizations if individuals change employers to pre-empt a lay off in the future or change into unregistered unemployment. Since voluntary and involuntary unemployment are, however, difficult to distinguish for a substantial part of the sample, we use the broader definition. Additionally, job changes without any period of unemployment in between jobs are also not counted as job loss. Note as well that early retirement is counted as job loss, since this was a common option amongst East German workers to avoid becoming unemployed in the early 1990s in East Germany. Early retirees are defined as workers between 40 and 59 years of age who go into retirement and never work again after the onset of retirement. The vast majority of these early retirements in our sample happened in 1990 and 1991 in East Germany.

⁷To increase comparability, we only include individuals who had already worked before 1990 in West Germany in the West German sample. We also only consider observations of workers who are younger than 60 at the time job loss expectations are elicited, to avoid issues with retirement. Due to its special status as a divided city, workers living in Berlin are excluded from the analysis.

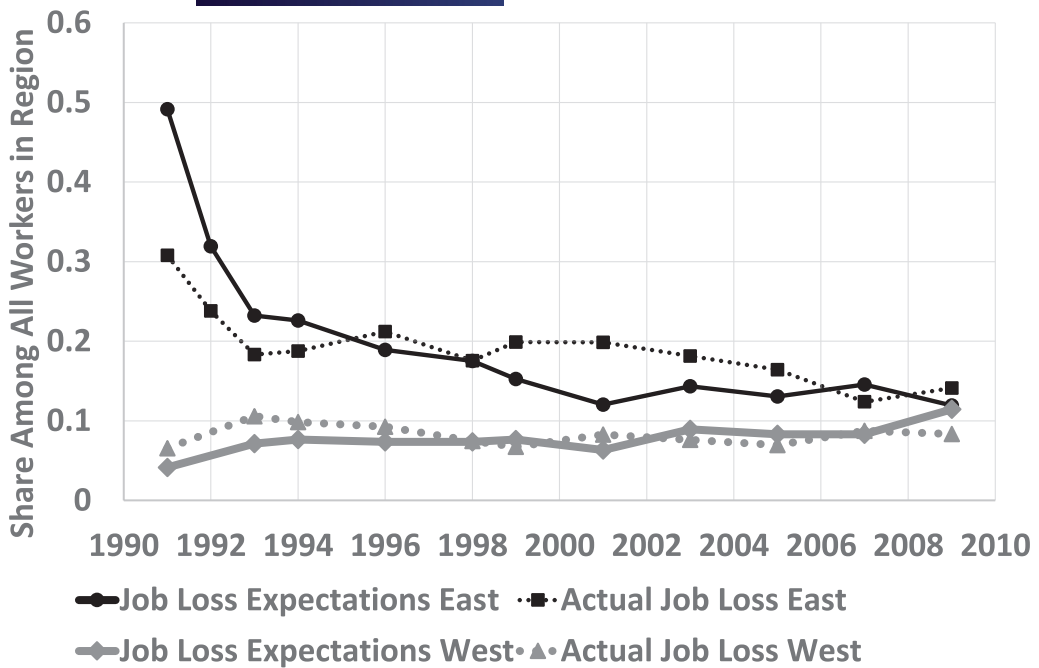


FIGURE 1 Shares of job loss expectations and realized unemployment

Note: The share of job loss expectations is based on the year of the interview, whereas the share of actual unemployment is based on job loss in the 24 months after the interview in a given year (only reported for those years with the information on job loss expectations). For example, the black solid line marked with filled dots represents the share of workers with job loss expectations in East Germany for those years (the dots) for which the information is given. And the black dotted line marked with filled squares represents the share of workers who actually lose their jobs during the next 24 months for those years for which the information on job loss expectations is given

Green (2012) for Australia and Germany. In East Germany from 1996 onwards, 10–15% of all workers expected a job loss and the job loss rate was of a similar magnitude except for being slightly larger in the late 1990s and early 2000s. By the late 2000s, the rates in East Germany had converged to West German levels. In contrast, there were remarkable differences in the early 1990s. In 1990 and 1991, almost 50% of workers in East Germany expected to lose their job, whereas the job loss risk was at about 30%, only 10 percentage points (pp) higher than in the late 1990s. This alone is remarkable, but even more interesting is the subsequent decline in job loss expectations until 1996, by which time job loss expectations and the share of actual job loss had aligned and continued to converge to West German levels.⁸

Even though the shares of expected job loss and actual job loss were very similar, both in East Germany after 1996 (except 2001) and in West Germany during the entire period of time, those who expected job loss were not necessarily the ones who lost their job. In order to assess the accuracy of expectations, we calculate the 'confusion matrix' (Table A1 in the Appendix), which involves the expectation-realization pairs of job loss expectation and actual job loss with correct predictions on the diagonal and false predictions in the off-diagonal elements. The relative frequencies of those four entries change over time and are displayed in Figure 3. Correct predictions

⁸Job loss rates from the SOEP are very similar to rates computed using BASiD data (Hochfellner et al., 2012), which are based on administrative social security data, see Figure A1 in the Appendix.

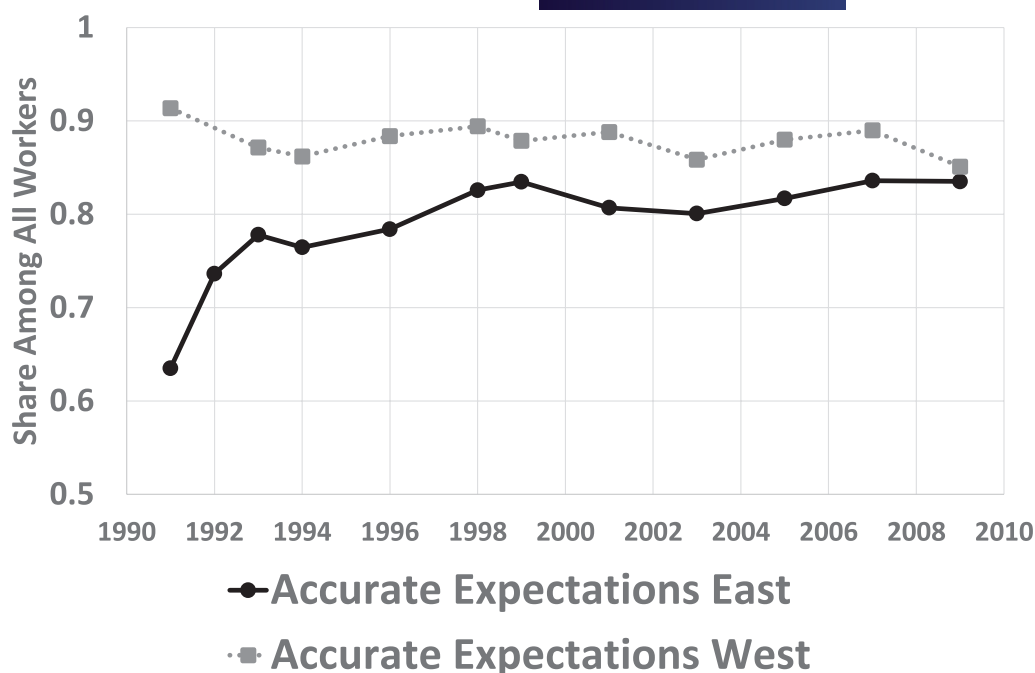


FIGURE 2 Accuracy of job loss expectations

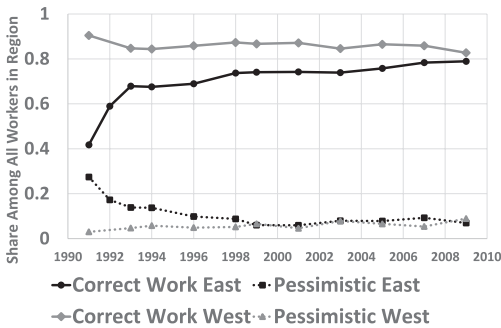
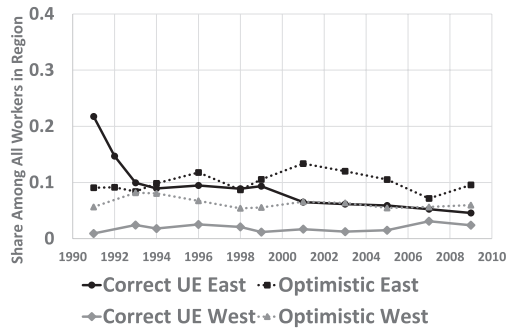
Note: Accurate Expectations are not expecting job loss and not losing one's job and expecting job loss and actually losing one's job. The share of job loss expectations is based on the year of the interview, whereas the share of actual unemployment is based on job loss in the 24 months after the interview in a given year

are denoted by 'Correct Work (CWo)' [\equiv 'True Negative'] and 'Correct UE (CUe)' [\equiv 'True Positive'], where Wo and Ue represent the predictions. The incorrect predictions are denoted by 'False Work (FWo)' [\equiv 'False Negative'] and 'False Unemployed (FUe)' [\equiv 'False Positive']. In the following, we also refer to FWo as 'Optimistic' and FUe as 'Pessimistic'. The accuracy of the predictions is defined as the share of all correct predictions amongst all predictions:

$$\text{Accuracy} = \frac{N(\text{CWo}) + N(\text{CUe})}{N(\text{CWo}) + N(\text{FWo}) + N(\text{CUe}) + N(\text{FUe})}$$

where $N(j)$ denotes the number of observations for the expectation-realization case $j \in \{\text{CWo}, \text{FWo}, \text{CUe}, \text{FUe}\}$. Figure 2 displays the time trend in the accuracy of predictions in East and West Germany. The accuracy rate for West Germany amounted to about 90%, which is a typical level for an established market economy, and changed little over time. In contrast, the accuracy rate in East Germany in the early 1990s was much lower (63% in 1991), which resulted from the high rate of workers falsely expecting job loss. Over time, the accuracy of job loss expectations in East Germany increased to 83% in 1998/99, but a level difference of 5–10 pp to West Germany remained.

Decomposing the accuracy rate, Figure 3 displays the shares of the four different combinations of the expectation and the realization indicator $N(j) / [N(\text{CWo}) + N(\text{FWo}) + N(\text{CUe}) + N(\text{FUe})]$. Workers who did not hold job loss expectations and who did not experience job loss (80–90% of workers in West Germany and 74–80% in East Germany after 1998) contributed most to the accuracy of job loss expectations. In contrast, correct predictions of unemployment were held by only a small and falling fraction of workers, except for East Germany in the early 1990s. Inaccurate expectations (optimism and pessimism)

(a) *Correct Work and Pessimistic*(b) *Optimistic and Correct UE***FIGURE 3** Shares of expectation-realization pairs

Note: Correct Work refers to workers who are not expecting job loss and not losing their job. Pessimistic workers are those workers who expect job loss but don't lose their job. Optimistic workers are workers who do not expect job loss but actually lose their job. Correct Unemployment refers to workers who expect to lose their job and actually lose their job. Expectation-Realization pairs are based on job loss expectations in a given year and job loss within the subsequent 24 months (after the interview)

were low in West Germany in all years, whereas the low level of accuracy in East Germany in the early 1990s was driven by a high degree of pessimistic expectations (around 27% of all workers in 1990/91 in East Germany). The increase in accuracy in East Germany during the 1990s was, thus, driven by a decline in pessimism, with the level of pessimism being very similar to West Germany from the end of the 1990s onwards.⁹

The high accuracy level may suggest that West German workers were very good in assessing their employment prospects. The prediction problem is, however, rather imbalanced, as actual job loss was a much rarer event than staying employed. Therefore, even if every worker did not expect a job loss, the accuracy would still have been high, especially in West Germany with its low job loss rate. Two measures that do not suffer from this imbalance are the shares of actual job loss conditional upon predicting or not predicting a job loss (as discussed for example in more general terms in Chawla et al., 2002). Formally, these are given by $N(CUe) / [N(CUe) + N(FUe)]$, the share of correct predictions conditional upon predicting a job loss and $N(FWo) / [N(CWo) + N(FWo)]$, the share of incorrect predictions conditional upon not predicting a job loss.

Figure 4 shows how these shares developed over time. Workers who did not expect a job loss had a low job loss risk in both East and West Germany. Those who expected a job loss showed

⁹Figure A2 in the Appendix displays all possible answers for job loss expectations in 1991, 1998, 1999 and 2009. In 1991, 13% of East German workers expected to surely lose their job whereas 36% of workers deemed job loss likely. For simplification, our aggregate indicator classifies workers in these two groups who do not lose their job during the next two years as pessimistic. Our analysis focuses on the aggregate indicator because our main empirical analysis of the drivers of the decline in job loss expectations in East Germany yields very similar results for the aggregate indicator and a more disaggregate indicator. The development of the more disaggregated indicator shows that the decline in job loss expectations for East Germans was driven by workers shifting from answering 'Surely' and 'Likely' to answering 'Unlikely', thus considerably decreasing the variance of the distribution of answers to the job loss question in East Germany over time. According to Figure A2, the change from 1998 to 1999 to more detailed probabilistic answers suggests that the two extreme answers 'surely' and 'surely not' correspond to the extreme quantitative answers 100% and 0 percent, respectively, the expected job loss risk in the range [10,50] corresponds to 'unlikely' and [60,90] to 'likely'.

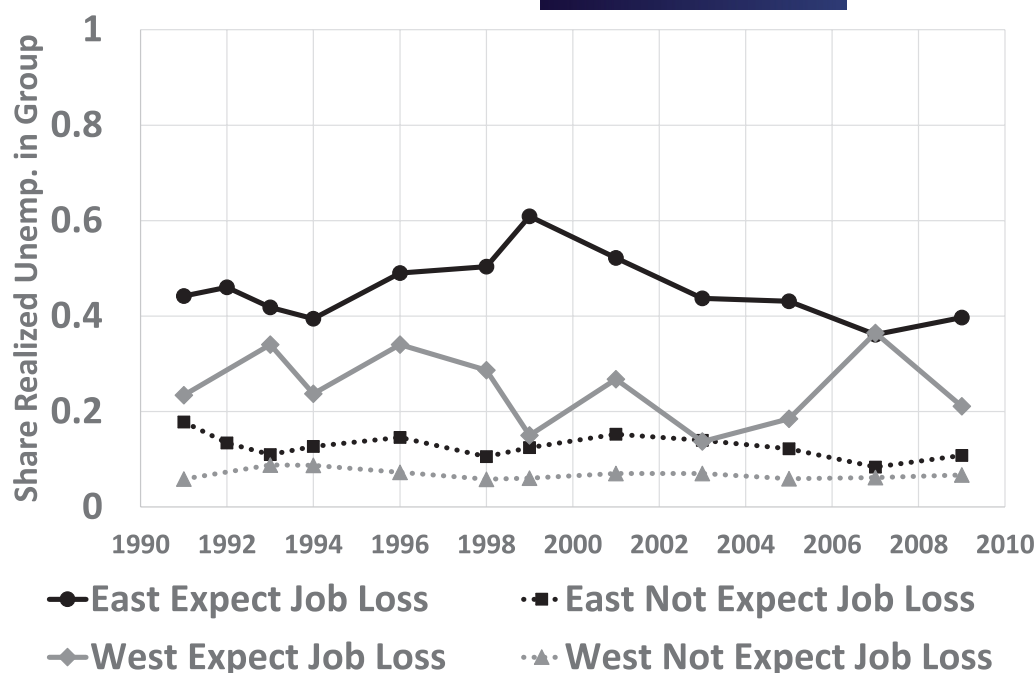


FIGURE 4 Realized unemployment conditional on job loss expectations

Note: The share of job loss expectations is based on the year of the interview, whereas the share of actual unemployment is based on job loss in the 24 months after the interview in a given year

a considerably higher actual job loss risk, the latter much higher in East Germany than in West Germany. Nevertheless, even for workers who expected job loss, it was actually not a very likely event. In West Germany, job loss risk never exceeded 40%, and it only exceeded 50% in East Germany during the late 1990s (see also Stephens, 2004 and Dickerson & Green, 2012). Workers in both parts of the country were, therefore, overpessimistic on average. As the number of East Germans who expected job loss in the early 1990s was much higher than in West Germany, the share of the workforce holding pessimistic expectations was much larger in the East in these years. At the same time, East Germans were much more likely to correctly predict job loss than West Germans, with a rising gap between 1994 and 1999 and a slow decline afterwards (except for a spike in 2007). In the light of the high share of pessimists in East Germany and the increase in the overall prediction accuracy over the 1990s (not forgetting that the risk of unemployment declined over time), we conclude that some East German workers were good at predicting job loss in the early 1990s. A large share of workers, however, was bad at predicting job stability. This issue is investigated further in Section 6.

4 | EXPLANATIONS

Two factors stand out as possible drivers of the high prevalence of job loss expectations in East Germany in the early 1990s: The high job loss risk immediately after German reunification and a possible misinterpretation of economic signals due to the transformation shock. Job loss in East Germany may simply have been difficult to predict in the early 1990s. It is likely that the economic stabilization in the aftermath of the initial shock or a changing assessment of economic

signals by workers were the main drivers behind the observed convergence of the share and accuracy of job loss predictions towards West German levels.

In order to investigate this in greater detail, our main analysis runs logit regressions for the outcome variables job loss expectation, actual job loss and accurate job loss expectation. In addition, regressions with the four expectation-realization pairs as outcomes are estimated. We use data from 1991, 1992, 1994, 1996 and 1999, which is the time period covering most of the convergence in job loss expectations between East and West Germany. Our rich set of control variables includes gender, education, federal state of residence, occupation, industry, indicators for the unemployment history, residence in urban versus rural area, firm size, firm-level actual employment change during the last 12 months and expectations regarding the firm-level employment change during the next 12 months. And, in addition, age, age², wages, industry tenure and firm tenure, standardized (by year). We focus on 1991 and 1999 as the start and end points of the convergence process.

Our sample is restricted to workers who were in the labour market in 1990. For 1991 (1999), this includes 1,871 (945) workers in East Germany and 3,503 (2,192) workers in West Germany. To assess the effect of panel attrition, we also analyse the subsamples of workers still in the sample in 1999, excluding migrants or requiring workers to be employed in both 1991 and 1999. The shares and dynamics of job loss expectations, actual job losses and accurate expectations change little under different sample restrictions (details are available upon request). Whilst there are some level differences by gender in the early 1990s (higher job loss rates and higher job loss expectations for females), accuracy is very similar for both genders, as are the developments over time. For this reason, we implement our main analysis for the total sample of males and females, whilst accounting for a gender dummy in the estimated regressions.

In a first step, we show that there was substantial variation in predicted job loss expectations in East Germany in 1991, indicating that signals in the early 1990s were informative about actual job loss risk, and discuss job loss expectations for workers with different predicted job loss risk. In the next step, we undertake a nonlinear Blinder-Oaxaca decomposition (Fairlie, 1999) between the years 1991 and 1999 – using the Stata code of Sinning et al. (2008) – to distinguish changes in the economic signals received by workers (the ‘endowment effect’, separately for individual signals and signals from the worker’s employer) from changes in the interpretation of signals (the ‘coefficients effects’). Regarding the latter effect, we also discuss changes of the effects of individual signals.

4.1 | Job loss risk and expectations

To investigate job loss expectations for workers with different job loss risk, Figures 5 and 6 show the shares of the four observed expectation-realization pairs (displayed vertically) by predicted job loss risk of workers (displayed horizontally). The expectation-realization pairs reflect job loss expectations and actual job loss during the next two years, both measured as 0/1 variables. Job loss risk is estimated based on a logit regression with the dummy for actual job loss in the next two years as dependent variable and using the control variables discussed above.

In 1991, the job loss risk in East Germany was quite high, with 61% of workers having a high predicted job loss risk > 20% and only 16% having a low risk ≤10%. By 1999, the situation had reversed, with the former share dropping quickly to 23%, whereas now 58% of workers had a low risk ≤10%.

Turning to the shares of the different expectation-realization pairs, workers with very low predicted job loss risk (≤10%) were actually already very accurate in their expectations in 1991.

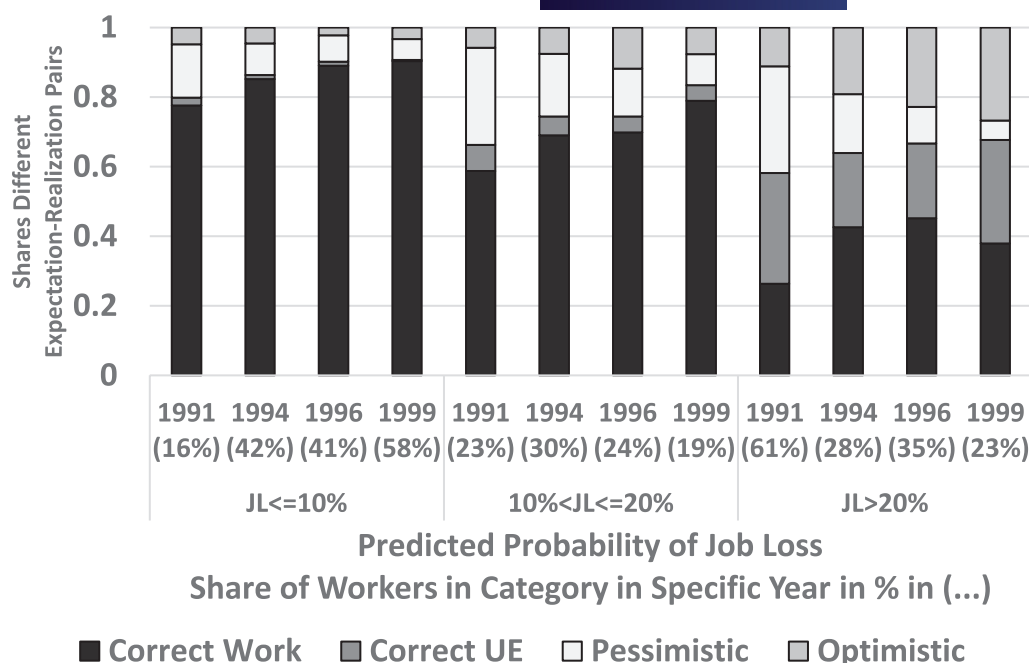


FIGURE 5 Job loss risk and expectation-realization pairs in East Germany

Note: Predicted job loss risk is based on separate logit regressions for every year using the control variables described in the text

In contrast, workers with a slightly higher predicted job loss risk showed a substantial degree of pessimism in 1991. The share of pessimists declined in all groups over time, whilst the share of optimists increased for those with a high predicted job loss risk. Since the group with high predicted job loss risk shrunk strongly over time, the rise in optimists concerned only a decreasing share of workers.

Given the predicted job loss risk, the distribution of expectation-realization pairs for East and West Germany converged strongly over time, with the distribution in West Germany remaining almost constant over time (see Figures 5 and 6). Nevertheless, the predicted job loss risk in East Germany in 1999 was still much higher than in West Germany. Amongst workers with high job loss risk, East Germans were consistently more likely to correctly predict unemployment and West Germans were consistently more likely to correctly predict continuation of their employment relationship, with similar shares of optimists and pessimists. Note that job loss risk was still higher in this group amongst East Germans (54% compared to 32% in the West), which is reflected by the higher job loss expectations of East Germans.

Overall, these findings show that two factors were driving changes over time in expectations and accuracy in East Germany. On the one hand, the economic situation in East Germany stabilized strongly, resulting in a substantial reduction of the job loss risk. As workers with lower job loss risk were already more accurate in their expectations in 1991, this shift increased expectation accuracy over time. On the other hand, within a given category of job loss risk, the accuracy in East Germany also increased significantly, indicating that workers changed the way they translated economic signals about their job loss risk into job loss expectations, which in turn, positively influenced expectation accuracy. We will now assess these factors in more detail.

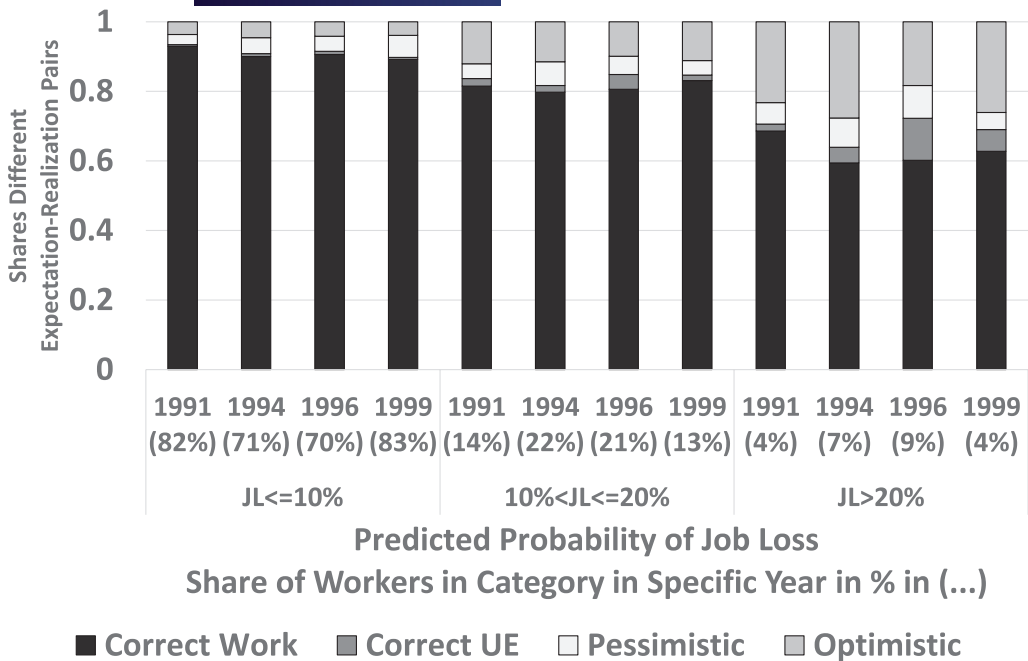


FIGURE 6 Job loss risk and expectation-realization pairs in West Germany

Note: Predicted job loss risk is based on separate logit regressions for every year using the control variables described in the text

4.2 | Effects of changing individual signals

In order to assess the impact of changes in the economic situation of individual workers over time, we estimate a counterfactual scenario for the evolution of job loss expectations based on the changes in endowments. This counterfactual describes the development of job loss expectations, if the interpretation of individual signals had remained as they were in 1991, but the individual level signals changed as they actually did.¹⁰

In terms of individual signals, we consider gender, state of residence, occupation, industry, indicators for the unemployment history and residence in urban versus rural regions. During the transition process in East Germany, changes in the composition of workers over time, through reallocation across industries and occupations, as well as increasing prevalence of recent unemployment episodes, might have driven job loss expectations.¹¹ Over time, there was a shift away

¹⁰Formally, we estimate for each year $t = 92, 94, 96, 99$ (dropping the first two digits of the years),

$E_{X_{it}}[P(y_{it} = 1|X_{it}, \beta_{91})] - E_{X_{it}}[P(y_{i91} = 1|X_{i91}, \beta_{91})]$, which is the difference between the average counterfactual probability for the signals in year t /coefficients in year 91 and the average actual probability for the signals in year 91/coefficients in year 91. Here, $i = 1, \dots, N_t$ denotes the individuals in the sample for year t , β_{91} the logit regression coefficients the year 91, and $E_{X_{it}}$ the unconditional expected values integrating out the distribution of X_{it} based on the law of iterated expectations. For year t , the counterfactual $E_{X_{it}}[P(y_{it} = 1|X_{it}, \beta_{91})]$ can be estimated by the sample average $\frac{1}{N_t} \sum_{i=1}^{N_t} \Omega(\hat{\beta}_{91} X_{it})$ where $\Omega(\cdot)$ is the link function for the logit regression. For $t = 91$, this is an estimate of the expectation for the actual sample.

¹¹Note that as age, wages, number of job changes since 1990, unemployment since 1990 and industry/firm tenure increase for almost all workers over time in the sample, they are standardized by year and thus have very limited effect with respect to compositional changes. Their influence of job loss expectations is, however, discussed in Section 4.4.

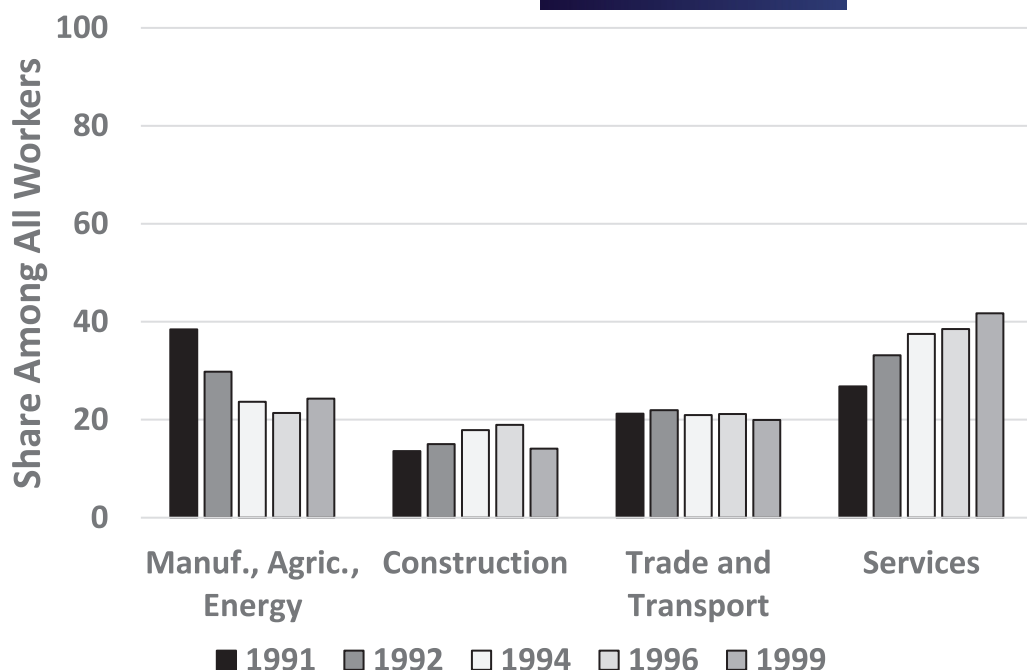


FIGURE 7 Industry employment shares in East Germany

from agricultural/mining occupations, and the share of workers with an unemployment episode in the previous 12 months increased from 4% to 12% between 1991 and 1999. The most marked changes, however, concerned industry affiliation, which is in line with Liepmann (2018), who documents substantial changes in the employment shares of different industries in East Germany. Figure 7 shows the development of the employment shares of several industries in East Germany over time. The employment share in services increased from 27% in 1991 to 42% in 1999, whereas it decreased for manufacturing, agriculture, energy and mining from 38% to 24% (21% in 1996). As job loss expectations differ across industries, this shift in industry composition could have influenced the development of job loss expectations in East Germany.

Our decomposition involves first estimating a logit regression in 1991 with job loss expectations as dependent variable and then using the coefficients from this regression to predict the values of the job loss indicator for each individual up until 1999. Since the coefficients for predictions are the same for all years, the changes in the counterfactual outcome over time reflect the changes in individual level determinants.¹²

Figure 8 shows the pp changes, compared to 1991, in the share of job loss expectations, as well as in the predicted shares, based on changes in individual signals, using coefficients from 1991 for prediction. The development of the actual shares in the two graphs reflects the decline in job loss expectations visible in Figure 1.¹³ Based on predictions using 1991 coefficients, changes in individual signals would have induced a decline in job loss expectations between

¹²Note that changes in individual characteristics cannot only be due to events or individual specific decisions, like changing industry affiliation or a period of unemployment, but also due to changes in sample composition due to attrition. The displayed results, however, are consistent across different samples with decreasing levels of attrition.

¹³The grey lines outline 95% confidence intervals. Confidence intervals are obtained by bootstrapped standard errors clustered by individuals, using 1,000 repetitions, where in each repetition, the prediction process is run anew.

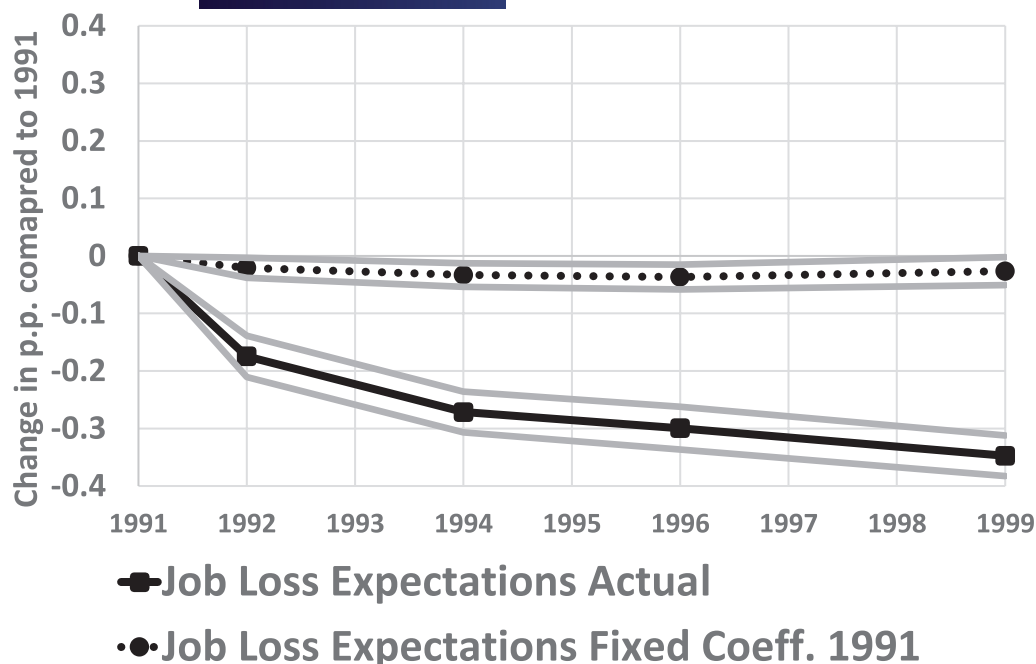


FIGURE 8 Predictive power of changes in individual signals for the share of job loss expectations with coefficients from 1991

Note: Results are obtained by using a nonlinear Blinder-Oaxaca decomposition, based on predicting the value of the job loss expectation dummy for each worker and in each year, based on coefficients from a logistic regression using data from 1991 only. The predicted change of the average likelihood to expect job loss are contrasted with the actual changes in the share of workers holding job loss expectations. The displayed changes are the differences in percentage points (pp) of predicted and actual shares of workers holding job loss expectations in a given year, compared to the share in 1991. The grey lines denote 95% confidence intervals. Confidence intervals are obtained by bootstrapped standard errors clustered by individual, using 1,000 repetitions. Control variables are gender, state of residence, occupation, industry, indicators for the unemployment history, residence in urban versus rural regions and standardized values for age, wage, number of job changes, months in unemployment since 1990 and industry/firm tenure

1991 and 1999 of only 8% of the actual decline, assuming workers would have adapted their expectations in accordance with the new signals. Thus, changes in the individual economic situation alone would not have led to a significant decline in job loss expectations. These findings are unchanged when using different samples (compare Figure A3 in the Appendix).¹⁴ Using 1999 coefficients instead also does not lead to significant explanatory power of individual signals, indicating that changes in interpretation of these signals over time did not have a large impact on job loss expectations.

¹⁴Note, that the job loss expectations for Sample 1 (the 'overall' sample) differ slightly from those in the text. Having a university degree is a perfect predictor for job loss expectations in some years in some samples, so the dummy for this category has been taken out as control variables to ensure comparability across different samples and years. The differences in predicted changes in the overall sample are very small when comparing the results with and without this control variable.

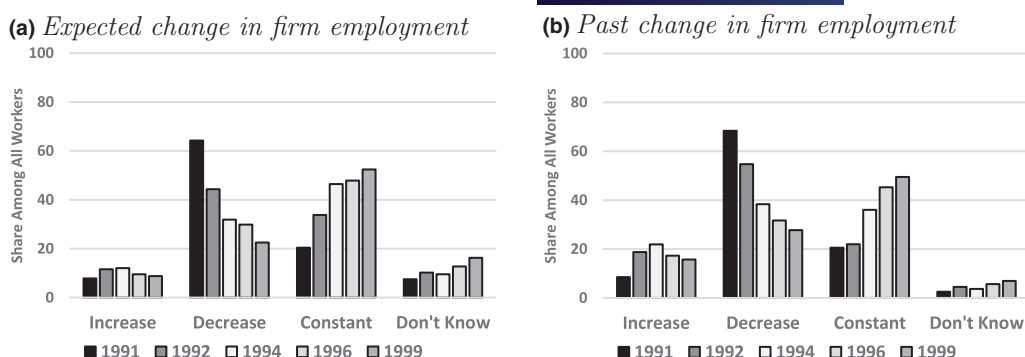


FIGURE 9 Expected and past changes in firm employment

Note: Each bar within each expected/past change in firm employment category represents the share of workers who expect/report the specific change in firm employment in a given year

4.3 | Effects of changing economic surroundings

We now consider changes in the economic situation of the worker's firm as a direct signal about the state of the economy and about the impact of the economic turmoil of the transition. The economic situation of the employer is measured by the reported change in employment of a worker's firm over the last 12 months and by the expected changes in employment in the next 12 months, both as stated by the worker.

The individual assessment of the economic situation of the workers' employers changed markedly over time in East Germany in the 1990s. Figure 9 shows a strong improvement in both past and expected changes over time, note in particular the decline in the category 'decrease'. In 1991, about 68% of workers reported that the workforce of their firm declined in the past 12 months, and 64% expected a decline in the next 12 months. Only around 29% reported that the workforce had been unchanged or had increased in the last year, and the same share expected it to do so. The share of workers who expected or reported a decrease in the workforce, however, fell to 28% for past changes in 1999 and to 23% for expected changes, whereas the share of workers who reported a constant or increased workforce increased to 65% (61% for expectations). The significant decline in reported and expected employment reductions shows a stabilization of the employment situation in many firms over time.

Figure 10 again shows the changes in job loss expectations compared to 1991, but now compares them with predictions based on changes in 'external' economic signals, namely information about the worker's firm's economic situation, using 1991 coefficients for prediction. The decomposition shows that the strong improvement in the reported past and expected changes in firm employment would have induced a marked shift in job loss expectations, if interpretation of signals would have remained as they were in 1991. Shifts in firm-level variables can explain around 60% of the decline in job loss expectations between 1991 and 1999.¹⁵ This indicates that the stabilization of economic conditions in East Germany, which translated into greater employment security and improved worker expectations about the economic health of their employers, contributed strongly to the decline in job loss expectations amongst East German workers.¹⁶

¹⁵Figure A4 in the Appendix shows that these changes are not driven by selective attrition, because results are stable across different sample definition with decreasing levels of attrition.

¹⁶Individual economic signals could be suspected to drive some of the effect of firm-level variables through correlation amongst covariates, or vice versa. Using logit regressions with all covariates and fixing the values of individual or firm level covariates to their 1991 level respectively, however, leads to very similar results.

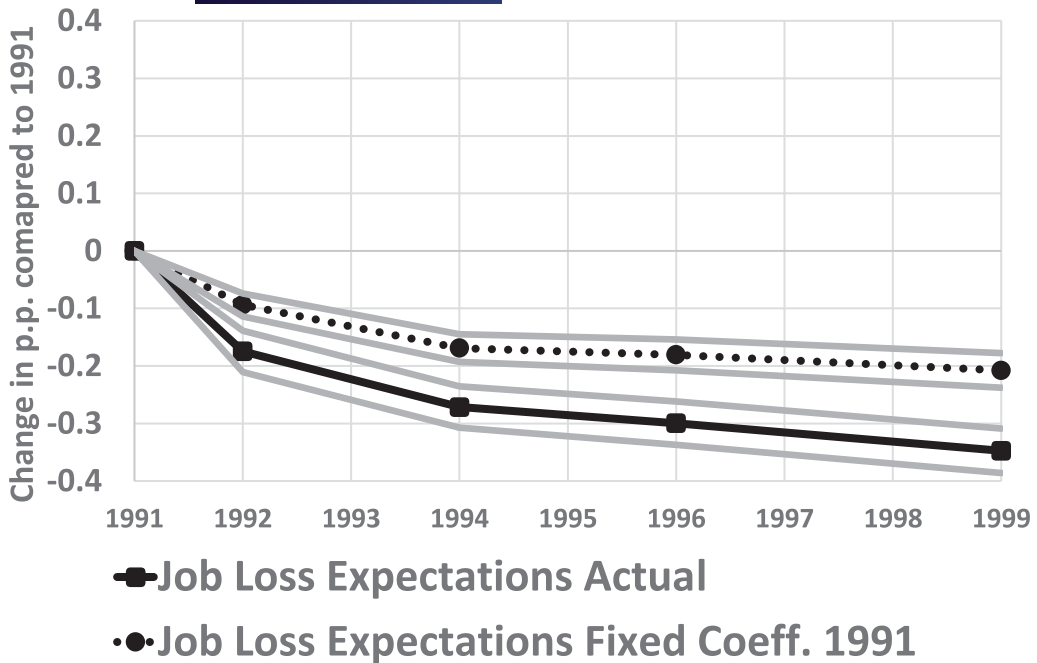


FIGURE 10 Predictive power of changes in economic surroundings for the share of job loss expectations with coefficients from 1991

Note: Results are obtained by using a nonlinear Blinder-Oaxaca decomposition, based on predicting the value of the job loss expectation dummy for each worker and in each year, based on coefficients from a logistic regression using data from 1991 only. The displayed changes are the differences in percentage points (pp) of predicted of workers who held job loss expectations in a given year, compared to the share in 1991, as well as the corresponding differences for actual shares. The grey lines denote 95% confidence intervals. Confidence intervals are obtained by bootstrapped standard errors clustered by individual, using 1,000 repetitions. Control variables are firm size, changes in firm employment in the past 12 months and expected changes in firm employment in the next 12 months

Whilst the individual covariates are straightforward to interpret, the changes in firm employment involve some ambiguity. Firstly, expectations about the future firm employment are themselves the result of an expectation formation process, and as such they might not represent 'external' economic signals. Also, issues of reverse causality might arise, if individuals who do not expect to be laid-off also do not expect lay-offs in their firms, instead of the other way around. To assess this, we exclude expected workforce changes as a predictor from the analysis, whilst keeping past changes in firm employment, which should be less prone to reverse causality or to be influenced by an unobserved factor not actually impacting a firm's health. Changes in economic signals still have substantial explanatory power for the decline in job loss expectations (the predicted decline is about 30% smaller than before as displayed in Figure A5 in the Appendix). This suggests that reverse causality is not the driving force for the above results.

The second source of ambiguity concerns the fact that the magnitude of the past/expected changes might differ, because the data includes only the direction of the change. As the effects of reunification shock were much stronger in 1991 than in 1999, past and expected changes in firm employment were presumably larger in magnitude in 1991 than in 1999. Thus, the estimated impact of changes in signals might even underestimate the impact of changing economic conditions.

The findings so far point to the importance of changes in the economic surroundings for changes in the prevalence of job loss expectations. The magnitude of the estimated effect of

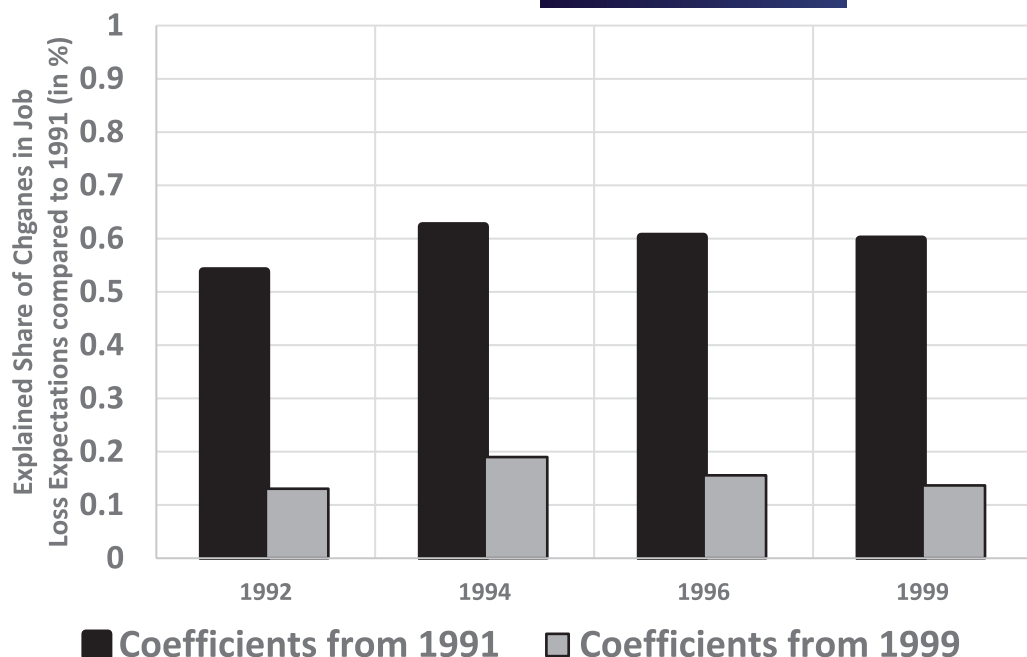


FIGURE 11 Predictive power of changes in economic surroundings for the share of job loss expectations with coefficients from 1991 or 1999

Note: The graphs are obtained by first predicting the value of the job loss expectation dummy for each worker and in each year, based on coefficients from a logistic regression using data from 1991 or 1999 separately. The explained shares is then the difference in the average predicted share in a given year and the predicted value in 1991 divided by the actual difference between the share of job loss expectations in a given year and 1991.

Formally this means
$$\text{ExpShare}_t = \frac{\frac{1}{N_t} \sum_i \hat{\Pr}(y_{i,t} = 1 | X_{i,t}, \beta_k) - \frac{1}{N_{91}} \sum_i \hat{\Pr}(y_{i,91} = 1 | X_{i,91}, \beta_{91})}{\frac{1}{N_t} \sum_i \text{exp}_{i,t} - \frac{1}{N_{91}} \sum_i \text{exp}_{i,91}}$$
 where $\text{Exp}_{i,t}$ is a dummy for expecting job loss in year t .

changes in signals, however, strongly depends on the base year used for prediction. It is much lower when using 1999 coefficients, amounting to at most 19% of actual changes, as shown in Figure 11, compared to more than 50% in each year when 1991 coefficients are used. Some of the variables with the largest changes over time show the largest changes in coefficients, thus indicating a change in the interpretation of economic signals. The results using 1999 coefficients, which are quite close to West German coefficients, also suggest that a large negative shock to job loss risk would not lead to a large reaction in job loss expectations in West Germany (or in later years in East Germany) if the interpretation of economic signals remained unchanged. For a particularly large increase in job loss expectations as visible in the early 1990s in East Germany, both, a large negative shock and a misinterpretation of economic signals, are needed, the latter factor applying to expectations concerning the employer's economic future.

4.4 | Changing interpretations of signals

In the light of the impact of economic surroundings strongly depending on the base year used for the coefficients, we now scrutinize the changes in the coefficients (marginal effects) of the different determinants of job loss expectations, actual job loss and accurate expectations in 1991

TABLE 1 Determinants of expectation, unemployment and accurate expectations in East Germany in 1991 and 1999

| Dependent variable | Expectations | | Job loss | | Accurate expectations | |
|--------------------------|--------------|----------|-----------|----------|-----------------------|-----------|
| | 1991 | 1999 | 1991 | 1999 | 1991 | 1999 |
| Change firm emp. | | | | | | |
| Previous year | | | | | | |
| Increased | (.) | (.) | (.) | (.) | (.) | (.) |
| Decreased | 0.091 | 0.045 | 0.055 | 0.021 | −0.099* | −0.077 |
| Constant | −0.031 | −0.001 | 0.003 | −0.002 | −0.014 | 0.021 |
| Don't know | 0.045 | 0.186*** | 0.026 | 0.01 | −0.091 | 0.066 |
| Exp. change firm | | | | | | |
| Emp. next year | | | | | | |
| Increase | (.) | (.) | (.) | (.) | (.) | (.) |
| Decrease | 0.406*** | 0.199*** | 0.127*** | 0.061 | −0.12** | −0.1** |
| Constant | 0.056 | 0.036 | 0.005 | 0.044 | −0.004 | −0.051 |
| Don't Know | 0.186*** | 0.076* | 0.088 | 0.117*** | −0.104 | −0.09* |
| Industry | | | | | | |
| Trade, Transport | (.) | (.) | (.) | (.) | (.) | (.) |
| Manuf., Agric. Energy | 0.112*** | −0.048 | 0.025 | 0.03 | 0.005 | −0.04 |
| Construction | 0.054 | 0.016 | 0.063 | 0.109** | 0.062 | −0.179*** |
| Serv., Bank, Insur. | 0.029 | −0.068 | −0.057 | 0.018 | 0.065 | −0.027 |
| Male | −0.072** | −0.032 | −0.065** | −0.057** | 0.047 | 0.074** |
| Unemployed last 12 month | 0.146*** | 0.191*** | 0.323*** | 0.248*** | 0.086 | 0.021 |
| Wage | −0.087*** | −0.018 | −0.089*** | −0.03* | 0.009 | 0.024 |
| Observations | 1,871 | 945 | 1,871 | 945 | 1,871 | 945 |

Note: Displayed coefficients are average marginal effects from logistic regression. Values for tenure, age, job changes and wage are standardized on a yearly basis. For readability, results for some control variables have been suppressed. The full list of control variables are: gender, education, state of residence, occupation, industry, indicators for the unemployment history, whether the worker lived in a urban or rural area, firm size, how the employment in her firm changed in the last 12 months and expectations about the change in the workforce in the next 12 months as well as values for age, age², wages, tenure in the industry and tenure in the firm standardized (by year). Significance: *Significant on the 10% level, **Significant on the 5% level, ***Significant on the 1% level.

and 1999. We do so even though the exact quantification of the impact of changes in coefficients is difficult for a nonlinear logit regression.

Table 1 shows the changes in the average marginal effects of selected control variables for logit regressions in 1991 and 1999, with dummy indicators for job loss expectations, actual future unemployment and accurate expectations as dependent variables.¹⁷ Considerable discrepancies exist between the influences of some determinants on expectations and actual job loss, in particular concerning expected changes in firm employment. If a worker expected that firm

¹⁷We focus on the most important individual level determinants whose coefficients change by a substantial amount over time, as well as only discussing three of the outcome variables. Tables with all the coefficients for all the outcome variables are available upon request.

employment will decrease, the likelihood that she expected to lose her job is 41 pp higher in 1991 compared to a worker who expected firm employment to increase (workers who answered 'Don't Know' had a 19 pp higher probability). This difference, however, does not correspond to a similar difference in the actual job loss risk (13 pp). The large effect on expectations also explains its aforementioned dominant role as a changing signal.¹⁸ When controlling for expected changes in firm employment, workers who reported different past changes in firm employment do not seem to show very different levels of job loss expectations or job loss risk.¹⁹

Amongst those expecting decreasing firm employment, job loss expectations fell strongly over time (−21 pp), whereas the reduction in the actual job loss risk was much smaller. In 1999, job loss expectations and realizations were much more similar than in 1991. This change over time could have been driven by workers changing how they relate expected reductions in firm employment to their own job loss risk, for example because workers learned more about their individual job loss risk relative to their co-workers. This could, however, also reflect changes in the size of the expected employment loss, due to the ambiguity of the question, as already discussed above. Most likely, both factors played a role in reducing the differences in job loss expectations.²⁰ In any case, workers changed how they interpreted economic signals, be it through adapting their expectations about changes in firm employment or how they related these to their own job loss risk.

Other noteworthy findings are the following. Having been unemployed in the last 12 months strongly increased the likelihood of future unemployment by 32 pp in 1991. East German workers in 1991, however, seem to have underestimated the link between recent and future unemployment, as recent unemployment had a much smaller effect on job loss expectations than on job loss risk. Males were less likely to hold job loss expectations than females and their job loss risk fell short by about the same amount. Higher wages on average were associated with both lower job loss expectations and lower actual job loss risk, and both effects fell over time. Furthermore, workers in manufacturing/agriculture/energy/mining more often expected job loss than workers in trade and transport in 1991, which was not reflected by the same variation in actual job loss risk. By 1999, industry affiliation did not affect expectations but workers in trade and transport had lower actual job loss risk.

Turning to expectation accuracy, the strong differences between the effects of determinants of job loss expectations and actual job loss should have led to lower expectation accuracy for different groups, especially for workers who expected a decrease in firm employment. Indeed, this group (which accounted for 60% of workers in 1991) shows a 12 pp lower accuracy compared to the reference group in 1991, thus, suggesting a key explanation for the low accuracy in 1991. The difference in accurate expectations between those who expected falling firm employment

¹⁸We chose expecting/reporting an increase in the workforce of one's firm as the reference category, because job loss expectations and actual unemployment are quite stable over time in this category. Changes in average marginal effects could in principle be 'mechanically' driven by changes in the values of control variables. However, as Table A2 in the Appendix shows, changes in control variables do not significantly affect the values of average marginal effects, if coefficients are held constant at 1991 levels.

¹⁹Table A3 in the Appendix shows results for regressions in which expected changes in firm employment are not used. Past changes in firm employment largely pick up the effect of expected changes in firm employment, as well as firm size, which now has a significant effect on job loss expectations. Workers in larger firms were more likely to hold job loss expectations, which seems unjustified especially for workers in the largest firms.

²⁰Table A4 shows that the decline in the relative prevalence of job loss expectations in the group of workers who expected a reduction in firm employment was rather linear, whereas the economic situation had already stabilized by around 1992, indicating that the adaptation process of job loss expectations was rather gradual, and not directly driven by economic fluctuations.

and other workers, however, decreased only by a small amount over time, despite the large drop in the relative level of job loss expectations in this group. Reasons for this were the changes in expectations for the reference group and changes in the composition of the samples in 1991 and 1999. Workers who expected falling firm employment were less often optimistic (−8 pp) and were much more often pessimistic (+21 pp) than the reference group in 1991, which in turn, caused the lower level of their (total) accurate expectations (Table 2). Over time, job loss expectations became more accurate for both groups (decreasing optimism or pessimism), thus limiting the change in the group difference. The decline in optimism in the reference group was driven by panel attrition, since those who dropped out of the panel between 1991 and 1999 and who expected an increasing workforce in their firm in 1991 were especially optimistic. Thus, the difference in accurate expectations across the different categories of expected changes in firm employment in 1991, as well as the change over time, is much greater in the balanced samples (Table A5 in the appendix).

Similar to the findings above, workers in manufacturing/agriculture/energy showed much higher job loss expectations in 1991, but a similar job loss risk compared to the reference group of workers in trade and transport, causing higher pessimism in this group. Again, the accuracy differed little, as workers in agriculture/energy/mining more often correctly predicted job loss and were less often optimistic than the reference group. Over time, the level of accurate expectations relative to trade and transport workers dropped in all industries, as accurate expectations increased strongly for workers in trade and transport. The latter finding was driven by decreasing optimism in these industries – in this case not caused by sample attrition. In contrast, workers in construction became markedly (over)optimistic, apparently not foreseeing the decline in construction employment from the late 1990s onwards.

In summary, the coefficients changed considerably over time with regard to both job loss expectations and accurate expectations, which means that in addition to changing economic signals workers also adapted their interpretation of signals. The latter is likely to have been driven by learning processes with respect to the informational content of a signal, by better information about one's own personal job risk, and by a less pessimistic interpretation of signals. The adaptation of expectations shows strong heterogeneity across different groups.

4.5 | Convergence to West Germany

We now analyse the convergence between East and West Germany based on a counterfactual analysis analogous to Section 4.2. To do so, we predict the binary outcome variables (job loss expectations and accurate expectations) for the counterfactual of West German signals and East German interpretation of signals. The difference between the average outcomes in the East and the counterfactual is the change in signals (endowments), whereas the average outcome in the West minus the counterfactual reflects the change in interpretations (coefficients).²¹

²¹This decomposition could also be applied for changes within East Germany over time. However, then the problem arises how to separate the change in the intercept over time from changes in the other coefficients reflecting the interpretation of signals. We analyze convergence between East and West Germany based on evaluating differences between East and West in the same year. Here, convergence in coefficients is also meant to imply equalization of the intercept, which is reasonable when analysing the degree of convergence between East and West Germany.

TABLE 2 Determinants of correct work, correct unemployment, pessimism and optimism in 1991 and 1999 in East Germany

| Dependent variable | Correct work | | Correct unemployment | |
|--------------------|--------------|-----------|----------------------|-----------|
| | 1991 | 1999 | 1991 | 1999 |
| Change firm emp. | | | | |
| Previous year | | | | |
| Increased | (.) | (.) | (.) | (.) |
| Decreased | −0.101** | −0.069 | 0.036 | −0.004 |
| Constant | 0.023 | 0.009 | −0.01 | 0.008 |
| Don't know | −0.062 | −0.091 | −0.002 | 0.086** |
| Exp. change firm | | | | |
| Emp. next year | | | | |
| Increase | (.) | (.) | (.) | (.) |
| Decrease | −0.303*** | −0.182*** | 0.229*** | 0.097*** |
| Constant | −0.021 | −0.065 | 0.036 | 0.006 |
| Don't Know | −0.16** | −0.144*** | 0.104*** | 0.043 |
| Observations | 1,871 | 945 | 1,871 | 908 |
| Dependent variable | Pessimistic | | Optimistic | |
| | 1991 | 1999 | 1991 | 1999 |
| Change firm emp. | | | | |
| Previous year | | | | |
| Increased | (.) | (.) | (.) | (.) |
| Decreased | 0.082 | 0.033 | 0.02 | 0.032 |
| Constant | 0.001 | −0.015 | 0.011 | −0.009 |
| Don't Know | 0.053 | 0.083 | 0.024 | −0.084*** |
| Exp. change firm | | | | |
| Emp. next year | | | | |
| Increase | (.) | (.) | (.) | (.) |
| Decrease | 0.205*** | 0.119*** | −0.083** | −0.019 |
| Constant | 0.029 | 0.028 | −0.022 | 0.025 |
| Don't Know | 0.106* | 0.026 | 0.003 | 0.054 |
| Observations | 1871 | 927 | 1871 | 945 |

Note: Displayed coefficients are average marginal effects from logistic regression. Values for tenure, age, job changes and wage are standardized on a yearly basis. For readability, results for most control variables have been suppressed. The full list of control variables are: gender, education, state of residence, occupation, industry, indicators for the unemployment history, whether the worker lived in a urban or rural area, firm size, how the employment in her firm changed in the last 12 months and expectations about the change in the workforce in the next 12 months as well as values for age, age², wages, tenure in the industry and tenure in the firm standardized (by year). Dependent Variables are defined in Section 4. Significance: * Significant on the 10% level, **Significant on the 5% level, ***Significant on the 1% level.

Figure 12 shows the results of the decomposition between East Germany and West Germany in 1991 and 1999. The graph on the left shows that in 1991, the East-West differences in the shares of job loss expectations and accurate expectations were large and that both factors, differences in

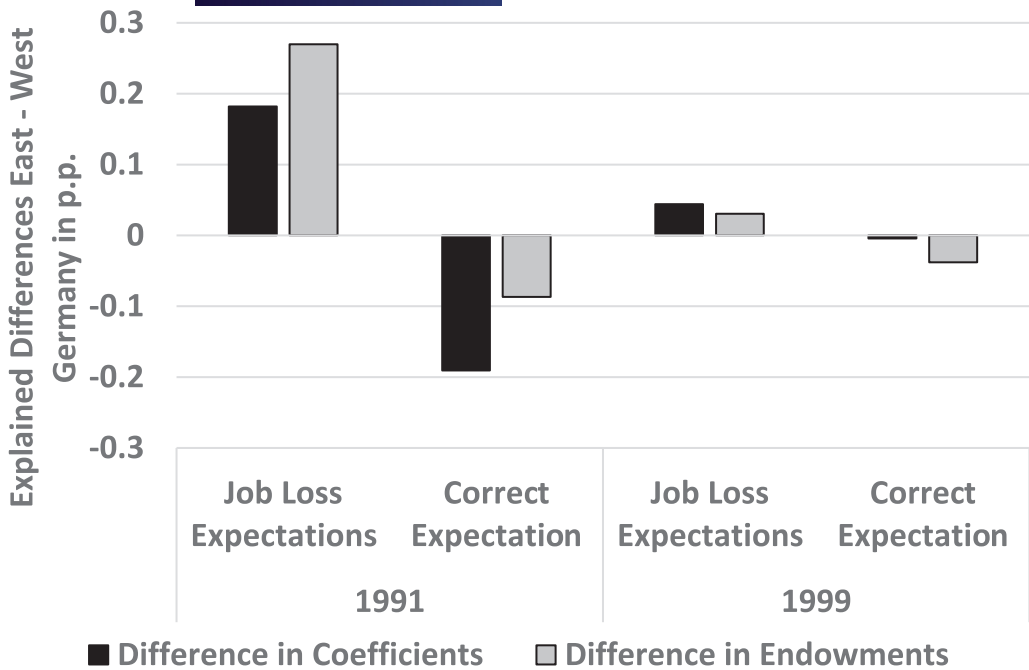


FIGURE 12 Differences in signals and coefficients in East and West Germany

Note: The estimates are based on a nonlinear Oaxaca-Blinder-Decomposition using a Logit Model and East Germany as the reference model. Displayed differences are the absolute amount of the difference in the outcome variable between East and West Germany explained by differences in endowments and coefficients respectively

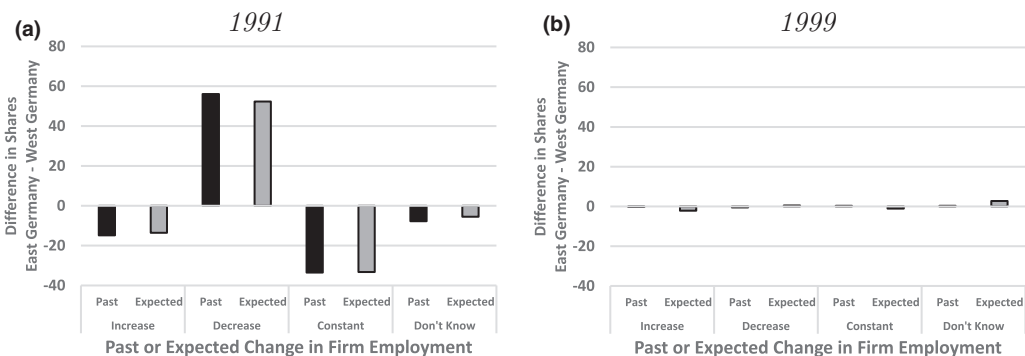


FIGURE 13 Differences in shares of expected and past firm employment East-West 1991 and 1999

Note: Each bar in each category of expected/past changes in firm employment represents the difference between the share of workers that expect/report this change in firm employment in East German and West Germany in 1991 (left) and 1999 (right)

signals and coefficients, are important in explaining these differences. The differences in signals prove more important for job loss expectations than for accurate expectations. In contrast, the East-West difference in job loss expectations and accurate expectations was very small in 1999.²²

²²When using East German signals and West German coefficients as counterfactual in the decomposition, the differences in coefficients explain a much higher share of overall differences in 1991. This is due to the fact that the coefficients for the variables (signals) involving the strongest differences were much larger for East Germany, in particular regarding past/expected changes in firm employment.

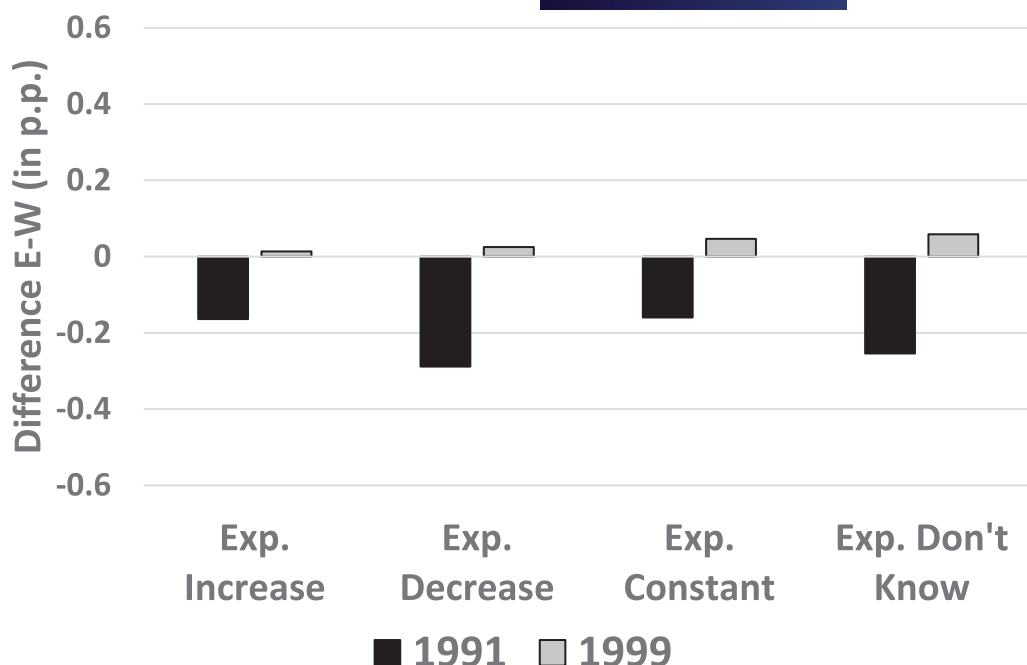


FIGURE 14 Difference in shares of accurate expectations East/West in 1991/99 by expected changes in firm employment

Note: Each bar in each expectation category represents the difference between the shares of accurate expectations amongst workers in the specific category of expected changes in firm employment in East and West Germany for 1991 and 1999

To allow for a more in-depth analysis, we further analyse the development of signals and coefficients with regard to past and expected changes in firm employment.

The East–West differences in past and expected changes in firm employment in 1991 and 1999 are depicted in Figure 13. The 1991 figure shows substantial East–West differences. In contrast to the majority of East German workers who expected and reported a rather dismal situation of their employer (64%), only 12% of West German workers expected their firm's employment to decrease. In contrast, 54% of workers in West Germany expected firm employment to remain constant and 21% expected an increase. The shares of reported past changes mirror these numbers. By 1999, this had changed completely. The discrepancies with respect to past and expected changes in firm employment nearly vanished, showing a remarkable convergence between East and West Germany, which should explain a large part of the observed convergence.

The share of accurate expectations, by categories of expected changes in firm employment, also show convergence. The bars in Figure 14 display the differences in the average share of accurate expectations in East and West Germany for each category of expected changes in firm employment in 1991 and 1999. The results show that in 1991, accurate expectations were on average lower for all workers in East Germany, irrespective of the expectation about changes in firm employment and were considerably lower for those workers who expected a decrease in firm employment or do not know. In contrast, there existed only small differences conditional on expectations regarding firm employment in 1999.

Overall, the economic situation, as well as the interpretation of market signals in East Germany showed a remarkable convergence to West Germany, despite the remaining large economic differences between the two parts of the country (Burda & Hunt, 2001).

TABLE 3 Job loss expectations and changes in prevalence over time for different types of job loss

| | Shares types of future job loss | | | | |
|---|---|--------|--------|--------|--------|
| | 1991 | 1992 | 1994 | 1996 | 1999 |
| Reason job loss | | | | | |
| Laid off | 84.61% | 73.24% | 68.07% | 56.32% | 48.56% |
| Voluntary termination | 8.6% | 8.62% | 9.18% | 9.07% | 11.43% |
| End temporary contract/Annulment contract | 6.8% | 18.15% | 22.75% | 34.6% | 40.01% |
| Observations | 384 | 250 | 172 | 164 | 127 |
| | Share job loss expectation by type of future job loss | | | | |
| | 1991 | 1992 | 1994 | 1996 | 1999 |
| Reason job loss | | | | | |
| Laid off | 74.47% | 59.63% | 40.88% | 28.71% | 29.98% |
| Voluntary termination | 41.72% | 36.64% | 20.24% | 24.43% | 20.39% |
| End temporary contract/Annulment contract | 72.51% | 78.35% | 72.89% | 86.1% | 76.46% |
| No job loss | 39.65% | 22.43% | 17.11% | 12.47% | 7.52% |
| Observations | 1,408 | 1,229 | 1,150 | 1,001 | 844 |

Note: Shares are based on workers who are employed in a given year. Reason for job loss refers to the reason of the first job loss in the next two years and 'No Job Loss' is true for workers who do not become unemployed within the next two years.

5 | ROBUSTNESS CHECKS

5.1 | Involuntary job loss

Until now, each transition to unemployment has been treated as a job loss. However, job termination can have different causes, involving an (involuntary) lay-off, a voluntary termination of the contract by the worker or an expiration/annulment of a contract.²³ The SOEP provides the reason for job termination of a substantial share of cases in East Germany (around 71%). Table 3 shows the distribution of different reasons for job termination for all job losses (upper panel) and the share of job loss expectations amongst workers conditional on type of job loss/no job loss during the next two years (lower panel). The reported reasons concern the cause of the first job termination during the two subsequent years.

The share of workers being laid-off, amongst those who become unemployed, declined from 85% in 1991 to 49% in 1999, mostly due to an increase in the share of expiring of temporary contracts/annulment of contracts, whereas voluntary resignations remained stable at 9%–11%. These changes are consistent with the strong transformation process in the early 1990s, when many jobs were lost and the subsequent economic stabilization raised the share of less stable and temporary jobs. The shares in 1999 were close to the corresponding shares in West Germany. Job loss expectations differed strongly, conditional on the type of job loss/no job loss (see the lower part of Table 3). Prior to a job loss due to a temporary contract expiring or a contract annulment, workers had a consistently high likelihood of expecting job loss. Workers who quit their jobs

²³The latter two reasons can be distinguished in the SOEP, but in some years the two reasons are combined in the same answer category. Thus, we combine them in our analysis.

TABLE 4 Shares additional variables 1991–1999

| | 1991 | 1992 | 1994 | 1996 | 1999 |
|--------------------------------------|--------|--------|--------|--------|--------|
| Worries general economic situation | | | | | |
| Great worries | 48.04% | 36.55% | 36.84% | 43.41% | 26.14% |
| Some worries | 46.92% | 56.04% | 59.26% | 53.25% | 70.3% |
| No worries | 5.04% | 7.41% | 3.9% | 3.33% | 3.55% |
| Observations | 1,866 | 1,497 | 1,311 | 1,149 | 943 |
| Worries own economic situation | | | | | |
| Great worries | 40.16% | 30.55% | 22.57% | 20.44% | 19.23% |
| Some worries | 53.31% | 60.56% | 66.38% | 63.48% | 65.59% |
| No worries | 6.53% | 8.89% | 11.05% | 16.09% | 15.18% |
| Observations | 1,868 | 1,498 | 1,310 | 1,147 | 944 |
| Worries job security | | | | | |
| Great worries | 50.05% | 39.36% | 23.53% | 21.2% | 23.91% |
| Some worries | 36.1% | 41.24% | 52.04% | 48.16% | 54.54% |
| No worries | 13.85% | 19.4% | 24.43% | 30.64% | 21.54% |
| Observations | 1,841 | 1,471 | 1,294 | 1,135 | 935 |
| Chance of finding a similar position | | | | | |
| Easy | 7.97% | 13.33% | 12.48% | | 6.71% |
| Difficult | 58.38% | 58.53% | 58.97% | | 67.47% |
| Basically Impossible | 33.65% | 28.14% | 28.55% | | 25.83% |
| Observations | 1,867 | 1,502 | 1,310 | | 943 |

Note: Shares are based on workers who are employed in a given year. The question for re-employability was not asked in 1996.

themselves largely expected a job loss in 1991, but the share declined quickly over time and remained low. In the case of lay-offs the share of job loss expectations amounted to 74% in 1991, suggesting that job losses due to lay-offs were actually easy to predict in that year. However, the share of job loss expectations for this group declined strongly to around 30% in 1999. This reflects a general downward trend in job loss expectations and a decline in the share of lay-offs that were easily predictable. Thus, workers in later years did not foresee a job termination under stable circumstances. Finally, the share of job loss expectations amongst those who did not lose their job fell from 40% in 1991 to 8% in 1999.

To summarize, our findings show that job loss expectations differed according to the type of job loss. Nevertheless, when only considering involuntary job losses, the trends in expectation accuracy in East Germany are very similar to the above findings for all job losses, since most of the changes over time were driven by the decrease in pessimism.

5.2 | Additional outcomes

Next, we investigate if the patterns found for job loss expectations are also present for other subjective expectations about personal or general economic developments, and whether these assessments moderate the effect of our control variables on job loss expectations. The first set of outcomes involves worries about the future regarding the general economic situation, personal

situation or job security. The trend in worries was quite similar to that for job loss expectations. Nearly half of all workers reported strong worries about the general economy or their job security in 1991, and 40% reported strong worries about their own economic situation. By 1999, these figures had dropped to 26% for worries about the general economy, 19% for their own situation and 24% for job security. In a regression explaining job loss expectations, worries about the general economic situation or the personal economic situation both show a positive association, whilst the coefficients of the other covariates remain basically unchanged. In particular, the strong effect of expecting a decline in firm employment is, thus, specific to job loss expectations. It does not strongly affect other subjective assessments, like worries about the general or the personal economic situation, when these are used as outcome variables in a logit regression.²⁴ This also suggests that an expected decline in firm employment reflected the actual assessment of the economic situation of the firm, rather than general pessimism. Finally, the wording of the job loss question does not seem to drive our findings. Individual level determinants have a similar effect on worries about job security as they have on job loss expectations (results are available upon request).

Next, we explore expected re-employment opportunities. Employed workers were asked how easy (easy, difficult or basically impossible) it would be for them to find a job comparable to their current employment in case of job loss (unfortunately, no such information is available for the unemployed).²⁵ Surprisingly, re-employment expectations remained rather stable over time in East Germany. The share of 'easy' ('difficult') was 8% (58%) in 1991 and 7% (68%) in 1999, respectively. The share of 'basically impossible' was 34% in 1991 and 26% in 1999. Thus, the economic stabilization and the associated decline in expected job loss risk did not improve re-employment expectations. In West Germany, however, re-employment expectations worsened over time, which lead to a convergence between East and West. In contrast to job loss expectations, re-employment expectations were not strongly influenced by the assessment of the economic situation of the firm. The share of workers who answered 'easy' was about 3 pp lower in 1991 for workers who expected decreasing/constant employment in their firm, compared to those who expected an increase in 1991 (the figures for workers who answered 'difficult' or 'basically impossible' were 4 pp and – 8 pp respectively). Even these small differences vanished by 1999 (detailed results are available upon request).

6 | QUALITY OF JOB LOSS PREDICTIONS

The convergence of East German job loss expectations towards West German levels was driven by a decline of job loss expectations amongst East German workers who expected job loss in the early 1990s, but who actually retained their job in subsequent years (see Section 3). Still, the puzzle remains that job loss rates amongst those holding job loss expectations in the early 1990s were higher in East Germany than in West Germany, and the gap even increased until 1999, before

²⁴Concerning the subjective assessment of the economic situation, workers who expected a decrease in firm employment in 1991 were 13 pp more likely to have great worries about their own economic situation, rather than some or no worries and the effect vanished over time. The effects are insignificant with respect to the assessment of the general economic situation in 1991 or 1999.

²⁵Dickerson & Green (2012) use this question to analyze the accuracy of expectations by unemployed individuals. They find German workers (aggregating East and West) to be slightly too optimistic, a finding subject to the caveat that only employees are asked about this issue. Drahs et al. (2018) report that unemployed workers are overoptimistic about their expected wage after re-employment.

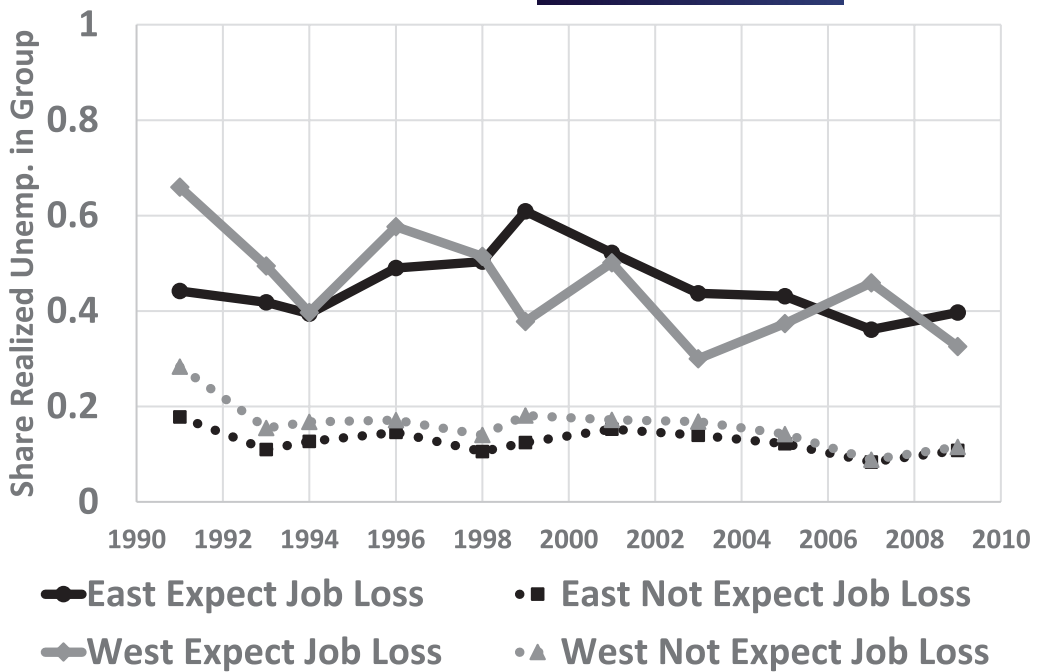


FIGURE 15 Realized unemployment conditional on job loss expectations after reweighting

Note: Displayed results for West Germany are based on a sample that has been reweighted to mirror the distribution of the likelihood of job loss in East Germany. Displayed shares are the weighted averages of the outcome variables in West Germany, separately for the group that expected job loss and for those who did not expect job loss, using the estimated IPW as weights, whereas the results for East Germany are not based on reweighting

starting to close. Thus, one might come to the surprising conclusion that East Germans were more often correct in their job loss expectations in the 1990s than West Germans. A simple alternative explanation, however, could be that the job loss rate was consistently higher in East Germany. To assess how the job loss rate amongst those who expected job loss in West Germany would have changed, if the job loss rate in West Germany were the same as in East Germany, we reweight the West German sample to create a sample that mirrors the East German sample with regard to the job loss risk. To do so, we use Inverse Probability Weights (IPW) based on regressing a region dummy on our job loss indicator separately for each year (see Appendix A for a formal discussion).

Figure 15 shows job loss rates conditional on job loss expectations for workers in East Germany and for the reweighted sample in West Germany. For those who did not expect job loss, the level differences between East and West Germany mostly vanish through reweighting, and there is almost complete convergence from the mid-1990s onwards – apart from year-to-year fluctuations in both curves for those who expected job loss. Holding job loss risk constant, West Germans were actually better at predicting job loss in the early 1990s, and the rates were similar afterwards. This means that differences in job loss risk can explain the surprising observation that East German workers had a higher job loss rate when holding job loss expectations. At the same time, the reweighting exercise cannot explain the fact that, amongst workers who held job loss expectations, the share of workers who lost their job first increased and then decreased in East Germany.²⁶

²⁶The developments are not driven by sample attrition. The findings for different samples, for example conditioning on not dropping out of the SOEP between 1991 and 1999 or 2009, all show similar developments. Detailed results are available upon request.

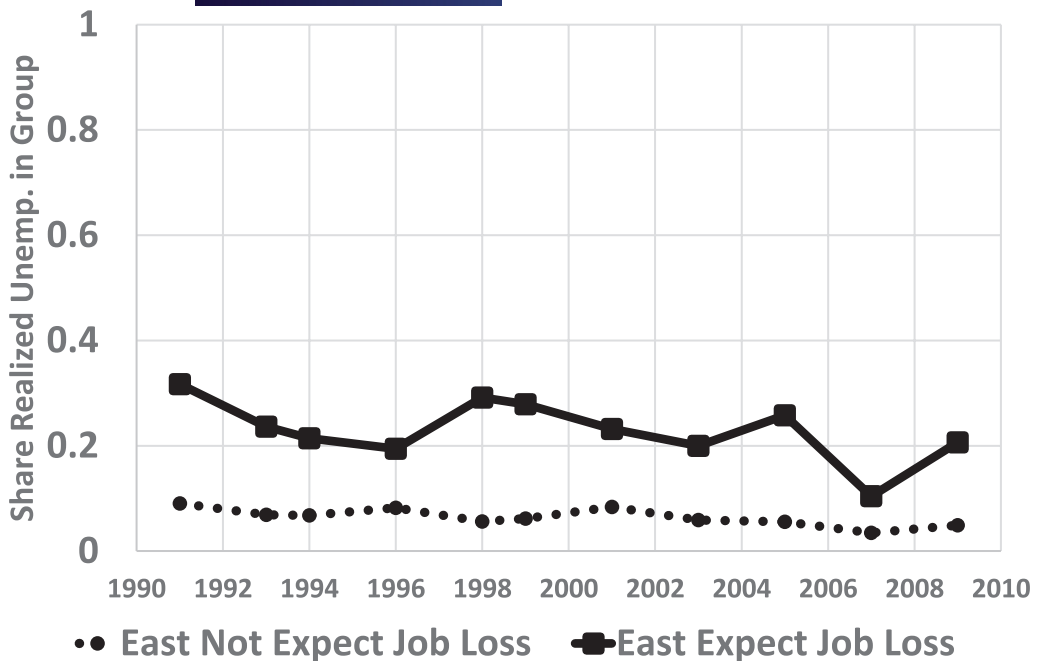


FIGURE 16 Realized unemployment through lay-offs conditional on job loss expectations

Note: Displayed are job loss rates for the group of East German workers who expected job loss and for the group who did not expect job loss. In contrast to before, only job loss through a lay-off is counted as job loss

Some of the patterns observed amongst those who expected job loss in East Germany can be explained by reasons for job termination and by composition effects. An increasing share of workers who expected job loss were those who correctly did so because they predicted the future expiration/annulment of their contract. This increased the rate of job loss amongst those who expected to lose their job and thus the share of those who correctly predicted job loss. Figure 16 shows the job loss rate for workers, when only lay-offs are considered. The job loss rate amongst East German workers who expected job loss is now much more stable over time (apart from a drop in 2007).²⁷ Furthermore, the decline in the overall job loss rate for workers who expected job loss after 1999 is driven by the growing share of workers who changed from not expecting to expecting job loss, amongst workers who expected job loss. This group showed a lower job loss rate than other workers who expected job loss.

7 | CONCLUSIONS

Our findings show that a large negative economic shock, such as the reunification shock in East Germany, can strongly distort job loss expectations leading to strong overpessimism, as 30% of workers expected job loss, but actually did not lose their jobs in the early 1990s in East Germany. Since various studies point to the negative effect of job loss expectations on individual

²⁷When only involuntary job losses are considered, the findings are quite similar to the case with all job losses.

However, in the West German sample a reason is available only for 50% of job losses and involuntary job losses make up only around 45% of job losses for which a reason is reported.

level outcomes (such as well-being, job security or wage growth), such overpessimism might have strong effects on these outcomes. However, our results also demonstrate that the stabilization of the economic situation and the adaptation of expectations through changing interpretations of economic signals, strongly reduced job loss expectations and (over)pessimism over time. Comparing East and West Germany shows that, within a decade, job loss expectations converged to a remarkable degree between the two parts of the country. Furthermore, we find that the assessment of the economic situation of a worker's firm is the key driver of job loss expectations, rather than the assessment of the situation of the economy as a whole. When both controls are used together in a regression explaining job loss expectations, greater worries about the general economic situation have a much weaker impact than expecting a decrease in firm employment.

The convergence of job loss expectations in East Germany over the 1990s to West German levels limits adverse long-term effects of the strong initial overpessimism following reunification. However, even in the 2000s, there still existed a difference in the share of workers who were sure not to lose their job. This suggests some lasting adverse effects of the employment uncertainty, as perceived by many East Germans in the years after reunification, on expectations, even long after economic conditions had stabilized.

A more extensive analysis of the scarring effects of experiencing a period of strong economic uncertainty and overpessimism, as documented in the literature for the influence of recessions on preferences and risk taking later in life (Giuliano & Splimbergo, 2014; Malmendier & Nagel, 2011) or on inflation expectations in East Germany (Goldfayn-Frank & Wohlfart, 2020), is a promising area for future research. Future research should also analyse whether similar patterns to those found for East Germany after reunification also apply to other settings where individuals experience a large unexpected negative economic shock, for example in declining industries or regions with mass lay-offs and high economic uncertainty.

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APPENDIX 1

Inverse probability weights

IPW is used to balance the observable characteristics between East and West Germany. Since we reweight towards the distribution of characteristics in East Germany, East German workers get a weight of 1 and we reweight West Germans such that the distribution of job loss risk mimics the one amongst East Germans. To obtain the weights for West Germans, we estimate a logit model for each year with the region dummy as dependent variable and our indicator for future unemployment as control variable. The estimated propensity scores, $\hat{p}(X_i)$, are used to compute the normalized weights for a West German individual j using the following formula

$$\hat{w}_i^y = \frac{\frac{\hat{p}(X_j)}{1 - \hat{p}(X_j)}}{\sum_{i \in N_y} (1 - T_i) \frac{\hat{p}(X_i)}{1 - \hat{p}(X_i)}}$$

where T_i is an indicator which is equal to 1 (0) if individual i is East German (West German) and N_y are all individuals observed in year y . Individuals with too large weights are discarded from the computation of the ATT, based on the method described in Huber et al. (2013). For the reweighted shares in West Germany in year y , $\frac{1}{\sum_{i \in N_y} \hat{w}_i^y} i N_y \in \widehat{\sum \hat{w}_i^y Y_i}$ is computed where Y_i is the indicator variable for holding job loss expectations, future unemployment or a specific expectation-realization pair.

Figures and Tables

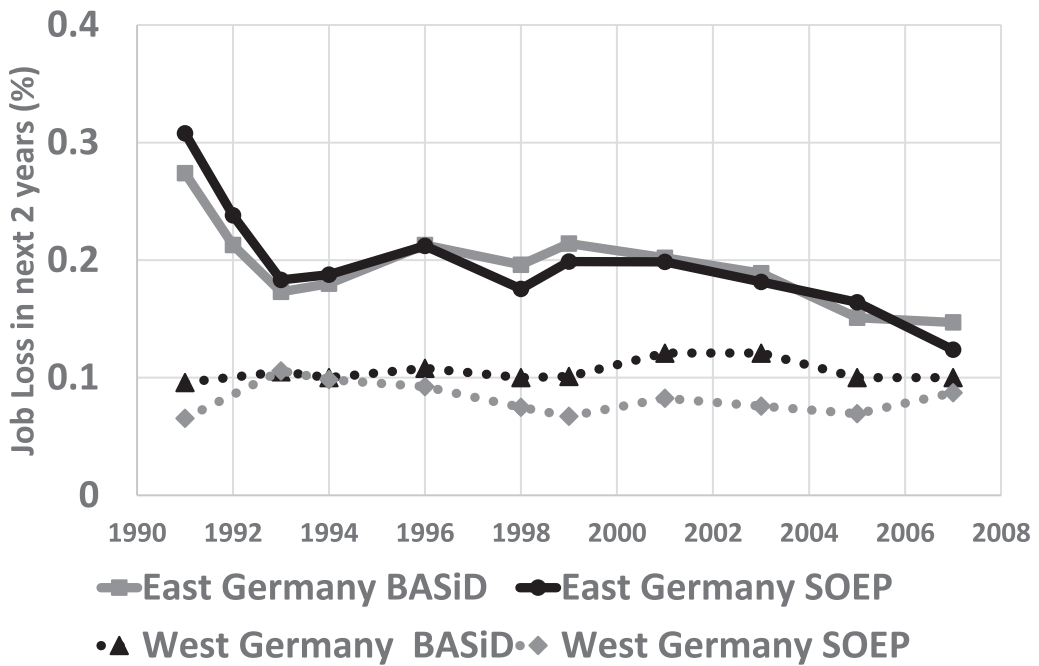


FIGURE A1 Job loss rate in SOEP and BASiD Data

Note: This figure shows the shares of workers who lose their job within the next two years based on two different data sources, namely survey evidence from SOEP and administrative data from BASiD. In both datasets, only unemployment spells and only workers who worked in East/West Germany already before 1990 are included. For BASiD, only information from March of each year is used (the month with the largest share of interviews in the SOEP)

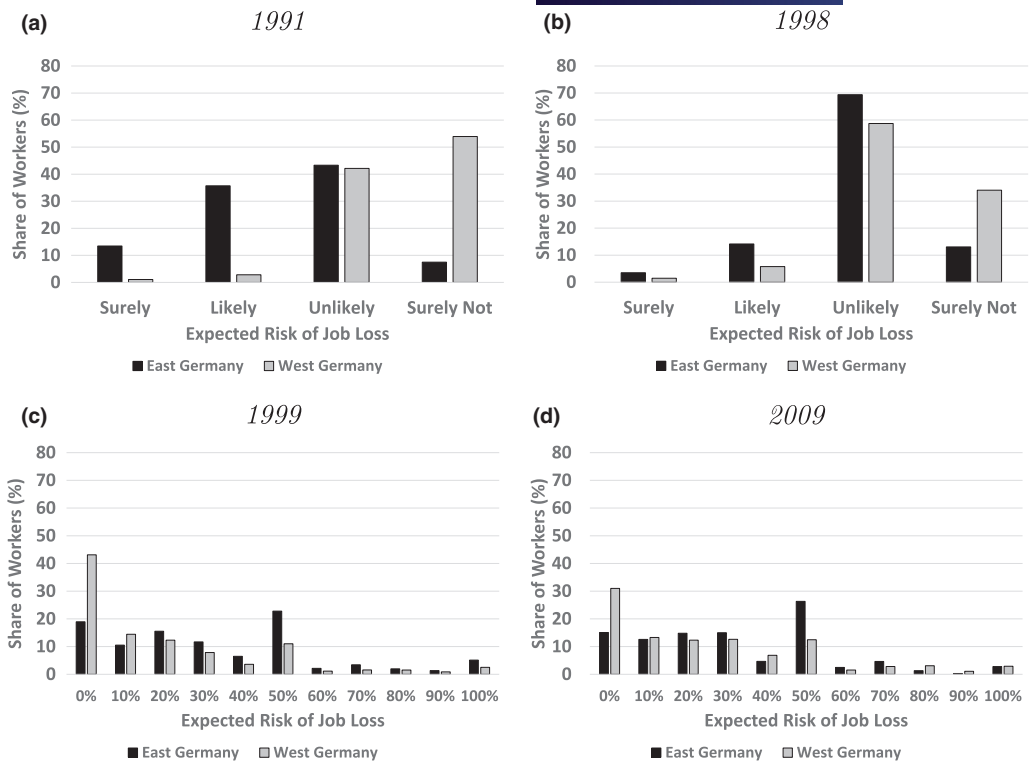


FIGURE A2 Shares of disaggregated job loss expectation indicator

Note: The graphs show the shares of for the different answers to the question whether the worker expected to lose her job in the next two years. Note that the answer scale changed in 1999. Note that after 1999 there is a significant increase in panel attrition in our sample, thus the Figures from 2009 might suffer from decreased comparability over time

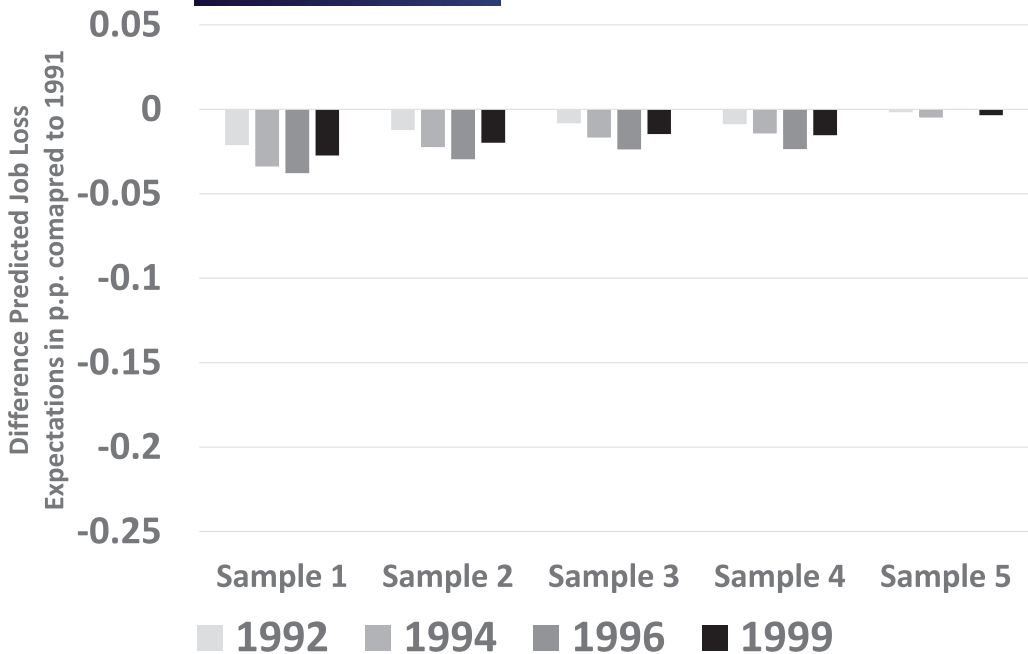


FIGURE A3 Predictive power of changes in individual characteristics across different samples

Note: Results are obtained by using a non-linear Blinder-Oaxaca decomposition, based on predicting the value of the job loss expectation dummy for each worker and in each year, using coefficients from a logistic regression which relies on data from 1991 only. The displayed changes are the differences in percentage points (pp) of the predicted share of workers holding job loss expectations in a given year, compared to the share in 1991. Control variables are gender, state of residence, occupation, industry, indicators for the unemployment history, residence in urban versus rural regions and standardized values for age, wage, number of job changes, months in unemployment since 1990 and industry/firm tenure. Having a university degree is a perfect predictor for job loss expectations in some years in some samples, so the dummy for this category has been taken out as control variables to ensure comparability across different samples and years. Sample 1 is defined as all workers who already worked in the GDR, are less than 60 years old and have no missing values for any of the control variables. Sample 2 then additionally requires workers to not have dropped out of the SOEP between 1991 and 1999. Sample 3 additionally deletes all (past and future) East Germany migrants to West Germany. Sample 4 additionally excludes all individuals who have missing values in at least one control variable in 1991 or 1999. Sample 5 then additionally requires that a worker is employed in both 1991 and 1999.

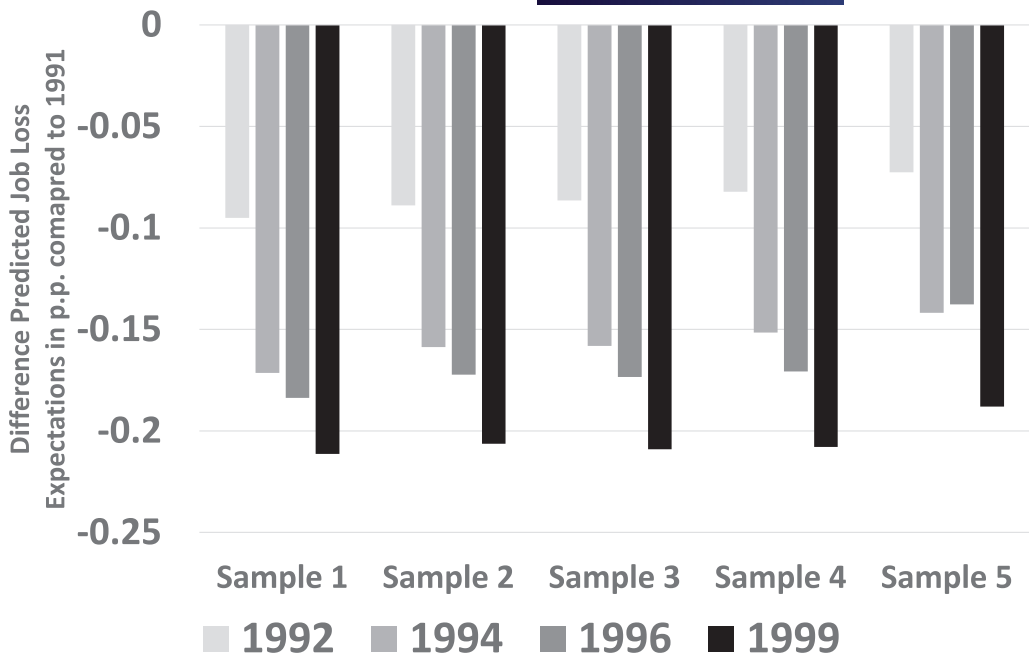


FIGURE A4 Predictive power of changes in firm characteristics across different samples

Note: Results are obtained by using a nonlinear Blinder-Oaxaca decomposition, based on predicting the value of the job loss expectation dummy for each worker and in each year, using coefficients from a logistic regression which relies on data from 1991 only. The displayed changes are the differences in percentage points (pp) of the predicted share of workers holding job loss expectations in a given year, compared to the share in 1991. Control variables are firm size, changes in firm employment in the past 12 months and expected changes in firm employment in the next 12 months. Sample 1 is defined as all workers who already worked in the GDR, are less than 60 years old and have no missing values for any of the control variables. Sample 2 then requires workers to not have dropped out of the SOEP between 1991 and 1999. Sample 3 additionally deletes all (past and future) East Germany migrants to West Germany. Sample 4 additionally excludes all individuals who have missing values in at least one control variable in 1991 and 1999. Sample 5 then additionally requires that a worker is employed in both 1991 and 1999.

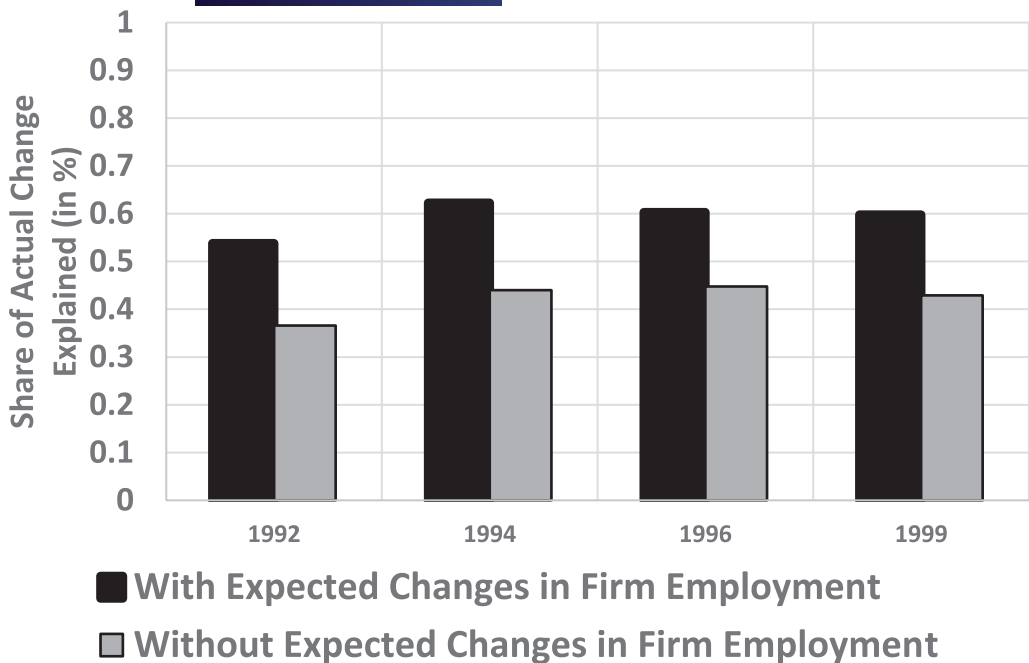


FIGURE A5 Predictive power of changes in economic surroundings without expected changes in firm employment

Note: Results are obtained by using a nonlinear Blinder-Oaxaca decomposition, based on predicting the value of the job loss expectation dummy for each worker and in each year, using coefficients from a logistic regression which relies on data from 1991 only. The displayed shares are the differences in percentage points (pp) of the predicted share of workers holding job loss expectations in a given year, minus the share in 1991 and this figure is then divided by the difference in percentage points (pp) of the actual share of workers holding job loss expectations in a given year, compared to the share in 1991, that is, $\frac{\widehat{Exp}_{y,\beta_{91}} - Exp_{91}}{Exp_y - Exp_{91}}$, where $\widehat{Exp}_{y,\beta_{91}}$ is the predicted share of job loss expectations in year y and Exp_y is the actual share of job loss expectations in year y . Results are shown for two different decompositions, one using firm size, changes in firm employment in the past 12 months and expected changes in firm employment in the next 12 months as control variables, and one using only firm size and changes in firm employment in the past 12 months as control variables

TABLE A1 Confusion matrix

| | Expect Job Loss = No | Expect Job Loss = Yes |
|-----------------------|---------------------------------|---------------------------------|
| Actual Job Loss = No | True Negative 'Correct Work' | False Positive 'Pessimistic' |
| Actual Job Loss = Yes | False Negative 'Optimistic' | True Positive 'Correct UE' |

TABLE A2 Average marginal effects based on 1991 coefficients

| | Job loss expectations | | | | |
|--------------------------|-----------------------|-----------|-----------|-----------|-----------|
| | 1991 | 1992 | 1994 | 1996 | 1999 |
| Exp. change firm | | | | | |
| Emp. next year | | | | | |
| Increase | (.) | (.) | (.) | (.) | (.) |
| Decrease | 0.406*** | 0.398*** | 0.389*** | 0.385*** | 0.389*** |
| Constant | 0.056 | 0.053 | 0.05 | 0.048 | 0.049 |
| Don't know | 0.186*** | 0.178*** | 0.169*** | 0.165*** | 0.168*** |
| Industry | | | | | |
| Trade, Transport | (.) | (.) | (.) | (.) | (.) |
| Manuf., Agric. Energy | 0.112*** | 0.104*** | 0.1*** | 0.101*** | 0.1*** |
| Construction | 0.054 | 0.05 | 0.047 | 0.047 | 0.046 |
| Serv., Bank, Insur. | 0.029 | 0.027 | 0.025 | 0.025 | 0.025 |
| Male | −0.072** | −0.068** | −0.066** | −0.067** | −0.067** |
| Unemployed last 12 month | 0.146*** | 0.144** | 0.146** | 0.149** | 0.151** |
| Wage | −0.087*** | −0.081*** | −0.078*** | −0.079*** | −0.079*** |
| Observations | 1,871 | 1504 | 1,313 | 1,149 | 945 |

Note: Average marginal effects are computed based on the coefficients of a logit regression with job loss expectations as dependent variable using data from 1991 only. Average marginal effects for later years are then estimated using the values of the control variables in these years but the coefficients from the logit regression in 1991 to assess how changes in the distribution of control variables affect the values of average marginal effects over time when coefficients are held constant. The full list of control variables are: gender, education, federal state of residence, occupation, industry, indicators for the unemployment history, whether the worker lived in a urban or rural area, firm size, how the employment in her firm changed in the last 12 months as well as values for age, age², wages, tenure in the industry and tenure in the firm standardized (by year). Significance: * Significant on the 10% level, ** Significant on the 5% level, *** Significant on the 1% level.

TABLE A3 Determinants of expectations, unemployment and accurate expectations in East Germany without expected firm employment

| Dependent variable | Expectations | | Job Loss | | Accurate expectations | |
|--------------------------|--------------|----------|-----------|----------|-----------------------|-----------|
| | 1991 | 1999 | 1991 | 1999 | 1991 | 1999 |
| Change firm emp. | | | | | | |
| Previous year | | | | | | |
| Increased | (.) | (.) | (.) | (.) | (.) | (.) |
| Decreased | 0.291*** | 0.107*** | 0.116*** | 0.036 | -0.153*** | -0.103** |
| Constant | 0.074 | 0.007 | 0.03 | 0.009 | -0.038 | 0.012 |
| Don't know | 0.083 | 0.221*** | 0.051 | 0.064 | -0.12 | 0.041 |
| Firm size | | | | | | |
| 1 to 20 employees | (.) | (.) | (.) | (.) | (.) | (.) |
| 20 to 200 employees | 0.064* | 0.043 | 0.08** | 0.001 | -0.009 | 0.057 |
| 200 to 2000 employees | 0.138*** | 0.103*** | 0.106*** | -0.032 | -0.033 | 0.043 |
| More than 2000 | 0.15*** | 0.031 | 0.037 | -0.1** | -0.066 | 0.051 |
| Industry | | | | | | |
| Trade, Transport | (.) | (.) | (.) | (.) | (.) | (.) |
| Manuf., Agric. Energy | 0.139*** | -0.052 | 0.034 | 0.029 | -0.002 | -0.035 |
| Construction | 0.056 | 0.019 | 0.065 | 0.12** | 0.061 | -0.184*** |
| Serv., Bank, Insur. | 0.016 | -0.049 | -0.059 | 0.024 | 0.069 | -0.035 |
| Male | -0.08*** | -0.044* | -0.066** | -0.064** | 0.049 | 0.078** |
| Unemployed last 12 month | 0.16*** | 0.215*** | 0.325*** | 0.259*** | 0.085 | 0.01 |
| Wage | -0.095*** | -0.015 | -0.092*** | -0.033** | 0.012 | 0.025 |
| Observations | 1,871 | 945 | 1,871 | 945 | 1871 | 945 |

Note: Displayed coefficients are average marginal effects from logistic regression. Values for wages are standardized on a yearly basis. For readability, results for some control variables have been suppressed. The full list of control variables are: gender, education, federal state of residence, occupation, industry, indicators for the unemployment history, whether the worker lived in a urban or rural area, firm size, how the employment in her firm changed in the last 12 months as well as values for age, wages, tenure in the industry and tenure in the firm standardized (by year). Significance: *Significant on the 10% level, **Significant on the 5% level, ***Significant on the 1% level.

TABLE A4 Determinants of job loss expectations for all years

| Dependent variable | Job loss expectations | | | | |
|--------------------|-----------------------|----------|----------|----------|----------|
| | 1991 | 1992 | 1994 | 1996 | 1999 |
| Change firm emp. | | | | | |
| Previous year | | | | | |
| Increased | (.) | (.) | (.) | (.) | (.) |
| Decreased | 0.091 | 0.093** | 0.125*** | 0.067 | 0.045 |
| Constant | −0.031 | −0.029 | 0.027 | 0.006 | −0.001 |
| Don't know | 0.045 | 0.052 | 0.12* | 0.014 | 0.186*** |
| Exp. change firm | | | | | |
| Emp. next year | | | | | |
| Increase | (.) | (.) | (.) | (.) | (.) |
| Decrease | 0.406*** | 0.386*** | 0.296*** | 0.278*** | 0.199*** |
| Constant | 0.056 | 0.069** | 0.032 | 0.03 | 0.036 |
| Don't know | 0.186*** | 0.175*** | 0.218*** | 0.147** | 0.076* |
| Observations | 1,871 | 1,504 | 1,313 | 1,149 | 945 |

Note: Displayed coefficients are average marginal effects from logistic regression. Values wages are standardized on a yearly basis. For readability, results for some control variables have been suppressed. The full list of control variables are: gender, education, federal state of residence, occupation, industry, indicators for the unemployment history, whether the worker lived in a urban or rural area, firm size, how the employment in her firm changed in the last 12 months and expectations about the change in the workforce in the next 12 months as well as values for age, age², wages, tenure in the industry and tenure in the firm standardized (by year). Significance: *Significant on the 10% level, **Significant on the 5% level, ***Significant on the 1% level.

TABLE A5 Determinants of job loss expectations, unemployment and accurate expectations in different samples in 1991

| Dependent variable | Job loss expectations | | | | |
|--------------------|-----------------------|----------|----------|----------|----------|
| | Sample 1 | Sample 2 | Sample 3 | Sample 4 | Sample 5 |
| Change firm emp. | | | | | |
| Previous year | | | | | |
| Increased | (.) | (.) | (.) | (.) | (.) |
| Decreased | 0.091 | 0.035 | 0.053 | 0.041 | 0.03 |
| Constant | −0.031 | −0.112 | −0.108 | −0.126 | −0.157* |
| Don't know | 0.045 | 0.077 | 0.1 | 0.119 | 0.207** |
| Exp. change firm | | | | | |
| Emp. next year | | | | | |
| Increase | (.) | (.) | (.) | (.) | (.) |
| Decrease | 0.406*** | 0.451*** | 0.446*** | 0.445*** | 0.427*** |
| Constant | 0.056 | 0.112* | 0.089 | 0.076 | 0.075 |
| Don't know | 0.186*** | 0.185*** | 0.155** | 0.145* | 0.136 |
| Dependent variable | Actual unemployment | | | | |
| Change firm emp. | | | | | |
| Previous year | | | | | |
| Increased | (.) | (.) | (.) | (.) | (.) |
| Decreased | 0.055 | 0.083 | 0.053 | 0.024 | −0.007 |
| Constant | 0.003 | 0.029 | 0.037 | 0.024 | −0.055 |
| Don't Know | 0.026 | 0.086 | 0.081 | 0.076 | −0.013 |
| Exp. change firm | | | | | |
| Emp. next year | | | | | |
| Increase | (.) | (.) | (.) | (.) | (.) |
| Decrease | 0.127*** | 0.124** | 0.131** | 0.167*** | 0.159*** |
| Constant | 0.005 | 0.032 | 0.029 | 0.049 | 0.072 |
| Don't Know | 0.088 | 0.096 | 0.101 | 0.115* | 0.173*** |
| Dependent variable | Accurate expectations | | | | |
| Change firm emp. | | | | | |
| Previous year | | | | | |
| Increased | (.) | (.) | (.) | (.) | (.) |
| Decreased | −0.099* | −0.005 | −0.008 | 0.006 | 0.031 |
| Constant | −0.014 | 0.026 | 0.04 | 0.067 | 0.104 |
| Don't know | −0.091 | −0.045 | −0.041 | −0.034 | −0.126 |

(Continues)

TABLE A5 (Continued)

| Dependent variable | Accurate expectations | | | | |
|--------------------|-----------------------|-----------|-----------|-----------|-----------|
| Exp. change firm | | | | | |
| Emp. next year | | | | | |
| Increase | (.) | (.) | (.) | (.) | (.) |
| Decrease | −0.12** | −0.188*** | −0.202*** | −0.217*** | −0.294*** |
| Constant | −0.004 | −0.056 | −0.068 | −0.072 | −0.084 |
| Don't Know | −0.104 | −0.154* | −0.171** | −0.19** | −0.196** |
| Observations | 1,871 | 1,143 | 1,034 | 930 | 722 |

Note: Displayed coefficients are average marginal effects from logistic regression. Values for wages are standardized on a yearly basis. For readability, results for some control variables have been suppressed. The full list of control variables are: gender, education, federal state of residence, occupation, industry, indicators for the unemployment history, whether the worker lived in a urban or rural area, firm size, how the employment in her firm changed in the last 12 months and expectations about the change in the workforce in the next 12 months as well as values for age, age², wages, tenure in the industry and tenure in the firm standardized (by year). Sample 1 is defined as all observations who already worked in the GDR, are less than 60 years old and have no missing values for any of the control variables. Sample 2 then requires workers to not have dropped out of the SOEP between 1991 and 1999. Sample 3 additionally deletes all (past and future) East Germany migrants to West Germany. Sample 4 additionally excludes all individuals who have missing values in at least one control variable in 1991 and 1999. Sample 5 then additionally requires that a worker is employed in both 1991 and 1999. Significance: *Significant on the 10% level, **Significant on the 5% level, ***Significant on the 1% level.