

# Worker displacement in transition economies and in China

Knowing which workers are displaced in restructuring episodes helps governments devise the right equity- and efficiency-enhancing policies

Keywords: worker displacement, job loss, transition, emerging economies

## ELEVATOR PITCH

Continuous enterprise restructuring is needed for the transition and emerging market economies to become and remain competitive. However, the beneficial effects of restructuring in the medium run are accompanied by large worker displacement. The costs of displacement can be large and long-lasting for some workers and for the economy. To devise the right policy interventions, governments need to fully understand which workers are displaced and what costs they bear.

## KEY FINDINGS

### Pros

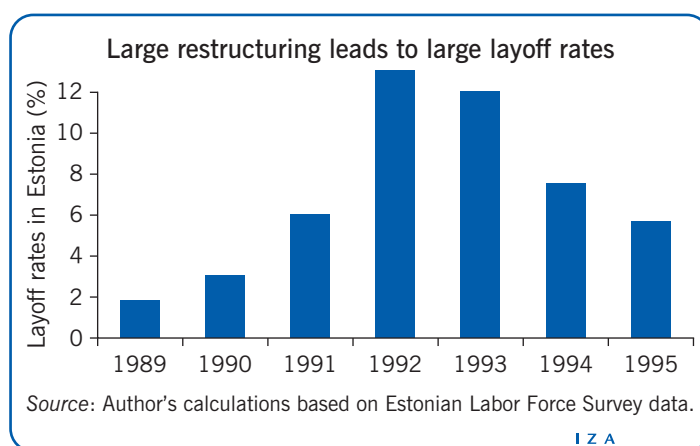
- ⊕ Involuntary layoffs are an essential part of enterprise restructuring.
- ⊕ Involuntary layoffs are small relative to voluntary job separations.
- ⊕ Displacement entails separations from unviable jobs that free resources for more productive use.
- ⊕ Many displaced workers rapidly find new employment, particularly in expanding sectors of the economy.
- ⊕ Layoffs and worker reallocation may relieve firms of excess labor.

### Cons

- ⊖ In periods of extensive restructuring, involuntary layoffs may be high.
- ⊖ Long and frequent periods of unemployment imply an under-use of society's resources.
- ⊖ Some displaced workers might lose firm-specific skills and thus have lower productivity in new jobs.
- ⊖ Not all displaced workers are reallocated to new jobs in expanding sectors.
- ⊖ A substantial minority of displaced workers become long-term unemployed.

## AUTHOR'S MAIN MESSAGE

Necessary economic reforms and enterprise restructuring in transition and emerging market economies can impose large costs on workers displaced from their jobs. Knowing which workers are affected by displacement and whether they experience costs related to unemployment, foregone earnings, and wage penalties upon re-employment enables governments to devise the right equity- and efficiency-enhancing policies, such as income support and job training.



## MOTIVATION

In the former centrally planned economies of Central and Eastern Europe and the Commonwealth of Independent States (CIS), virtually the entire stock of capital was state-owned, and economies were supply-constrained rather than demand-constrained. When these economies opened up to world markets, many state-owned enterprises were privatized, and market forces pushed them to restructure to become competitive, as they did firms that remained state owned. In China, the central government initiated the restructuring of state-owned enterprises that had become non-viable in the post-reform economy. Large restructuring can also accompany general economic reforms that are not specifically directed at enterprises but affect their behavior, such as trade liberalization.

In the short run, one of the main consequences of restructuring has been the massive layoff of workers. Trade liberalization also led to more capital inflows and more capital-intensive production, which resulted in further layoffs.

## DISCUSSION OF PROS AND CONS

### Conceptual and methodological issues related to worker displacement

While worker displacement is an integral part of labor reallocation in all market-oriented economies, displacement has negative impacts on affected workers and imposes costs on the economy. Thus, there are several reasons to analyze its incidence and associated costs. First, it is important to establish whether involuntary job loss is random or whether it affects specific groups. Second, if specific groups are particularly hard hit by displacement, and if some groups of workers remain unemployed for long periods, the government may need to step in. The costs borne by displaced workers can also be costly for the economy (see **Taxonomy of costs to displaced workers analyzed in the literature**). For example, if displaced workers have lower employment rates or work fewer hours than they would have done had they kept their jobs, this points to an under-use of economic resources. In addition, if displaced workers experience long-term wage penalties in their new jobs, this implies a loss of firm-specific human capital, which translates into lower productivity for the economy as a whole. There are also less studied costs, such as a deterioration of workers' health following displacement, which reduces their productivity.

In transition and emerging market economies, worker displacement can play out differently from how it does in mature market economies. For example, workers

#### Definitions of worker displacement

The displacement rate is the ratio of displaced workers to the stock of employed workers.

The United States Bureau of Labor Statistics defines displaced workers as people aged 20 years or older who lost or left jobs because: their plant or company closed or moved; there was insufficient work for them; or their position or shift was abolished.

Studies on transition and emerging economies define job separation as displacement due to an enterprise or organization closing down, moving, reorganizing, going bankrupt, or privatizing, or an employer initiating a reduction in personnel for other reasons.

### Taxonomy of costs to displaced workers analyzed in the literature

*Conventional costs* include the duration of unemployment, loss of skills, lower employment rate, reduced working hours, lower monthly or yearly income, and long-term wage penalties in new jobs.

*Non-conventional costs* include shorter life expectancy, increased health problems of displaced workers or their spouses and children, reduced happiness, increased depression, more fixed-term and informal employment in new jobs, loss of fringe benefits in new jobs, and unwanted self-employment.

in centrally planned economies acquire skills that might be of little use in a market environment. Consequently, for workers who are laid off from un-restructured state-owned enterprises, the loss of firm-specific human capital might be small or non-existent in the new market environment, and wage penalties in new jobs might be absent. But some workers will be laid off from restructured firms or new private firms, where they have acquired firm-specific skills that may be relevant in the new market environment. Whether workers experience wage penalties in their new jobs is therefore an empirical issue. Another difference from mature market economies is that layoffs might need to be massive in an economy that is transitioning from central planning to market directed, and a majority of displaced workers might not be reabsorbed for a long time. Thus, the average duration of unemployment might be substantially longer.

Isolating the costs of displacement for workers is methodologically difficult. The first issue is the selection problem. Displacement costs should be calculated as the difference in outcomes for a worker when displaced and when not displaced. Since a worker cannot be observed in both states, researchers compare the average outcome (average wage) of displaced workers with the average outcome of a control group of non-displaced workers. Ideally, workers in the control group should be identical in all observable and unobservable characteristics to displaced workers. If not, then the two groups being compared could have some important differences that might affect displacement costs, and the estimated costs would not necessarily reflect the true costs of displacement. For example, if the most productive workers leave the firm before displacement occurs, the remaining workers who might eventually be displaced are a select group of low-productivity workers.

A second issue concerns the direction of causality: does displacement cause the analyzed outcome, or does the analyzed outcome cause displacement? Consider health, for example. If workers with worse health are more likely to be displaced than their healthier coworkers, causation would run from increased health problems to displacement and not the other way. Researchers have developed sophisticated estimation techniques to minimize both selection and causality problems.

A third issue is the quality of the data. Research on US and Western European labor markets has shown that displaced workers often earn lower wages even before they are displaced than their non-displaced counterparts. Thus, it is important to have data for analyzing wage profiles for some years before and some years after displacement. Some studies on worker displacement in emerging and transition economies use data with the required time dimension, while others do not.

## Individual country studies

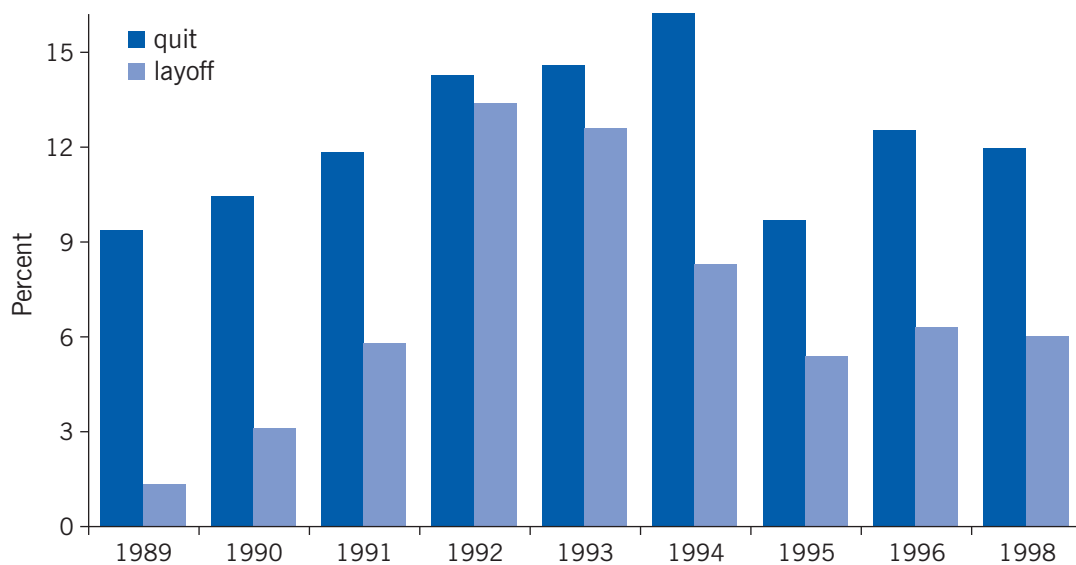
Studies have examined displacement in transition and emerging market economies at different stages of the transition and at different points in the business cycle, and for different types of restructuring processes [1]. In Central and Eastern Europe, the transition shock was primarily one of quantity adjustment in the labor market, as employment fell, while in the CIS countries the shock was primarily one of price adjustment, as real wages fell rapidly. In China, restructuring and reform processes have been quite different from those of the other centrally planned economies, and the studies of displacement in China use narrower data sets. The results for Central and Eastern Europe and the CIS thus get closer to identifying causal effects of displacement, while the results for China are essentially correlations.

### Estonia

Estonia, which started its stabilization, price, and trade liberalization reforms in 1992, has been a fast and thorough reformer [2]. One consequence was an extremely large displacement rate of 12–13% in 1992 and 1993 (see Figure 1). Compare this with layoff rates of 3–6% a year in mature market economies. Most of the displacements in Estonia have been due to layoffs rather than firm closures [3]. Displacement has been higher among men, workers under age 55, and less skilled workers, a pattern often found in mature economies as well. In addition, job loss has been higher in the production sector than in services.

Surprisingly, the return to employment has been fairly rapid, considering the large displacement rates: roughly one-third of displaced workers have a new job within one month, and nearly two-thirds within six months [3]. These return rates are as high as

Figure 1. Displacement and quit rates for Estonia have been high by international standards



Note: Quit rates are voluntary job-leaving rates.

Source: Lehmann, H., K. Philips, and J. Wadsworth. "The incidence and cost of job loss in a transition economy: Displaced workers in Estonia, 1989 to 1999." *Journal of Comparative Economics* 33:1 (2005): 59–87 [3].

those in the UK and the US. They are explained by the capacity of the Estonian economy to create a large number of jobs, even early in the transition, and by extremely low unemployment benefits [2]. It is striking, however, that re-employment rates fall dramatically for displaced workers who are unemployed for more than three months, in particular workers with short employment tenure, women with children, and workers with less education and fewer skills. Thus, while a majority of displaced workers find a new job fairly quickly, a minority have great difficulty finding a job.

Displaced workers who find jobs do not experience wage penalties—wages in their new jobs are not lower than their wages before displacement, on average. In addition, there is no evidence that displaced workers had lower wages in their jobs before displacement. In the early years of transition in Estonia, then, the main costs of displacement consisted of foregone earnings during long spells of unemployment rather than wage penalties for the re-employed. This implies that the loss of human capital was of little importance in the early Estonian transition.

### ***Slovenia***

Cumulative displacement rates in Slovenia early in the transition, 1991–1993, were larger than displacement rates in Canada and the US during the prolonged recession of the early 1980s. Workers with short tenure, less education, and fewer skills were particularly likely to be displaced, as were workers on fixed-term contracts and those employed in the least profitable firms [4]. People who were displaced in 1991 had wages in their pre-displacement jobs that averaged 12% lower than the wages of workers who were not displaced, suggesting that workers threatened by displacement tried to reduce their chances of displacement by accepting lower wages.

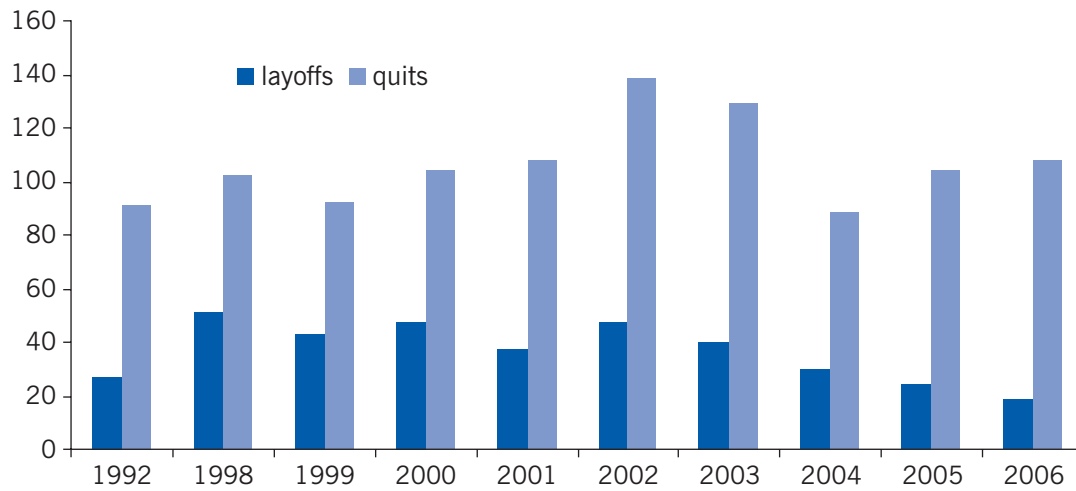
Rates of re-employment were low in early-transition Slovenia. Only about one-third of displaced workers found jobs within 3.7 years—well below the 63% in Canada and 67% in the US during 1981–1985. Most of the re-employed Slovenian workers were highly skilled, while those with low skills remained unemployed for a long time, and many retired early [4]. In contrast to Estonia, re-employed workers in Slovenia suffered large wage losses, since their wages grew on average 70% less than the wages in the economy at large, an indication that the loss of firm-specific human capital was a major problem in the early transition.

### ***Ukraine***

In Ukraine, displacement rates were relatively low at the beginning of the transition in 1992 but reached 4–5% in 1998–2002, a period of sustained growth (see Figure 2) [5]. These rates are comparable with those observed in mature market economies. In both periods, displacement depended less on worker characteristics than on industry and job characteristics.

Re-employment rates within a year of job loss were less than 50% in both periods. Long-term unemployment was a serious consequence of displacement, particularly for women and for workers with low education and skills, short tenure, and previous employment in agriculture. So, while individual characteristics were not related to displacement, they were important to re-employment.

Figure 2. Displacement and quit rates were high in Ukraine, which also experienced a large erosion of real wages



Note: Quit rates are voluntary job-leaving rates.

Source: Lehmann, H., N. Pignatti, and J. Wadsworth. "The incidence and cost of job loss in the Ukrainian labor market." *Journal of Comparative Economics* 34:2 (2006): 248–271 [5].

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Wage penalties for displaced workers who were re-employed were small in the year before and the year after displacement, but the losses disappeared two years after displacement. So, as in Estonia, the major costs to displaced Ukrainian workers were large foregone earnings, due to prolonged periods of joblessness. These costs fell disproportionately on women and on workers with less general and firm-specific human capital.

### Russia

A study of displacement in Russia looked at job loss and re-employment during the boom period of 2003–2008, when gross domestic product (GDP) growth averaged 6–8% [6]. Displacement rates were around 3%, which is comparable to displacement rates in the US during expansionary episodes. However, a 3% displacement rate in Russia translates into a stock of two million unemployed workers; so, even in boom times, displacement is not negligible. Some classes of workers were more affected than others: women and workers with short tenure, low education and skills, and in private firms.

The Russian labor market was sufficiently dynamic in 2003–2008 to reabsorb two-thirds of displaced workers within a year. Thus, long-term unemployment was modest [6]. However, there were other costs, including a lower employment rate and fewer hours worked (and thus lower earnings) for workers who were displaced than for those who were not. These costs persisted even four years after displacement and were particularly large for low-skilled workers. Displaced workers moved in and out of employment more frequently than other workers. It is striking, however, that the wages of displaced workers were not substantially lower than the wages of other workers, either before displacement or in their new jobs. So, as in Estonia and Ukraine, the major costs of displacement were the large foregone earnings during long spells of joblessness, and not wage penalties in the new jobs.

Job loss was associated with a larger incidence of fixed-term employment, informal employment, and reduced benefits in the new job. Thus, displacement increased job insecurity for affected workers.

### *China*

Three studies examine worker displacement in China: two from the 1990s, when the government demanded that state enterprises shrink their workforces, and one from 2003–2009, when market forces drove most of the worker displacement [7], [8], [9]. The studies cover selected urban labor markets that, while not necessarily nationally representative, reflect the variation in development levels across China.

The large layoffs from state enterprises in the second half of the 1990s especially affected older and less educated workers because state enterprises had an aging workforce, with largely obsolete skills [7], [8]. Firms aimed at increasing productivity by shedding these older, low-productivity workers. Only a minority of displaced workers found new jobs; the rest either left the labor force or remained unemployed for many years. Many displaced workers who did not find jobs descended into poverty, either because their pensions were extremely low or because their former employers did not provide the government-mandated income support during their unemployment spells.

A majority of re-employed workers ended up in informal jobs. Even if these jobs did not pay less than their previous jobs (except for the oldest workers), the direct costs of displacement were considerable: very large foregone earnings due to extended unemployment spells, and increased job insecurity for those who found new employment. There were also indirect costs. The health of male workers' children suffered for many years after the job loss [10]. The same was not true for the children of mothers who lost their jobs, perhaps because women's income losses were smaller and because women counteracted the income loss by spending more time with their children.

A study of displacement over 2003–2009, when it was driven predominantly by market forces, looked at two groups of urban Chinese workers: migrants from rural areas and workers who have always resided in the city (*hukou*) [9]. Only the findings for *hukou* are discussed, because the results are more reliable and because migrants are essentially outside the protective structures of the state.

Female and older workers, and workers previously employed in state enterprises or in manufacturing, had a higher likelihood of being displaced. About two-thirds of urban displaced workers found re-employment within a year. Unemployment averaged 17 months, hinting at a substantial incidence of long-term unemployment, if not as long as in the 1990s.

Displaced urban workers incurred large costs [9]. They were unemployed for 8.5 weeks longer than workers who left their jobs voluntarily. Once they were re-employed, their real wages were 23% lower on average than the wages of workers who had not been displaced. They also worked about two hours more a week, mainly because work hours were so low in the state enterprises where most of them worked before. Displaced workers also had a higher probability of re-employment in an informal job (ten percentage points higher), had a slightly worse self-assessed health status, and experienced more depression than other workers.



## Robust empirical regularities across countries

The country evidence presented above suggests several regularities in the empirical data.

### *Which workers are particularly affected by displacement?*

Worker displacement is not random. In the transition economies, displaced workers were disproportionately young, less educated, and less skilled; had low tenure; and had been employed in heavy manufacturing and agriculture. In China, displacement in the 1990s affected mainly older and less skilled workers, while in 2003–2009 it affected mainly older and female workers, less skilled workers, and workers in state enterprises and manufacturing.

### *What is the unemployment experience of displaced workers?*

In the countries examined, only a minority of displaced workers found new employment quickly enough to characterize the change as a job-to-job move. A majority of displaced workers had difficulty finding work, and only about two-thirds of them found work within a year of displacement. Displaced workers had much lower job-finding rates than workers who quit their jobs voluntarily. Among displaced workers, women, older workers, and the less skilled had particularly low return rates to employment.

### *What are the wage and non-wage costs of displaced workers?*

The costs of displacement are large not only for the affected workers but also for the economy. The main wage costs are large foregone earnings due to long spells of unemployment. Displacement also triggers churning in the labor market, leading to additional earnings losses for many displaced workers who find it difficult to hold on to new jobs. Except in China and Slovenia, displaced workers did not encounter wage penalties in their new jobs, suggesting that lost firm-specific human capital is of little value in the new market-oriented environment.

Displaced workers also faced many non-wage costs. A higher incidence of informal and temporary jobs and self-employment resulted in higher job insecurity, with large attendant psychological costs in lower levels of happiness and higher levels of depression. These psychological costs affect productivity and thus economic performance. Worker displacement can also have a long-term negative impact on the economy when parental job loss worsens the health of children.

## LIMITATIONS AND GAPS

The literature on worker displacement in transition and emerging economies is very limited, with many gaps due to severe data limitations. The most important gap is the absence for many countries of nationally representative labor market data needed for a rigorous analysis of the consequences of displacement. The studies cited here are the only ones with nationally representative data that allow the drawing of inferences about the incidence and costs of displacement. Data that enable the contrasting of displaced workers with non-displaced workers in firms that did not lay off workers and in firms that did would be particularly useful, since US data show that the wage paths



differ for these two types of non-displaced workers. Such sophisticated data aside, it would suffice to have even nationally representative data that span several years before and after displacement to assess the costs of displacement in a way that allows policymakers to reduce these costs [4], [6].

## SUMMARY AND POLICY ADVICE

In transition and emerging economies, restructuring at the enterprise and sector level is continuing. This ongoing restructuring, as well as downturns in the business cycle, will trigger additional worker displacement. The evidence shows that displacement imposes large costs on the economy as well as on individual workers. For many displaced workers, these costs include foregone earnings due to long spells of unemployment, heightened job insecurity, reduced good health for themselves and their children, and psychological costs, including reduced happiness and increased depression. The economy loses because not all displaced workers can be rapidly reabsorbed by the firms and sectors that are expanding as a consequence of restructuring and economic reform.

The loss of firm-specific human capital is of lesser concern, since re-employed workers do not encounter wage penalties in most cases—hardly surprising, since the skills acquired in a centrally planned economy are little needed in the new market environment. However, displaced workers with obsolete human capital will need support to find new jobs. While less educated and less skilled workers are disproportionately displaced in all the countries analyzed, other demographic and job characteristics, such as age, gender, and tenure, are country-specific.

Economic policy cannot eliminate all the costs of displacement for affected workers or for the economy, but it can reduce them. Since the main cost identified was the large foregone earnings due to long spells of unemployment, especially among less skilled and less educated workers, a combination of policies is needed that provides income support, increases job-search effectiveness, and offers training for this core group of displaced workers.

Policies directed at the most adversely affected groups of displaced workers can increase equity and enhance efficiency by smoothing labor reallocation when firms and sectors restructure or are subject to the fluctuations of the business cycle.

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## Competing interests

The IZA World of Labor project is committed to the *IZA Guiding Principles of Research Integrity*. The author declares to have observed these principles.

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## REFERENCES

### Further reading

- Davis, S., and T. von Wachter. *Recessions and the Cost of Job Loss*. NBER Working Paper No. 17638, 2011.
- Hamermesh, D. "The costs of worker displacement." *The Quarterly Journal of Economics* 102:1 (1987): 51–76.

### Key references

- [1] Boeri, T., and C. Terell. "Institutional determinants of labor reallocation in transition." *Journal of Economic Perspectives* 16:1 (2002): 51–76.
- [2] Haltiwanger, J., and M. Vodopivec. "Gross worker and job flows in a transition economy: An analysis of Estonia." *Labour Economics* 9:5 (2002): 601–630.
- [3] Lehmann, H., K. Philips, and J. Wadsworth. "The incidence and cost of job loss in a transition economy: Displaced workers in Estonia, 1989 to 1999." *Journal of Comparative Economics* 33:1 (2005): 59–87.
- [4] Orazem, P. F., M. Vodopivec, and R. Wu. "Worker displacement during the transition: Experience from Slovenia." *Economics of Transition* 13:2 (2005): 311–340.
- [5] Lehmann, H., N. Pignatti, and J. Wadsworth. "The incidence and cost of job loss in the Ukrainian labor market." *Journal of Comparative Economics* 34:2 (2006): 248–271.
- [6] Lehmann, H., A. Muravyev, T. Razzolini, and A. Zaiceva. "The wage and non-wage costs of displacement in boom times: Evidence from Russia." *Journal of Comparative Economics* 41:4 (2013): 1185–1201.
- [7] Giles, J., A. Park, and F. Cai. "How has economic restructuring affected China's urban workers?" *The China Quarterly* 185 (2006): 61–95.
- [8] Betcherman, G., and N. H. Blunch. "The limited job prospects of displaced workers: Evidence from two cities in China." *Economic Change and Restructuring* 41 (2008): 187–207.
- [9] Ge, Y., and H. Lehmann. "The costs of worker displacement in urban labor markets of China." *IZA Journal of Labor & Development* 2:4 (2013). Online at: <http://www.izajold.com/content/2/1/4> DOI: 10.1186/2193-9020-2-4
- [10] Liu, H., and Z. Zhao, Z. *Parental Job Loss and Children's Health: Ten Years after the Massive Layoff of the SOEs' Workers in China*. IZA Discussion Paper No. 5846, July 2011. Online at: <http://ftp.iza.org/dp5846.pdf>

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