

# THE WAGE IMPACT OF MASS LAYOFFS

## EVIDENCE FROM THE GLOBAL FINANCIAL CRISIS

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We investigate the wage losses associated with job displacement in Australia. We compare the wage earnings trajectories for workers that lost their jobs during a mass layoff in the Global Financial Crisis to those that did not. We find that the mass layoffs during this period caused large and persistent earnings losses for displaced workers:

- average earnings are 27% (\$15,000) lower after one year and 10% (\$5,000) lower after 10 years relative to non-displaced workers;
- wage losses are mostly due to spending less time in jobs after being laid off rather than lower wages in those jobs.
- wage losses are larger than general estimates for Scandinavian countries, but smaller than the estimated losses for countries in Southern Europe.

These results highlight that long-term wage losses from job loss are as much a problem in Australia as they are overseas - and that the ability for workers to quickly reattach to the labour market is essential to limit this penalty.

Estimates of the future earnings penalty a worker faces from losing their job (or *wage scar*) - and how policy can limit this penalty - are critical in evaluating a wide range of government policies. Internationally, the estimated loss in wage earnings in the years following job loss are large and persistent - but vary significantly across countries (ranging from 10% in Denmark to 30% Spain (Bertheau et al., 2023)). Furthermore, recent work from Andrews et al. (2023) indicates that redundancy is associated with a 29% drop in earnings after four years in Australia.

In this micronote we estimate the effect of job loss on the wage earnings of private sector long-tenure employees during an economic downturn - specifically during the Global Financial Crisis (GFC). We estimate a wage scar of 16% five years after job loss - caused by individuals having difficulty maintaining attachment to the workforce.

## Wage scars from the GFC

### What was the impact of job displacement during the GFC on the average real wage earnings of displaced workers?

To answer this question we compare the wage earnings trajectories for the 6,550 long-tenure workers that lost their jobs during a mass layoff in 2008/09 to other workers (Figure 1A).<sup>1</sup> We focus on individuals who have been in the same job for at least five years (long-tenure workers) that lost their jobs alongside at least 30% of their colleagues (a mass layoff). This focus on both long-tenure workers and mass layoffs minimise the risk that the wage losses are due to the displaced individuals being less productive than their colleagues or because their jobs are temporary in nature (i.e. seasonal workers).

In the year following job loss, workers that experienced job loss in a mass layoff firm earned 27% less than other workers. After five years this scar is 16% and after 10 years it is 10%. Furthermore, these results continue to hold when we only compare workers that are similar in terms of industry and pre-displacement income (Appendix A.5.1) and when we measure income using alternative measures of income (Appendix A.6). This long-term wage scar is largely due to lower employment rates among the displaced workers (Appendix A.2.2).

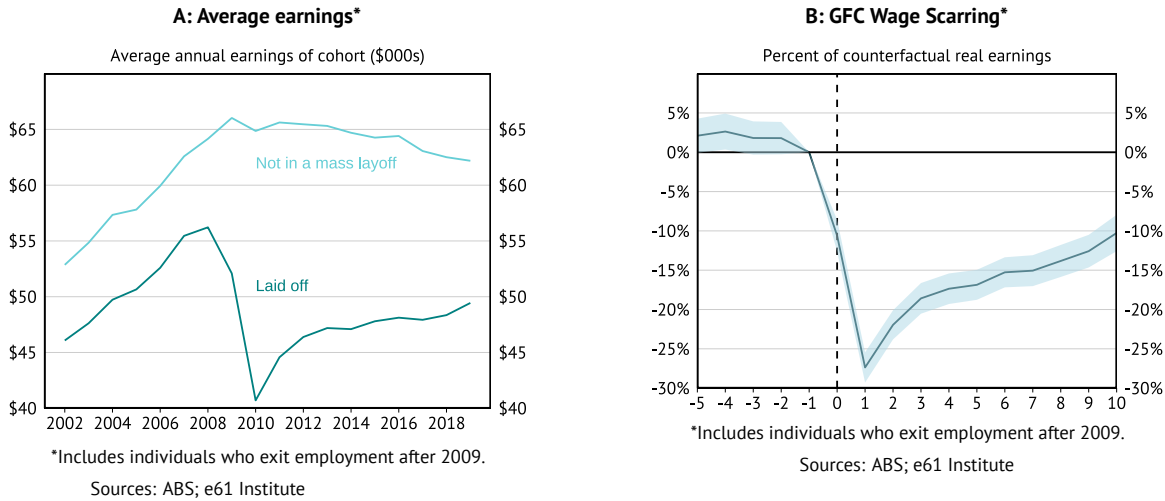
In dollar terms, the average displaced worker experiences a wage loss of \$15,000 in the first year after the mass layoff event. Their wages never recover to their pre-displacement trajectory in the following 10 years, remaining approximately \$5,000 per annum lower than otherwise.

Although not strictly comparable to Bertheau et al. (2023), this degree of scarring is greater than in Scandinavian countries but lower than in Southern Europe.<sup>2</sup>

<sup>1</sup> Following Bertheau et al. (2023) we do not restrict individuals to remain in employment in future years. How this differs from other common assumptions in the literature is discussed further in Appendix A.4

<sup>2</sup> It is not clear whether a comparable study would find larger or smaller scarring from job loss in Australia. Our estimates will be lower relative to this literature due to the fact that individuals who experience mass layoffs in the future can show up in the control group. However, they will be higher as we have estimated the effect for a downturn - a time period when wage scarring is normally found to be higher.

**Figure 1: GFC Wage scars**



## Re-employment and the magnitude of scarring

There are two reasons why an individual may have lower wage earnings after they've lost a job - they could earn less in their new job or they may spend less time employed. If displacement lowers long-term earnings in new jobs, there should be a persistent scar for workers that permanently return to work. We investigate this by looking at the wage loss for individuals who are re-employed and remain in a job.<sup>3</sup>

The wage scar disappears within 4 years for displaced workers that return to paid work within a year (and remain employed thereafter).<sup>4</sup> Furthermore, for this group we observe a smaller initial wage scar - wages are 14% lower in the year after job loss relative to other workers.

If instead we look at individuals that move in and out of work during the first five years<sup>5</sup>, our estimate of wage scarring is larger and more persistent. Wage earnings decline 18% in the first year, and only recover after 10 years to the same level as other individuals who were persistently employed.

Relative to those quickly re-employed, larger scarring in the first five years after a mass layoff is in part due to individuals who are not employed being included in the average income measure. However, even 9 years after the event - when everyone is employed - this group of individuals have wage earning scars that are statistically larger than zero.

This indicates that the average Australian worker that is re-employed quickly experiences a large but temporary wage loss and soon recover to their non-displacement earnings trajectory. These results highlight the relative importance of a fast return to stable work after the shock of a mass layoff.

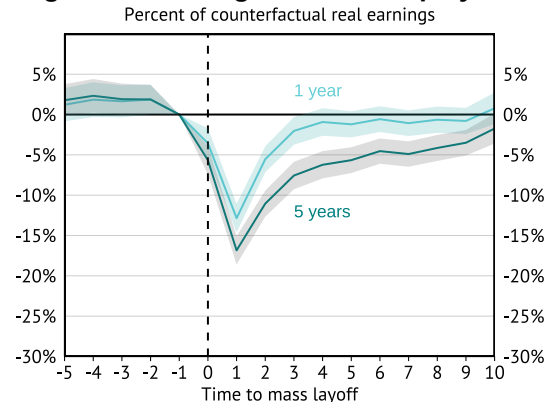
However, knowing the right policies to limit the cost of job loss for workers involves understanding the mechanisms behind the wage scar. In future work we will investigate these scars further in two pieces of work - one that explores *why there are wage scars from mass layoffs* (i.e. loss of skills or finding a worse job), and another that shows *who is most affected by wage scarring*. Together these pieces will help inform policy makers about choices they could make to mitigate such wage scarring in the future.

<sup>3</sup> Treatment of re-employment in this literature is discussed in Appendix A.4.

<sup>4</sup> The employment assumption is until FY2019, so 10 years from the event.

<sup>5</sup> In this situation we impose that the treated individual will be re-employed from FY2015 to FY2019

**Figure 2: Scarring for the re-employed\***



# References

- Andrews, D., Deutscher, N., Hambur, J., & Hansell, D. (2020). The career effects of labour market conditions at entry. *Australian Treasury Working Paper Series*, 2020(1).
- Andrews, D., Dwyer, E., & Vass, L. (2023). At the coalface: What happens to workers displaced by decarbonisation. *e61 Micro Note*, 2023(11).
- Ashenfelter, O., & Card, D. (1985). Using the longitudinal structure of earnings to estimate the effect of training programs. *Review of Economic Statistics*, 67(4), 648–660.
- Audoly, R., De Pace, F., & Fella, G. (2022). Job Ladder, Human Capital, and the Cost of Job Loss. *Federal Reserve Bank of New York Staff Reports*, 2022(1043).
- Bertheau, A., Acabbi, E. M., Barcelo, C., Gulyas, A., Lombardi, S., & Saggio, R. (2023). The Unequal Consequences of Job Loss across Countries. *American Economic Review: Insights*, 5(3), 393–408.
- Borland, J. (2020). Scarring effects: A review of Australian and international literature. *Australian Journal of Labour Economics*, 23(2), 173–187.
- Callaway, B., & Karami, S. (2023). Treatment effects in interactive fixed effects models with a small number of time periods. *Journal of Econometrics*, 233(1), 184–208.
- Chen, J., & Roth, J. (2023). Logs with zeros? some problems and solutions [Accessed: 2023-11-13]. [https://www.jonathandroth.com/assets/files/LogUniqueHODO\\_Draft.pdf](https://www.jonathandroth.com/assets/files/LogUniqueHODO_Draft.pdf)
- Estefania-Flores, J., Furceri, D., Gonzalez-Dominguez, P., Kothari, S., & Tawk, N. (2022). Scarring and corporate debt. *IMF Working Papers*, 2022(211). <https://doi.org/10.5089/9798400225703.001>
- Fagereng, A., Onshuus, H., & Torstensen, K. (2023). The Consumption Expenditure Response to Unemployment: Evidence from Norwegian Households [Accessed: 2023-11-17]. Online. [https://drive.google.com/file/d/1yaioP-Xg3OhcDQuS\\_9jD8RdIMQ-9GEMK/view](https://drive.google.com/file/d/1yaioP-Xg3OhcDQuS_9jD8RdIMQ-9GEMK/view)
- Guiso, L., Sapienza, P., & Zingales, L. (2018). Time varying risk aversion. *Journal of Financial Economics*, 128(3), 403–421.
- Huckfeldt, C. (2022). Understanding the scarring effect of recessions. *American Economic Review*, 112(4), 1273–1310.
- Jacobson, L., LaLonde, R., & Sullivan, D. (1993). Earnings Losses of Displaced Workers. *The American Economic Review*, 83(4), 685–709.
- Jarosch, G. (2023). Searching for job security and the consequences of job loss. *Econometrica*, 91(3), 903–942.
- Krolikowski, P. (2018). Choosing a Control Group for Displaced Workers. *ILR Review*, 71(5), 1232–1254.
- Lachowska, M., Mas, A., & Woodbury, S. A. (2020). Sources of displaced workers' long-term earnings losses. *American Economic Review*, 110(10), 3231–66.
- Lancaster, D. (2021). The Financial Cost of Job Loss in Australia. *RBA Bulletin*, 2021.
- Malmendier, U., & Nagel, S. (2011). Depression Babies: Do Macroeconomic Experiences affect Risk Taking? *The Quarterly Journal of Economics*, 126(1), 373–416. <http://www.jstor.org/stable/23015670>
- Nagypal, E. (2007). Learning by Doing vs Learning About Match Quality: Can We Tell Them Apart? *Review of Economic Studies*, 74, 537–566.
- Rose, E. K., & Shem-Tov, Y. (2023). How Replaceable Is a Low-Wage Job? *Becker Friedman Institute*.
- Rud, J.-P., Simmons, M., Toews, G., & Aragon, F. (2022). Job displacement costs of phasing out coal. *IFS Working Paper*, 22(37).
- Schmieder, J., von Wachter, T., & Jörg, H. (2023). The Costs of Job Displacement over the Business Cycle and Its Sources: Evidence from Germany. *American Economic Review*, 113(5), 1208–1254.
- Sun, L., & Abraham, S. (2021). Estimating dynamic treatment effects in event studies with heterogenous treatment effects. *Journal of Econometrics*, 225(2), 175–199.