

# Disasters and economic resilience: Income effects of the Black Saturday Bushfires on disaster-hit individuals

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We explore the impact of the most destructive bushfire disaster ever to hit Australia on the disaster-hit individuals' economic resilience. By analysing Australian 2006 and 2011 Census data, we determine whether their income levels were able to recover post disaster, considering demographic factors and sectors of employment.

## RESEARCH QUESTIONS

An individual's income stream represents an important measure of their economic resilience to external shocks. Our research seeks to understand:

- What is the impact of the Black Saturday Bushfires on individuals' income?
- What are the vulnerable groups that are particularly hit by the disaster according to the individuals' demographic, socio-economic backgrounds and employment sectors?

## RESEARCH CONTRIBUTION

The research is a pioneering effort that combines confidential ABS Longitudinal Census data on disaster affected areas, advanced disaster mapping and empirical economic modelling to provide policy makers with a unique evidence-based estimation of the economic impacts of one of the worst recent natural disasters in Australia. By focusing on individuals, it can help design post-disaster recovery interventions that direct funding to individuals and communities most in need of assistance.

### End-user research utilisation statement

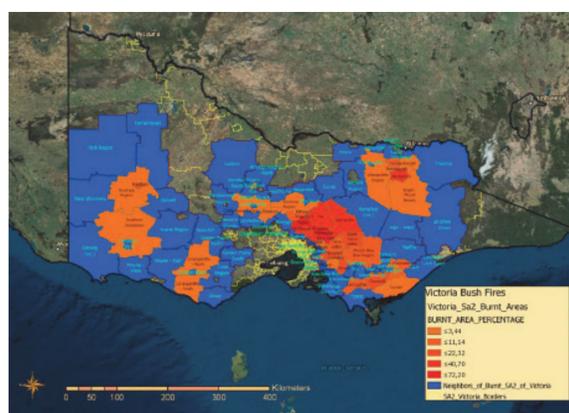
"This project has illustrated the potential to use the national accounts and ABS to determine a richer understanding of how disasters affect sectors of the economy, with potential utility to better plan and target relief and recovery programs. The analysis is one of the first examples revealing which parts of the economy are impacted, and which ones are stimulated. It is unique to the CRC, based on the fundamental Australian population and economics data." —Ed Pikusa, Lead end user

## METHODOLOGY

### Advanced georeferencing

Using advanced mapping and end-user expertise, we construct two distinct areas: the bushfire-affected areas (affected group) and the neighbouring unaffected areas, which are chosen as they resemble the first group economically and demographically thus providing an ideal comparator group.

Figure 1: SA2 share of burnt area and neighbouring SA2s



### Empirical economic modelling

Our model identifies the difference between the incomes of bushfire-hit groups before and after the disaster, and those in comparator groups.

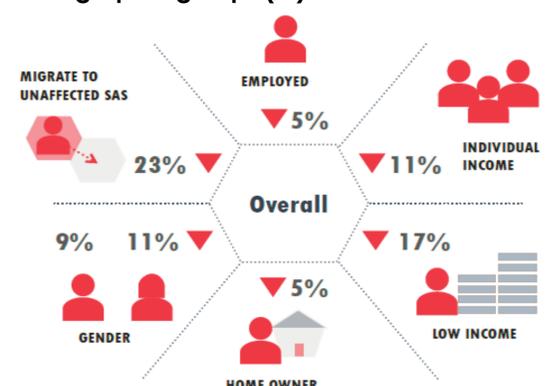
By including a disaster severity measure (share of burnt area), we also consider the effect of the magnitude of this shock on the bushfire-hit groups.

The vulnerability focus also considers possible differences in the disaster's effect on different subsets within affected groups (e.g. gender, employment).

## PRELIMINARY FINDINGS

Post-disaster, we found significant declines in the income of individuals residing in bushfire-hit areas by 11%. Low income earners were the worst hit among income groupings, while those who migrated out to unaffected areas were severely affected.

Figure 2: Impact on individual income by demographic groups (%)



Of the 19 economic sectors, six were significantly and mostly negatively affected by the bushfires. Incomes of individuals employed in retail showed the most decline (-15%). Incomes in the rental and real estate sector were the only positively affected (10.5%).

## KEY MESSAGES

- The Black Saturday Bushfires had a significant negative effect on individual income (average of -11%) in disaster-hit areas.
- In the short term, the income of some groups (low income, those employed in retail sector or migrate out of disaster zone) are more vulnerable to disasters
- These vulnerable groups may need additional assistance to increase their economic resilience.