# Discussion of "Why Do Borrowers Default on Mortgages? A New Method For Causal Attribution"

Peter Ganong and Pascal Noel

Amir Kermani (Berkeley & NBER)

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# Main question: why do borrowers default on mortgages?

- An old and fundamental question: Are defaults strategic or liquidity/life event driven? (won't pay or can't pay?)
- This paper's solution: A new method for Causal Attribution:
  - Instead of looking at the impact of change in income (or other life-events) on defaults let's focus on change in income conditional on default for the group with strategic motive vs. the group without strategic motive.
- How many percent of the defaults of underwater households is b/c of life events?

$$\alpha_{\textit{life event}-\textit{underwater}} = \frac{E(\Delta Inc^{UnderwaterDefaulter}) - E(\Delta Inc^{AllUnderwater})}{E(\Delta Inc^{AbovewaterDefaulter}) - E(\Delta Inc^{AllUnderwater})}$$

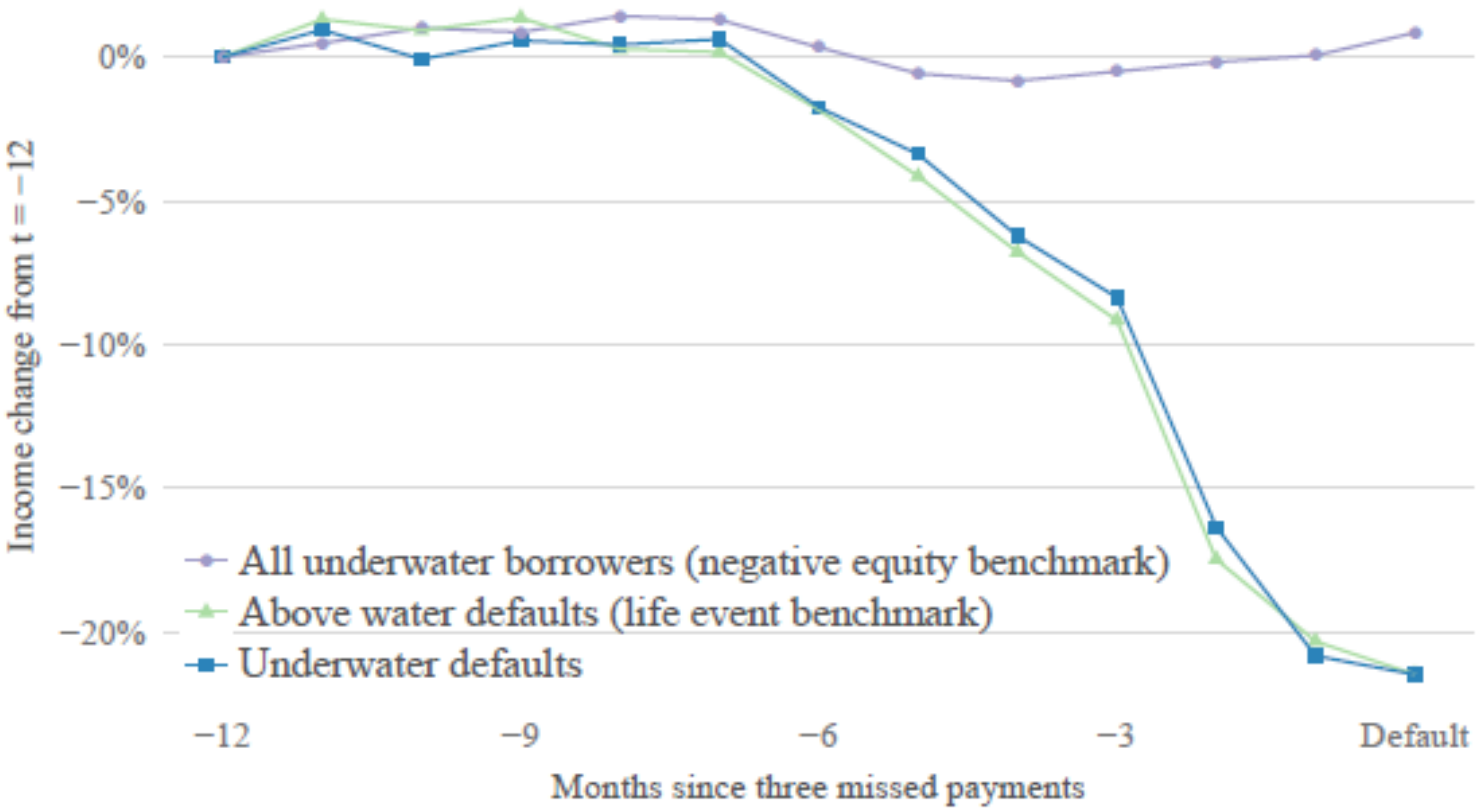
  - Note that there is nothing related to the change in income of above water borrowers who do not default in the formula!
- Why a new method: mainly to solve the attenuation bias due to *life events measurement problems.*

# Main finding: almost no pure strategic default

- A very surprising finding:

Figure 1: Income in Year Prior to Mortgage Default

(a) Monthly Evolution



# Comment I: is there a measurement problem/attenuation bias with life events?

| | Mortage Delinquency | |
|---|---|---|
| | OLS | IV(unemployment shock) |
| Income Change | -0.031*** | -0.416*** |
| | (0.006) | (0.089) |
| LTV | 0.096*** | 0.126*** |
| | (0.009) | (0.011) |
| Observations | 14,068 | 10,335 |
| R-squared | 0.029 | -0.419 |

Standard errors cluster at state-year fixed effect

- Going from OLS to IV: associated with a change of more than 10 fold on the impact of income change on default.
  - Some of this is related to ATE vs. LATE (i.e. higher sensitivity to large negative shocks).
  - See Gerardi et al. (RFS 2018)

# Comment II: what we already know, what we need to know

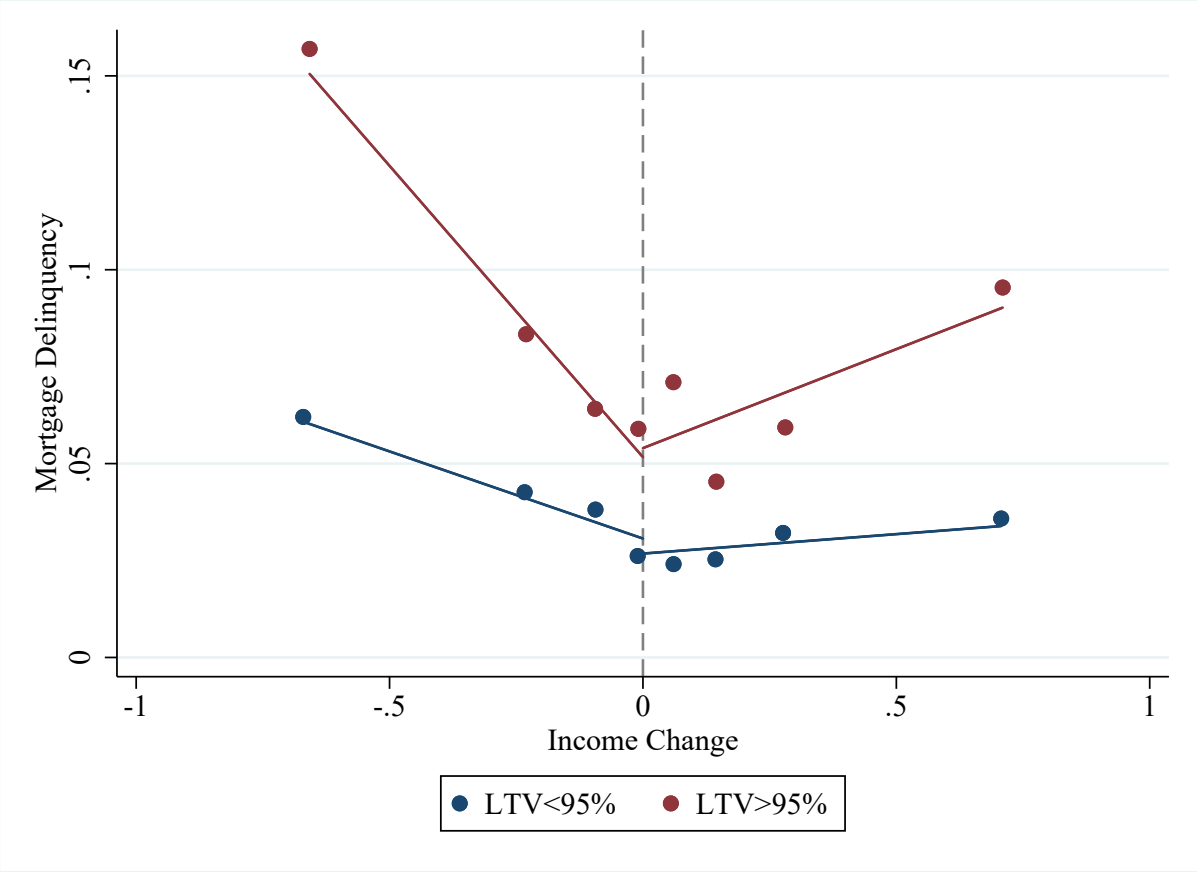
What we already know?

- Ganong-Noel (AER 2020): Using RD design based on variations in HAMP:
  - Reduction in outstanding debt without reduction in monthly payments has ZERO impact on defaults.
  - Reduction in monthly payments is very effective.
- Similar results on the impact of monthly payments on mortgage delinquencies in Gupta (JF 2020), Fuster and Willen (AEJ EP 2017), Di Maggio et al (AER 2017)
- These results already suggest that negative equity by itself may not be the most important reason for defaults whereas cash-flow shocks can play a significant role.

What we need to know more?

- What cause higher defaults for high LTV people?
- Sensitivity of defaults to income(/life events) as a function of LTV.

# Comment II (cntd): what we need to know




- Data suggest significantly higher default rates for high LTV borrowers (including those w/o a "negative income shock")
- Significantly higher sensitivity of defaults to income changes for high LTV borrowers.

# Comment III: life events as a black box?

- Both in JPMCI data and in PSID data many defaults happens despite the household experiencing positive or no change in their income.
  - This seems to be more than just measurement error.
- Now let assume there is a random (unobservable) life event $z$ and let assume that sensitivity of defaults to $z$ is higher for high LTV people.
  - none of these assumptions violates the main assumptions of the paper.
- This will result in higher "non-strategic" defaults for high LTV people.
- Even in this setting, LTV reductions are still useful tool in reducing defaults.
  - Perhaps that is the only thing that matters from the point of view of policy.
- Bottom line: I am not sure if the exercise has a clear policy implication unless we define clearly what are life events and we measure the sensitivity of defaults to each of these events.

# Comment IV: Plausibility of the assumptions

- A1: $Y(0,0) = 0$. This is the same as having life event as a black box.
- A2: conditional exogeneity (i.e. ruling out a third factor that causes both a life event and mortgage default).
  - Number of foreclosures in the neighborhood? banks loan supply?
- A3: $T(T^*, G, Y) = T(T^*)$: "An implication of Assumption 3 is that when a life event does occur, above and underwater borrowers have the same average decline in income."
  - this requires life event to be similar not only for those who default but also for those who did not default.
  - but we cannot test the plausibility of the assumption for non-defaulters since we don't observe (/define) life events.
  - life events are supposed to be more than income declines. So we cannot test this for defaulters either.
  - Differential access to borrowing for above/below water borrowers is a strong case for the violation of this assumption.
- (A5): Life event is a binary variable.
  - without this assumption we are almost back to reverse regression.

# Conclusion

- Very interesting and surprising fact on "similar decline of income for above water and below water defaulters".
- Reassures the previous work of the authors and previous works in the literature that "Can't Pay" is more important than "Won't Pay".
- Couldn't agree more that defaults are associated with significant costs for households.
  - Perhaps section 6 can play a more prominent role in the paper.
  - and couldn't agree more that high frequency income/cash flow data helps a lot in quantifying the cost associated with defaults.
- I am not 100% sure about:
  - the usefulness of defining life event as a black box that causes an above water mortgagor to default.
  - plausibility of the assumptions that are required for the causal attribution in this setting.