

## Aggregate effects and measuring regional dynamics

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When a state experiences a labor demand shock, how does it recover? Do workers out-migrate to states with relatively higher wages, or do firms create jobs to absorb the unemployed and take advantage of low wages? Labor demand shocks can be both location-specific (i.e., independent of shocks in all other geographic regions) or aggregate in nature. If different states exhibit different sensitivities to aggregate events, then aggregate shocks will also create differences between state-level labor markets to which firms and workers may respond. In this case, it becomes imperative to properly model common shocks when measuring regional dynamics: First, a regional recovery may be brought about by a sequence of aggregate shocks that would otherwise be attributed to migration; and second, the recovery from aggregate shocks may be vastly different to the recovery from a location-specific shock.

In this paper, we address these concerns as they relate to the measurement of regional labor market dynamics. In order to do so, we present a model that permits us to decompose the variation in local labor markets into a common component, reflecting evolutions in response to aggregate shocks, and an idiosyncratic component, reflecting evolutions in response to location-specific shocks. We then apply the conventional VAR toolkit to the separate components in order to describe the recovery process. We find that differences between the responses to the two different types of shock are stark. Recovery from an idiosyncratic shock occurs within 5-6 years, with job creation accounting for about 25% of the recovery, indicating that firm migration plays a more important role than previously thought. Conversely, the recovery from a common shock is highly protracted, with employment reaching its long-run level after no less than ten years. We also find that location-specific labor demand shocks exhibit far more variance than the aggregate labor demand shocks, meaning that while short-run variation in local labor market conditions is largely driven by location-specific events, much of the long-term variation in state-level labor markets is driven by aggregate events.