Text 1 Supplement

Interrupted time series analysis ("ITSA") is appropriate for situations that satisfy three requirements: sequentially-measured data is available over an extended timeframe; the intervention was a one-time event; and the outcome measure was changing before the intervention (Bernal et al. 2017; Zhang et al. 2011). Each high-expenditure state's data satisfy all three criteria. The Linden model's functional form is

$$Y_t = \beta_0 + \beta_1 T_t + \beta_2 X_t + \beta_3 T_t X_t + Z_t + \varepsilon_t$$

where Y_t denotes the outcome variable at time t; β_0 denotes the outcome variable's initial value at the beginning of the pre-intervention phase; β_1 denotes the outcome variable's change during the pre-intervention phase; T_t denotes the length of time elapsed since the beginning of the pre-intervention phase; β_2 denotes the outcome variable's change immediately following the intervention (*i.e.*, at the beginning of the post-intervention phase); X_t is a phase control variable (X_t = 0 for all t prior to intervention and 1 following intervention); β_3 denotes the difference in the outcome variable's pre- and post-intervention changes; Z_t denotes the vector of explanatory and control variables; and ε_t denotes error. All *t* are equally-spaced units, measured in years.

By incorporating explanatory and control variables of theoretical importance (Z), the model reduces the internal validity threat that would otherwise stem from omitted variable bias (Linden 2017; see also discussion in Kontopantelis 2015). In fact, the inclusion of those variables facilitates a detailed evaluation of MPI programs. If one of the variables in Z (say, *x*) captures a time-variant program facet (*e.g.*, tax expenditure changes), then the model decomposes program impact into two dimensions: the coefficient for *x* shows the effect of tax expenditures on employment, and β_2 and β_3 show the impact of other program features.

References:

Bernal, James Lopez, Steven Cummins, and Antonio Gasparrini. 2017. "Interrupted Time Series Regression for the Evaluation of Public Health Interventions: A Tutorial." International Journal of Epidemiology 46(1): 348-355.

Kontopantelis, Evangelos. 2015. "Regression Based Quasi-Experimental Approach when Randonisation is Not an Option: Interrupted Time Series Analysis." BMJ 350:h2750.

Linden, Ariel. 2017. "Challenges to Validity in Single-group Interrupted Time Series Analysis." Journal of Evaluation in Clinical Practice 23(2): 413-418.

Zhang, Fang, Anita K. Wagner, and Dennis Ross-Degnan. 2011. "Simulation-Based Power Calculation for Designing Interrupted Time Series Analyses of Health Policy Interventions." Journal of Clinical Epidemiology 64(11): 1252-1261.

Text 2 Supplement

This study's outcome variable cannot evaluate a different objective some MPI program supporters argue is just as important as job creation: diversifying the existing workforce. That objective can be assessed with relative employment measures, such as motion picture employment as a share of a state's overall private sector labor force (or the change therein), or a state's share of national motion picture employment (or the change therein). To determine if tax expenditures had any effect on these measures, a revised model for each state was estimated that retained all explanatory and control variables but used one of four different outcome variables: annual motion picture employment as a share of the state's private sector employment; the annual change in that share; the state's annual percentage share of national motion picture employment; and the annual change in that share. Table 3 Supplement summarized results, which point toward the same conclusion as those reported in Table 3 of the primary manuscript. By and large, tax incentives that target the motion picture industry had no statistically-significant impact on employment in that industry, and when incentives did have a statistically-significant effect, the relationship was inelastic to tax expenditures. For example, a one percentage-point increase in tax expenditures in Massachusetts was associated with just a 0.145 percentage-point increase in motion picture employment as a share of the state's private sector labor force and a 0.139 percentage-point increase in the state's share of national motion picture employment. Across the models reported in Table 3 and Table S3, that finding is illustrated for five different outcome measures in the states that have invested the most in MPI programs.

Text 3 Supplement

Although the motion picture industry can quickly respond to corporate tax incentives and other MPI program supports, employment effects could take longer than one year to materialize. If so, the coefficients reported in Table 3 of the primary manuscript would reflect downward bias because one year in which no or very little employment change occurred (i.e., the first year of tax incentive availability) is included in the post-intervention phase. To determine whether those results were sensitive to intervention timing, each model was estimated using revised phases that transferred one year from the post-intervention phase to the pre-intervention phase. This establishes the intervention as occurring at least one full year after tax incentives first became available. While coefficient values changed slightly, the substantive findings did not. Full results are reported in Table 4 Supplement.

Text 4 Supplement

Because the models reported in Table 3 of the primary manuscript included separate measures for program implementation and associated tax expenditures, their results may reflect over-specification bias. To resolve that issue, each model was estimated without the tax expenditure change variable. These revised models therefore control only for the presence of an MPI program without regard to any changes in program tax expenditures. The significance of some coefficients for other states' tax expenditures differ from the models reported in Table 3 but the substantive findings did not change appreciably. Full results are reported in Table 5 Supplement.