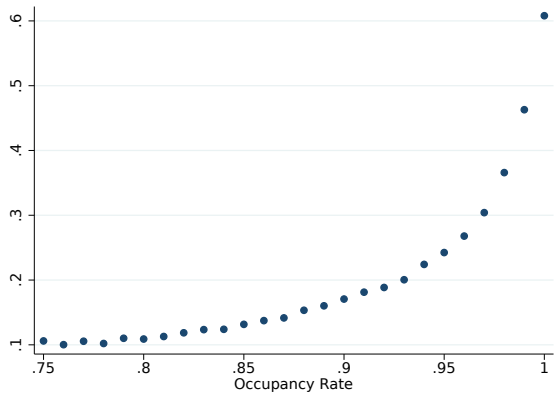


Notes: *This figure plots the average weekly refill probability of an empty bed against the nursing home's occupancy rate, see equation (3) in Section 6.4 in the main text for details.*

Figure 14: Weekly Refill Probability by Occupancy Rate

in Ohio's bordering counties by 4.3 percentage points. The negative coefficient on the New Jersey indicator suggests that this difference is more pronounced at the Pennsylvania-New Jersey border. The IV estimate for δ in regression (18) equals -0.009 (S.E. 0.006). This estimate suggests that the discharge rate falls by 0.9 percentage points as seniors transition into Medicaid. This difference is similar to the average difference in discharge profiles presented in Figure 3. However, due to the additional variation introduced by the IV, the point estimate is not significant at the 10% level with a t-statistic of 1.5. Nevertheless, this result supports the conclusion that differences in discharge rates are partly driven by patient incentives.

D.9 Provider Incentives

Based on the discussion in Section 6.4 in the main text, Figure 14 plots the average weekly refill probability of an empty bed on the vertical axis against the weekly occupancy rate on the horizontal axis. The figure documents a highly convex relationship highlighting an increasing option value of an empty bed at occupancies exceeding 90%. This relationship further supports the conclusion that the increasing Medicaid discharge rates at high occupancy rates are driven by provider incentives.

As an additional test of financial incentives, we compare the discharge rates across payer types between facilities that differ in how much they benefit from replacing a Medicaid beneficiary with a private payer, which is a function of the difference between the daily rate that private residents pay and the average Medicaid reimbursement rate. Specifically, we calculate the average percentage difference between the two prices on the facility-year level using information on private and Medicaid rates from Pennsylvania and California (see Sec-

tion 4 for details). Then we designate the quarter of nursing homes with the highest relative differences in daily rates as the high-incentive group, and the bottom quarter constitutes the low-incentive group. We expect that the relationship between occupancy and discharge rates of Medicaid residents is more pronounced in the high incentive group. The differences between private and Medicaid rates in the high-incentive group are larger than 28%, and they are below 6% in the low-incentive group. Since nursing homes set their private rates freely, there is a possible concern that they may be correlated with unobserved resident characteristics, leading to an endogenous sample split. However, it is unlikely that SNFs frequently change their prices due to changes in occupancy or unobservables, and we control for facility-year effects.

Using this sample split, Figure 15 displays estimated discharges rates by payer type and occupancy for high-incentive nursing homes on the left and low-incentive facilities on the right. Compared to the results for the whole sample in Figure 3, we find a steeper relationship between occupancy and discharge rates of Medicaid residents for the high-incentive group (left plots in Figure 15) and a flatter relationship in the low-incentive group (right plots). The baseline discharge rates below occupancy levels of 80% are similar in the two subsamples. Hence, we find clear evidence that SNFs who have more to gain from discharging Medicaid residents are more likely to do so at high occupancy rates.

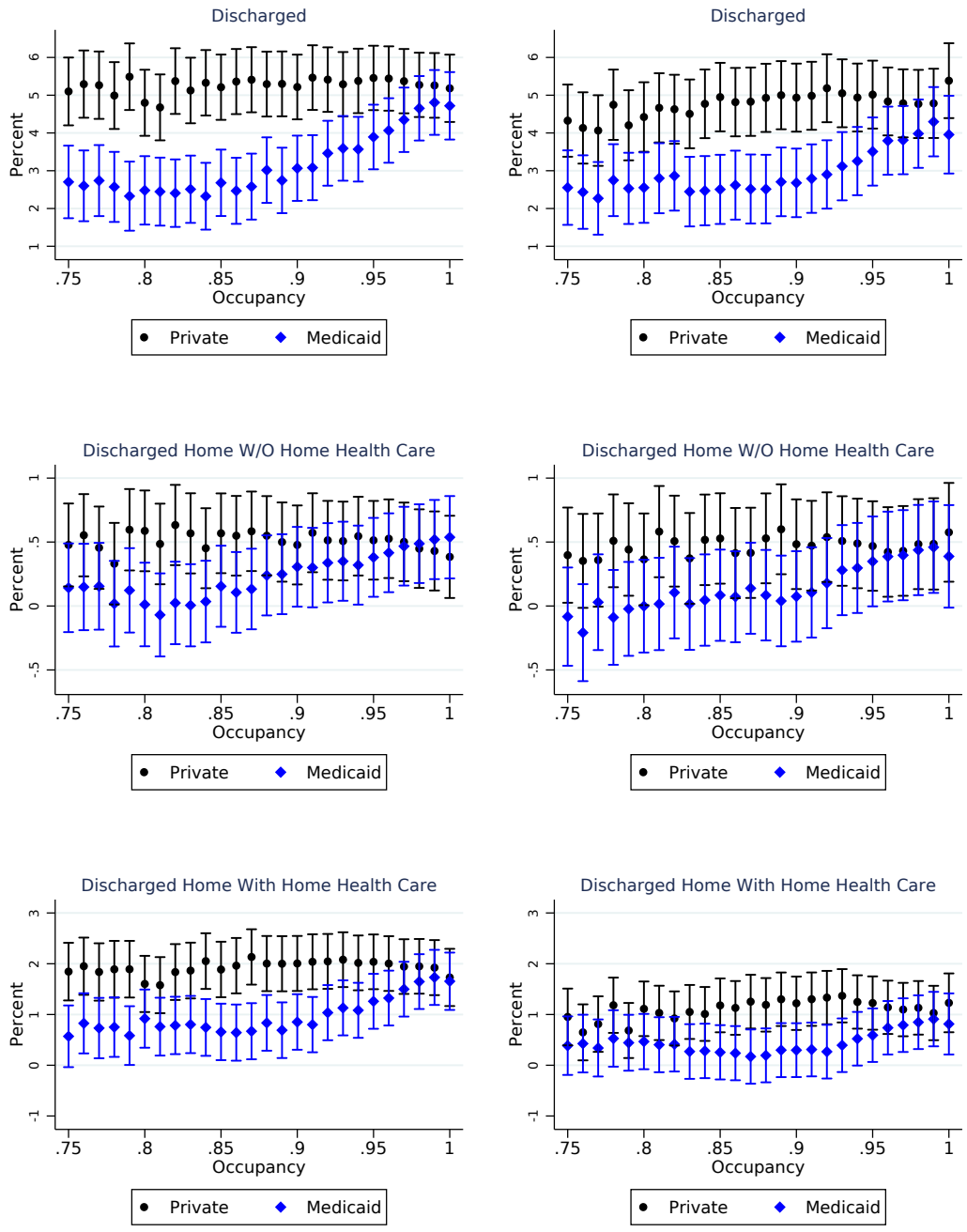
D.10 Additional Health Benefits From Longer Nursing Home Stays

In addition to mortality and hospitalizations, we consider six health outcomes from residents' last health assessments before discharge: the CMI, ADL limitations, and indicators for clinical complexity, depression, impaired cognition, and behavioral problems.[28] For all health outcomes, a higher value implies that the resident is less healthy. If longer nursing home stays of Medicaid residents improve their health, it should be reflected in these measures.[29] In particular, we would expect to see a level difference between private and Medicaid residents with the latter being healthier. Moreover, we would expect that the health outcomes of Medicaid residents start to get relatively worth above 90% occupancy since their discharge rates increase above that threshold.

Overall, Figure 16 does not provide any evidence for health benefits of longer nursing home stays. First, Medicaid residents have worse health outcomes for all but one measure (behavioral problems) across all occupancy rates than private residents. Note that this

[28] In Figure 10 we use the same outcomes to analyze health-related selection. However, in those regression, we use current health outcomes whereas we use health at or close to discharge in the present analysis.

[29] Health improvements among SNF residents are relative. We do not expect to see absolute improvements in health status, but we rather interpret the absence of worsening health status as evidence for "health benefits" of longer nursing home stays.



Notes: *See notes for Figure 3. This figure compares overall discharges (first row), home discharges without home health care (middle row), home discharges with home health care (bottom row) between resident groups. In the left figures, we focus on SNFs with high incentives (large differences between private and Medicaid rates). In the right graphs we present the evidence for SNFs with low incentives (small differences between private and Medicaid rates). The vertical bars indicate 90% confidence intervals.*

Figure 15: Discharge Rates by Nursing Home Incentives (California and Pennsylvania) – High Incentives SNFs on the Left and Low Incentive SNFs on the Right

combination discharge probabilities by occupancy rate and payer type, see Figure 5, specify the number of discharged residents.

Finally, we calibrate net changes in the number of residents in the external wing to match the overall change in the occupancy rate as a result of shock ϵ^s_{occ}. For instance, suppose we started out with 90 occupied beds at time s in the entire nursing home and that ϵ^s_{occ} implied a net increase to 92 occupied beds by $s+1$. Furthermore, suppose that the remaining shocks implied that the number of occupied bed in the focal wing of interest decreased from 38 to 37. Then we would assume a net increase of $\Delta^s_{ext} = 3$ seniors in the external wing to reconcile to overall increase from 90 to 92. This procedure generates a sequence of resident changes in the external wing $\{\Delta^s_{ext}\}$ for $s \in 1, ..., S$.

In the counterfactual analysis, we hold the sequence of shocks to the focal wing and resident changes in the external wing, $\epsilon^s = \left\{\epsilon^s_{arr}, \epsilon^s_{\phi}, \epsilon^s_{\rho}, \epsilon^s_{dis}, \Delta^s_{ext}\right\}$ for $s \in 1, ..., S$, fixed. Importantly, we can now ignore the sequence of occupancy shocks, ϵ^s_{occ}. Of course, absent any policy changes, we are able to replicate the overall occupancy rate changes by inverting the strategy discussed in the previous paragraph that identified the sequence Δ^s_{ext}. In the counterfactual analysis, we document changes in the discharge policies, see Figure 5, which we use to simulated a new sequence of overall occupancy rates. We summarize the mean occupancy rate over the simulation draws in the third row of Table 3.