Veteran Migration Responses to Tax Incentives

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**Motivation**

Military retirees often receive pensions, which are taxed as income in some states. Iowa’s recent adoption of a pension tax exemption (ostensibly to attract veterans) motivated my investigation into the nationwide effects of these policies where they are implemented.

**Methodology**

A panel linear model combines elements of cross-sectional data with time-series analysis. Data at the ZIP3/state level constitute cross-sectional data, while the various years constitute a time element.

- Use R package “plm” to create a panel linear model with regressors including tax code, number of existing veterans in each community, climate, tax environment of neighboring states, economic conditions, and presence of military bases.
- Assess R² and significance of variables to use the PLM to tell a story.

It is important to recognize that R² in a cross-sectional analysis is typically lower than R² in a standard linear model due to heterogeneity across different panel members. Hence, the significance of the predictors is highly important, as R² is less informative the more panel members there are.

**Tax Climate in 2011**

[Map showing tax climate in 2011]

**Objective**

To determine whether a presence/lack of a tax exemption in a given state affects the migration patterns of military retirees.

*i.e.*, To what extent do veterans value tax climate as a migration incentive?

**Data**

Panel data for 7-year period at a 3-digit ZIP code geography, rolled up to the state level.

- Population characteristics (2011-2017 ACS)
- Economic characteristics (BLS)
- Climate (CDC)
- Veteran populations (DoD)
- State-level Ideology Measures (R.C. Fording)

**Summary of Results**

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>State Level</th>
<th>ZIP3 Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partial Pension Tax Exemption</td>
<td>0.260** (0.119)</td>
<td>0.399*** (0.138)</td>
</tr>
<tr>
<td>Full Pension Tax Exemption</td>
<td>0.260** (0.111)</td>
<td>0.427*** (0.120)</td>
</tr>
<tr>
<td>Number of Veterans</td>
<td>0.000*** (0.000)</td>
<td>0.00001*** (0.000001)</td>
</tr>
<tr>
<td>Winter Temp</td>
<td>-0.017*** (0.006)</td>
<td>-0.038*** (0.006)</td>
</tr>
<tr>
<td>% of Neighbors with Exemption</td>
<td>-0.332 (0.283)</td>
<td>-0.090 (0.272)</td>
</tr>
<tr>
<td>State-Level Ideology Measure</td>
<td>-0.021*** (0.002)</td>
<td>-0.026*** (0.003)</td>
</tr>
<tr>
<td>Weighted Avg. Unemp.</td>
<td>-0.080*** (0.023)</td>
<td>-0.009 (0.027)</td>
</tr>
<tr>
<td>Weighted Avg. Med. HH Inc.</td>
<td>-0.000 (0.000)</td>
<td>-0.000 (0.000)</td>
</tr>
<tr>
<td>Count of Military Bases</td>
<td>-0.014 (0.024)</td>
<td>0.063** (0.027)</td>
</tr>
<tr>
<td>Observations</td>
<td>288</td>
<td>6,130</td>
</tr>
<tr>
<td>R²</td>
<td>0.412</td>
<td>0.054</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.413</td>
<td>0.061</td>
</tr>
</tbody>
</table>

**Note:** *p<0.1; **p<0.05; ***p<0.01

**Conclusions**

Most importantly, the regressions indicate a positive association between a state having a military-pension tax break and experiencing veteran inflow. The model suggests a negative relationship between ideology measure (where higher is more liberal) and veteran movements, suggesting a preference for conservative political climates. The regression also indicates an inverse association between unemployment rates and veteran inflows.

The R² of the state-level regression is high, especially for a panel linear model. This does not warrant causal conclusions, only correlational.

**Limitations**

This approach does not attempt to capture the before-after effect of adopting a policy. To do this, a better approach might be to use Differences-in-Differences Method or Synthetic Control Modeling. However, both options present difficulties in implementation due to the small size of the control and treatment groups.

**References**

- Schneider, M. (2019). \*Veteran Migration Responses to Tax Incentives.\* Nebraska University, Lincoln.

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