Comments on: "Rebuilding Ukraine's Cities: Maximizing Benefits and Minimizing Costs" by Glaeser, Kirchberger and Parkhomenko

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Planner's problem I

$$
\begin{aligned}
i &= 1, ..., 22 \text{ oblasts and Kiev} \\
p_i &\sim \text{ housing price (depends on infrastructure)} \\
w_i &\sim \text{wage (depends on infrastructure)} \\
N_i = N_i^M + N_i^C &\sim \text{pop, military and civilian} \\
\tau_i &\sim \text{taxes and transfers} \\
v_i(w_i, p_i, \tau_i)\psi_{in}\phi_{U_n} &\sim \text{utility of person from } i \text{ in } n
\end{aligned}
$$

Maximize welfare subject to security and budget.

$$
\begin{aligned}
&max E\left[v_i(w_i, p_i, \tau_i)\psi_{in}\phi_{U_n}\right] \\
&s.t. (N_1^M, ..., N_{22}^M) \text{ satisfies security} \\
&\sum_{i=1}^{22} \tau_i + \text{Infrastructure} + \text{Aid} = 0
\end{aligned}
$$

Planner's problem II

- This problem is similar enough to Fajglebaum and Gaubert (QJE 2020) that it can probably be solved with the same techniques. Transfers matter.
- The solution to the first best problem probably involves taxing Kiev to pay for Eastern fortresses. Knowing how elastic is the population of Kiev to its tax burden is important. Knowing the shadow value of Aid would also be useful.

Planner's problem III

- The problem GKS help us solve is

$$max E\left[v_i(w_i, p_i, \tau_i)\psi_{in}\phi_{U_n}\right])$$
$$s.t.(N_1^M, ..., N_{22}^M) \text{satisfies security}$$
$$\sum_{i=1}^{22} \tau_i + \text{Infrastructure} + \text{Aid} = 0$$

  This is, the first best problem without transfers or security constraint. They deal with infrastructure separately.

- Figure 7 is a heat map showing $\nabla E(v_i(w_i, p_i))$, the first order condition for this problem (loosely).

Roback's version I

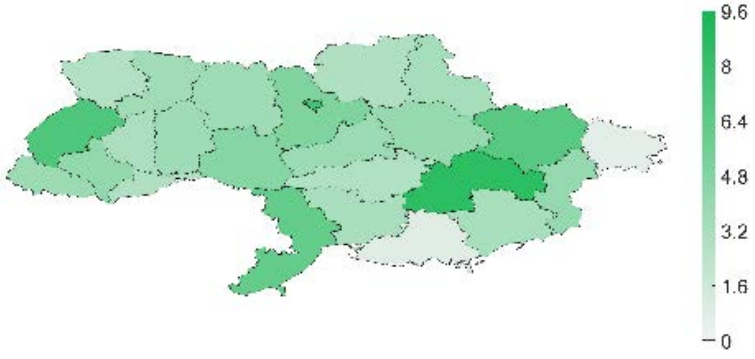
- This model is an elaboration of the Roback model with general equilibrium bookkeeping and heterogeneous agents.
- Roback: Wages are marginal product, rents adjust to equalize utility of homogenous agents; high rents for nice places, high wages for productive places.
- For A_i amenity in i and h_i housing consumption, Roback Theorem is

$$p_A \equiv \frac{\frac{\partial v}{\partial A_i}}{\frac{\partial v}{\partial w_i}} = h_i \frac{\partial p_i}{\partial A_i} - \frac{\partial w_i}{\partial A_i}$$

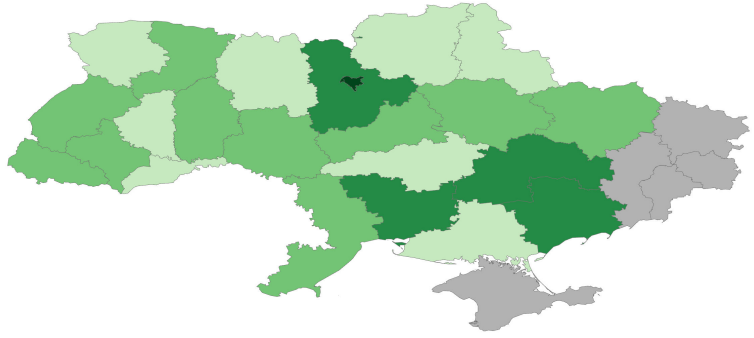
Value of change amenity is sum of changes in rent and wages. Figure 7 is (almost) the numerator of the LHS. The simpler

Roback's version II

calculation is a transparent way to benchmark the model.



$\frac{\partial v_i(w_i,p_i)}{\partial A_i}$



Roback

- With Roback, place specific amenities are uniform and no GE. With QSM, they are divided between a place specific component and "preference shocks" and GE.

Procurement I

- There is a procurement database in operation, and it allows the authors to estimate the difference between the contracting engineer's estimate and successful bid. This means that the contracting system can be used to monitor the procurement system almost real time.
- What information should the procurement system collect? Ask a lawyer and a quartermaster.
- Randomize contracts offered? Monitor for problem districts or types of projects?