What does the strange crisis in Russia indicate about labor supply?

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Overview of the Paper

- They study the recent crisis period in Russia to assess its effect on labor supply.
  - $\rightarrow$ how does a tightening of the borrowing constraint affect labor supply?
- Motivated by the fact that labor market reaction during the crisis was negligible (employment and unemployment rates hardly moved).
- Build an incentive model of the household sector, quantified using survey data.
- **Main Findings**: labor supply decreased in response of a tightening of the borrowing constraint.
- Interesting topic: relevant research question + micro–based model with macro implications.

Model

- Households choose consumption and labor supply:

$$\max_{L_i, C_i} U_i = -\frac{1}{2}L_i^2 + C_{1i} + C_{2i} - \frac{\beta}{2}(C_{1i}^2 + C_{2i}^2)$$

s.t.

$$C_{1i} + \frac{C_{2i}}{r} \leq L_i \left(Y\epsilon_i + \frac{Y}{r}(1-\epsilon_i) \right), \tag{1}$$

$$C_{1i} \leq L_i \left(Y\epsilon_i + \frac{1-\gamma}{r} Y(1-\epsilon_i) \right), \tag{2}$$

$$C_{1i}, C_{2i}, L_i \geq 0. \tag{3}$$

- Loan market cleared by interest rate r (heterogeneity in ϵ_i determines differences in consumption/saving behavior).
- γ is the key parameter for borrowing constraints.

Comments on Model (1/2)

- **Time discounting**: agents are indifferent between consuming today or tomorrow.
  - But degree of impatience seems very relevant for quantitative impact of γ.
- **Intertemporal labor supply**: agents cannot separately choose L_1 and L_2.
  - But a tighter constraint would put pressure on L_1 only.
- **Interdipendence of wages over time**: a change in ϵ reshuffles resources from a period to another.
  - A temporary drop in wage would be accomplished by a combination of changes in ϵ and Y: why not allow for w_1 and w_2? $\rightarrow$ also, aggregate implications are likely to differ.

Comments on Model (2/2)

- **Heterogeneity**: households only differ in ϵ.
  - What about other relevant dimensions of heterogeneity? (wage levels, or wealth).
- **Labor demand**: agents can pick any amount of L at the prevailing rate Y (perfectly elastic demand).
  - This allows to interpret changes in equilibrium quantities as changes in supply... but what is really the case?

Comments on Estimation (1/2)

- Estimating equation:

$$\log\left(C_{1i} - L_i Y \epsilon_i\right) - \log\left(L_i Y \epsilon_i\right) = \log\left(\frac{1-\gamma}{r}\right) + \log\left(\frac{1-\epsilon_i}{\epsilon_i}\right) - u_i.$$

- Y = labor income?
- Why not take into account also capital income? But then one should add this to the model.
- $(C_{1i} - L_i Y \epsilon_i)$ represents debt only because there are no assets $\rightarrow$ introducing a bias?

Comments on Estimation (2/2)

- Proxy future vs. current income:

$$\frac{1-\epsilon_i}{\epsilon_i} = \delta_1 \left(\frac{rY_{ref}}{Y} \right)^{\delta_2}$$

- Why not heterogeneity also on the denominator?
- Ideally, ϵ should be mapped to life–cycle wage profiles. Any evidence they changed?
- Most of the credit constrained HH's (90%) are identified through the survey questions $\rightarrow$ How can one guarantee that the estimates of the borrowing constraint are consistent with the whole sample?

Comments on Calibration and Quantitative Analysis

- β (curvature of utility) is a determinant of risk aversion, but it is set to match labor supply.
  - Why not introduce a parameter on disutility from work?
- γ (borr. constraint) is set to match labor supply dynamics.
  - In this way, labor supply is matched by design $\rightarrow$ what's the counterfactual evolution of LS, absent any change in γ?
  - Variation in γ is (too?) large: from 0.1 to 0.8 in 3 years.

Intuition on Main Result?

- They find a negative relationship between labor supply and borrowing constraint... but why?

$$C_{1i} \leq L_i \left(Y\epsilon_i + \frac{1-\gamma}{r} Y(1-\epsilon_i) \right).$$

- An increase in γ restricts the feasible set for C_{1i}.
- Increasing L_i can (at least partially) undo this effect, for constrained agents.
- Nothing changes for unconstrained agents.
- What else is going on? What about r?