Referee report on Welfare and Spending Effects of Consumption Stimulus Policies by Carroll, Crawley, Frankovic & Tretvoll

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Summary

The paper provides an estimate of the welfare benefits of different countercyclical policies in recessions. In the first part of the paper, the authors present a heterogeneous agent model which is able to match three stylized facts about marginal propensities to consume (MPC) and their relationship with liquid wealth: (i) the shape of aggregate intertemporal MPC, (ii) the cross-sectional distribution of liquid wealth, and (iii) the fact that initial MPCs out of transitory shocks are very high. The model achieves this through the inclusion of a "splurge" parameter, which makes agents spend a constant fraction of their income each period. The splurge factor is estimated from Norwegian data and then applied to a model calibrated to the US economy. To match the liquid wealth distribution, the paper utilizes heterogeneous discount factors within three educational groups. Lastly, in order to be able to generate fiscal multipliers, the model relies on an exogenous feedback loop between aggregate spending and aggregate demand.

The second part of the paper evaluates three countercyclical policies, both in terms of consumption increases and welfare benefits: (i) stimulus payments, (ii) unemployment insurance (UI) extensions and (iii) a two-year income tax cut. Stimulus payments have immediate effects and increase aggregate consumption during recessions the most. UI extensions have similar effects, albeit slightly less pronounced. Both policies have significant aggregate demand multipliers, as they trigger spending by high MPC agents. Tax cuts rank third, as they mostly benefit low MPC agents. In terms of welfare, the UI extension provides the biggest gains, as they are most targeted to high MPC consumers (and hence those with high marginal utilities). Stimulus payments are untargeted and hence are sent to many low marginal utility agents. Tax cuts, again, rank last, since they benefit employed individuals who benefit little from them.

In my view, the paper makes two contributions. First, it is able to match new empirical estimates on the iMPC distribution by including a "splurge" parameter. Second, it provides very

transparent policy and welfare analysis of three policies that have been employed in the fight against recessions. The model, is somewhat stylized, with exogenously varying job-finding probabilities and an exogenous aggregate demand multiplier in an endowment economy; but this makes its conclusions tractable and clear.

The paper is well written and convincingly shows that UI extensions are, under some assumptions, the best way to alleviate recessions. Below are my suggestions for making the paper even more clear and persuasive.

Essential points

- The first half of the paper spends some time on motivating the splurge factor in consumption, but it is then taken for granted in the policy evaluations. Thus, the two sections appear somewhat disconnected. It would help me to see the policy results for a model calibrated without the splurge factor, at least in an appendix. Is matching the initially very high MPC out of transitory shocks essential for the policy conclusions drawn in the paper, or would the same conclusions be obtained from a more standard heterogeneous agent model? I imagine a removal of the splurge factor will make stimulus checks and income tax cuts much less attractive, but the strength of the channel shout be reported.

- In the model, transition rates from employment to unemployment (E to U) are calibrated to different values across education groups, while job-finding rates out of unemployment (U to E) are constant across groups. The probability of transitioning out of unemployment also appears to not change over the cycle, while the separation rate does (this seems odd, as the DMP literature tends to assume that separation rates are constant and job-finding rates move with the cycle (see, e.g., Hagedorn & Manovskii (2008, AER)). This focus on E to U rates is not motivated and the reader is left to wonder whether this is a crucial assumption or not. It appears that the model could be calibrated to match the same moments with heterogeneous U to E probabilities and constant separation rates, instead. I presume this would make recessions much worse for unemployed dropouts, boosting the welfare effects of a UI extension. Given that the welfare results of the paper strongly favor UI benefit extensions, a discussion of the heterogeneous E to U rates assumption seems warranted.

- I had trouble understanding the welfare criterion used to evaluate the three different policies. My own intuition for comparing the policies would have been to simulate, for each policy, two recessions, one with the policy and one without, and then compare aggregate welfare between the two; potentially also to an economy without a recession, to quantify the cost of business cycles. This approach is deemed not viable at the top of page 27, because it would give the social planner incentive to redistribute outside of recessions. I think this point warrants additional explanation. Is the problem that recessions end stochastically, making it difficult to exclude welfare gains from, e.g., a UI extension after the recession is

over? In this case, one could compute this measure for each recession length, not including the additional welfare gains from continuing policies after the recessions, and weight them by their probabilities. I'm sure the explanation is perfectly obvious to the authors, but a reader will strongly benefit from an additional discussion. It was also unclear to me why the recessionary policies investigated had fiscal costs in non-recessionary periods, as suggested in equation (12). Relatedly, page 9 states that all policies have the same fiscal cost and are financed through taxes in the far future, but I could not find how $PV(policy, Rec)$ or $PV(policy, 0)$ are constructed. How can they be included in equation (12) without further assumptions about the timing and implementation of taxation schemes? This also matters for the results presented on page 25—is $NPV(\infty, \Delta G)$ roughly constant across policies?

Suggestions

- In my view, the robustness section can be relegated to an appendix. None of the exercises come close to changing the welfare ranking across policies. Further, in three of the four exercises (risk aversion, interest rates and recession properties), the quantitative welfare results change only marginally.

- When estimating the splurge factor, the authors calibrate a model to the Norwegian economy to match marginal propensities to spend out of lottery winnings and the liquid wealth distribution. Unfortunately, they latter does not exist for Norway, hence the authors instead target the US liquid wealth distribution from the 2004 SCF. I think it would be prudent to target a liquid wealth distribution for a country whose labor market institutions more closely match Norway's, e.g., Germany or France. The European Union's Household Finance and Consumption Survey provides such a measure, the codes to compute the relevant metrics are provided with the Brookings Paper by Kaplan, Violante & Weidner (2014).

- In the final paragraph of the introduction, the authors discuss the possibility of targeted stimulus checks (as opposed to the case discussed in the paper: means tested, but universal distribution). I think estimating this case would help readers benchmark the welfare results by providing an upper bound. As of now, it is clear that UI extensions in the model do most to increase welfare; but are they far away from this hypothetical upper bound?

- The model presented in the paper does not feature endogenous search, which precludes the UI extensions from having negative effects on job-finding, as proposed in, e.g., Mitman & Rabinovich (2015, JME). In this sense, the authors, in the name of tractability, stack the deck in favor of the UI extensions. I'm strongly sympathetic to the assumption, but it would be interesting to know how bad the negative incentive effects would need to be for the UI extension to lose its effectiveness. For example, assuming that job-finding probabilities decrease linearly with benefit size, how negative would the function's slope need to be for the paper's conclusions to revert? A back of the envelope calculation could provide an answer.

My prior would be that the number is too high to be realistic, strengthening the conclusions in the paper.