Understanding the Great Gatsby Curve

Proposal for the *Macroeconomics Annual*

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The observation by Miles Corak (2013) that OECD countries exhibit a negative relationship between measures of cross section inequality and rates of intergenerational mobility, dubbed by Alan Krueger (2012) "The Great Gatsby Curve" has received wide scholarly and policy attention. For the US, the reason is clear: evidence that the US has greater wage and income inequality as well as lower rates of intergenerational mobility calls into question important aspects of the standard claim that Americans are focused on equality of opportunity rather than equality of outcomes.

Our proposed *Macroeconomics Annual* paper has two objectives. First, we wish to provide an evaluation of the evidence on the Gatsby Curve. Second, we wish to provide some insight into the mechanisms which underlie the relationship.

In terms of measurement, we think the Gatsby Curve discussion is missing a crucial dimension: time. The conventional cross-country formulation of the Gatsby Curve is, in our judgment, inadequate for the standard reasons which render cross-country growth regressions problematic. We summarize these problems as nonexchangeability of national societies. There are simply too many differences between national economies to render the curve informative about how to understand the reasons why countries are arrayed along the curve in a particular way. This does not diminish Corak's contribution, but rather indicates where new research is needed.

Our paper will reformulate the Gatsby curve question from one that focuses across countries, to an exploration of the dynamics of inequality and mobility for the US. In other words, we wish to explore, in the American context, whether greater cross section inequality within a generation reduces mobility for the children of that generation. We Models in which inequality and mobility coevolve and so, in principle can generate such intertemporal Gatsby Curves as equilibria, are (as far as we know) all intra-country in structure[1]. Inter-country analyses based on these models are possible, of course, by varying some of the models' primitives. But the economic logic of the models is driven by the intra-country dynamics. So we think the first topic of interest is assessing evidence of an intertemporal Gatsby curve for the US.

[1]This is true for classical intergenerational mobility models such as Becker and Tomes (1979), contemporary skills-based models of mobility such as Heckman and Mosso (2014) and Lee and Seshadri (2015), or social interactions based models (Durlauf (1996), Durlauf and Seshadri (2016).

There are a few papers that have attempted to measure a Gatsby-type relationship for the United States. The findings are fixed. Bloome (2015) fails to find evidence of relationship while Aaronson and Mazumder (2008) and Kearney and Levine (2015) do. The reason for the discrepancies in the results are twofold[2]. First, Bloome focuses on variances while Aaronson and Mazumder and Kearney and Levine focus on 50/10 and 90/50 ratios. For theoretical reasons delineated in Durlauf and Seshadri (2016), there are good reasons to believe that the Gatsby curve results should be interpreted using percentiles, since one class of underlying mechanisms (the effect of inequality on the decoupling of the tails of the income distribution from the rest of the population), suggest that variance/mobility comparisons will be relatively uninformative.

In our work, we will provide a nonparametric version of the curve, which maps the income distribution to mobility, so that previous results are either examples of averaging over percentile differences (variance comparisons) or specific choices of percentiles many be interpreted as special cases which reduce this mapping to a simple curve. This is not simply a formal exercise. Rather, what our approach will allow us to do is measure how different *shapes* for the income distribution affect mobility. This is the relationship that is predicted by various intergenerational mobility models.

In this section, we will also consider how income inequality affects mobility for different parts of the income distribution. By this, we mean to relax the assumption that there is a single parameter (the intergenerational elasticity of income) which characterizes mobility for all families. Again, appealing to theory, there are good reasons to suppose that increasing inequality reduces mobility for families in the tails of the income distribution more than families in the middle.

Together, we believe these analyses will provide a comprehensive description of the "facts" of the Gatsby Curve.

Second, we will develop Gatsby curves and generalized alternatives for variables such as education, which are understood to be determinants of both inequality and mobility. This will allow us to evaluate whether the Gatsby curve relationships derive, in a transparent way from particular mechanisms. Heckman and Landerso (2016) do some of this in comparing Denmark and the United States to conclude that the reasons for income inequality differences post tax transfers and not education. This type of analysis indicates how the interrelationships between Gatsby Curves for difference variables can be illuminating.

Our approach will be to systematically build an income inequality/mobility Gatsby curve out of Gatsby curves for mechanisms. Analogies to vector autoregressions exist (although data are not nearly as rich and ARMA structures thereby limited) if one introduces

[2]The groundbreaking Chetty et al (2014) paper does not directly explore this relationship, but location specific evidence in the paper indicates weak evidence of a curve. One issue that will need to be addressed is whether access to the Chetty IRS data will be useful in our analysis.

feedbacks between variables. Here our objectives are to understand how changes in inequality, in say education, transmit to changes in intergenerational mobility. Impulse response functions and variance decompositions will in principle be feasible.

Third, we will explore a microfounded approach to the Gatsby curve using PSID data. Specifically, we will construct structural intergenerational mobility regressions and use these to build up implied Gatsby curves. This will allow for a comparison of micro and macro approaches to inequality/mobility links. This exercise will not obviate the macro-level analyses. Rather, it will illuminate the extent to which macro and micro perspectives on inequality and mobility are consistent.

Our microfounded approach will, finally, allow for some assessment of the different theoretical models of the Gatsby Curve. Nonlinearities in the mapping of parental income to offspring income in the Becker-Tomes model, can produce a negative relationship between inequality and growth. In the Heckman-Mosso and Lee-Seshadri models, credit constraints will do this, as the trajectories of parental investments in children are altered. In segregation-based models such as Durlauf and Durlauf-Seshadri, changes in cross section inequality lead to increased socioeconomic segregation, which slows down mobility. The PSID is ideal for facilitating comparisons of these approaches because it contains detailed individual-, family-, and neighborhood-level information. We will use the restricted-use PSID geocode file to match individuals to census tracts. Data on the socioeconomic composition of census tracts and segregation will come from the Geolytics Neighborhood Change Database (NCDB).

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