Cross-Country Intergenerational Status Mobility: Is There a Great Gatsby Curve?

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Abstract

Countries with greater income inequality also tend to have less intergenerational mobility. This relationship, as referred by Krueger (2012), is called "The Great Gatsby Curve". Criticisms on this curve have noticed several limitations of previous studies: a few number of observations; short gap of time between measured inequality and immobility; heterogeneous databases; and model-based estimates of immobility. To correct for some of these limitations, we test for the impact of past income inequality on intergenerational social status persistence using the International Social Survey Program (2009). In accordance with previous studies, we find a positive relationship between these two variables, though the relatively poor model fit suggests the presence of other factors. In this respect, we find that past economic freedom has a negative and significant impact on social status persistence, while previous growth is not significant.

Keywords: Intergenerational mobility; income inequality

JEL codes: I3, D3

Introduction

The "Great Gatsby Curve" is the name given by Alan Krueger (2012) to the relationship between intergenerational earnings elasticity's and income inequality. Corak (2013b) describes the Great Gatsby Curve as the tendency of countries with higher income inequality to be countries where a greater fraction of economic advantage and disadvantage is passed on from parents to children. The debate on this proposal has spread to the blogs of Paul Krugman and Greg Mankiw as well as the popular press (*NPR News Hour, Economist Magazine and the National Review*). Krueger (2013) has further stimulated the debate by projecting that growing income inequality would lead to a substantial decline in future social mobility in the United States. But, why is the Great Gatsby Curve raising so much debate?

It is often argued that income inequality is fine as long as there is income mobility. Therefore, if the Great Gatsby curve is true, countries would not compensate for income inequality through income mobility. The greater the distance in a country between a high and a low income, the harder it would be to go from the latter to the former or vice versa. Unfortunately, the few number of observations available for the intergenerational elasticity of earnings allows only a correlation analysis. Thus, Corak (2013b) recognizes that the Great Gatsby Curve is not a causal relationship.[1] Worse still, the elasticity estimates come from independent studies which consider databases with different levels of reliability and measures of income defined in a different way across countries. Another difficulty worth mentioning is that elasticity estimates are generally based in models. Ideally, the analyses should use real data on adults and on their parents when they were children. However, many countries do not conduct studies tracking children's income

[1] Corak believes it is "too glib to dismiss it by simply saying correlation does not imply causation." In his view the Great Gatsby Curve summarizes the "whole host of ways that inequality of incomes affects children" (2013b; p.7).

as they grow older, so researchers must estimate childhood income using an algorithm obtained from a separate data set and compare the result against actual adult-child income.

In addition to these technical problems, there are other important criticisms. Because the reasoning behind the Great Gatsby Curve is that past inequality diminishes current opportunities, the temporal gap between both, inequality and intergenerational elasticity of earnings, should be sufficiently large. Otherwise, the Great Gatsby Curve would just reflect that intergenerational immobility and cross-sectional inequality are related to each other because they shared common factors (Björklund and Jantti, 1997; Solon, 2004). For example, the Great Gatsby Curve in Corak (2013a) and Krueger (2013) is calculated from inequality data for about 1985, and intergenerational income mobility measures for cohorts of children born during the early to mid-1960s with adult outcomes measured in the mid to late 1990s. That is, the temporal gap considered is approximately one decade. This gap does not seem to be sufficiently large to avoid the fact that common factors to both variables might drive the estimation of the curve. Finally, Clark (2014) using surname data suggests that the relationship between inequality and mobility disappears over sufficiently long time periods.

In this paper, we try to palliate these shortcomings. First, the largest number of observations used in the analysis of the Great Gatsby Curve is, as far as we are aware, 22 countries (Corak, 2013a). By exploiting the module Social Inequality Survey IV (2009) of the International Social Survey Program (ISSP), we are able to extend the analysis to 39 countries. Second, the ISSP is the result of a cross-national collaboration so the databases are homogeneous and the measures of income are similar across countries. Third, the surveys in the module Social Inequality Survey IV (2009) ask respondents both their current position in the social status hierarchy as well as the position of the family they grew up in. Finally, we use the Gini coefficient for circa 1990, while

the intergenerational elasticity in status is measured in 2009. Hence, the temporal gap considered in this study is almost two decades. Accordingly, elasticity estimates are based on individual perceptions of status mobility, rather than models. In principle, the Great Gatsby Curve refers to the impact of past income inequality on intergenerational income persistence rather than intergenerational status immobility. For this reason, we will ask the related question: Is there a Social Status Great Gatsby Curve?

Apart from testing for the Social Status Great Gatsby Curve, we also test for a second hypothesis: greater economic freedom enhances intergenerational mobility. By limiting nepotism and launching meritocracy in society, economic freedom could be a significant source of intergenerational mobility. Taking advantage of the existence of the Fraser Economic Freedom Index for 1990[2], we evaluate the impact of this dimension in intergenerational mobility as well. The obtained results are: past inequality has a significant and positive effect on the intergenerational elasticity of social status, but this factor alone is far from explaining the whole variability of this elasticity. Interestingly enough, we find that past economic freedom is also important, namely, it has a significant and negative effect on social status persistence. Meanwhile, previous growth does not seem to exert any influence on social status mobility.

In the next section, we briefly compare the intergenerational elasticity of earnings with the alternative measure used in this paper, the intergenerational elasticity of social status. Then, in Section III, the data are presented and the intergenerational elasticity of social status is calculated for all the countries in the sample. Section IV presents and comments the results on the Social Status Great Gatsby Curve and the Economic Freedom Hypothesis. Finally, Section V concludes.

[2] See Gwartney et al.,1997.

II. Estimation of the Intergenerational Elasticity

The elasticity of intergenerational mobility denotes the persistence in the values of relevant variables like income, earnings, wealth, status, education attainment, consumption or occupations between parents and children. Thus, in the canonical Galton (1869) regression of a child's outcome (y_{it}) on the parent's outcome (y_{it-1}):[3]

$$\ln y_{it} = \alpha + \beta \ln y_{it-1} + \varepsilon_{it} \quad (1)$$

the constant term α captures the trend in average outcomes across generations due to changes in technology, labor market institutions, international trade and the like. The error term ε_{it} represents all other influences on the child's adult outcome not correlated with parental outcome. And the coefficient β, called intergenerational elasticity, measures the degree of persistence in family's outcome across generations. The higher the value of β, the larger the capacity of parent's outcome to predict children's achievement. Accordingly, 1-β is a measure of intergenerational mobility.[4]

This model which applies only to quantitative variables can be easily estimated by least squares. However, note that the intergenerational elasticity offers an overall average measure of the degree of immobility without saying anything about the direction of change. Cross-country differences may reflect differences not only in the degree of upward mobility, but also in the magnitude of downward mobility. In addition, this approach does not allow us to study mobility of subgroups across the full distribution, that is, the percentile of the child's variable conditional on the percentile of the parent's variable.

[3] To enable a broader set of cross-country comparisons, the literature has typically focused on the outcomes of fathers and sons since the analysis needed to address the changing role of women in the labor force is more complicated. Since we are measuring social status, not earnings, we include females in our analysis.

[4] See Mulligan (1997) for a detailed description of this model.

Bearing in mind all these premises, we follow this approach to estimate the elasticity of intergenerational mobility in social status. In principle, the Great Gatsby Curve refers to the effect that past income inequality has on intergenerational income persistence.[5] Therefore, because we analyze here the individual's current position in the social status hierarchy in comparison with the position of the family that he grew up in, we actually ask: Is there a Social Status Great Gatsby Curve?

III. Data

The International Social Survey Program (ISSP) is a cross-national collaboration of survey's covering topics of interest to social science research. To date, the data consists of 26 modules, beginning with six countries in the 1985 Role of Government module to as many as 40 countries in later surveys. Module topics include religion, citizenship, health, environment, and social inequality, among others. We are primarily interested in the social inequality modules. These began in 1987 and were repeated for 1992, 1997 and 2009. In the first three modules the survey asked the respondent to report their individual perceptions of upward or downward mobility within the past 10 years. Importantly, this survey question was modified for 2009 and now asks your individual perception of mobility relative to the family you grew up in. This provides the measure of *intergenerational* social mobility for our study.

The Social Inequality IV (2009) module includes 40 countries, 39 of which are included in our study (reasons for excluding the US are discussed below). Sample sizes vary from 1335

[5] Two are the potential advantages of using self-reported social status persistence as opposed to earnings persistence. First, the inherent randomness of earnings is greater than that of social status (see Clark, 2014). Earnings depend on occupational choice and the short-run volatility of the economy, while status is quite stable over time. Second, parental earnings are usually declared at the particular moment when the survey takes place, while reported parental status usually reflects a whole-life (long-term) position in the labor market.

responses (China) to 233 responses (Estonia) with the median number of responses for a country being more than 500 responses. As a legacy of earlier surveys, "East" and "West" Germany were surveyed separately; we construct separate mean responses for each region and create "Gemany" as a population weighted average. We address the separation of Great Britain and Northern Ireland in a similar manner.

Figure 1 provides the actual social status questions. Respondents are asked to place themselves on a ladder scale from 1 to 10. They are then asked to place the families they grew up in on the same scale. We measure social mobility by the relationship between these two positions.

In order to summarize the social mobility data Table 1 provides differences in current position relative to the family of birth. The 39 countries in our sample are sorted by GDP per capita into high, middle and low income groups. In the center of the table is "NONE," implying no change in current position relative to parental family position. Surprisingly, we find little difference in the degree of social stability across income groups—in each case about 36 to 37 percent of respondents report no change in social status. Roughly speaking, regardless of income level, about one-third of respondents report no status change, one-third move up or down by one position, and one-third move up or down by more than one position. While we cannot strictly say that social mobility does not vary by the level of country income, the lack of mobility difference across income groups is noteworthy. Finally, we detect a small positive bias (see "average" column) in the responses of middle and upper income respondents—more people say they moved up than down in a zero sum process. Low income countries report no such bias as the net position change is reported as -0.04.[6]

[6] Most countries report values close to +/- 0.5, however China reports a + 1 while the Ukraine reports a -1.

Inequality and Social Status: We follow Corak and summarize social status mobility with the status elasticities (See Section 2). Table 2 reports the social status elasticities for 39 countries. The average status elasticity for our 39 countries is 0.46 which is 40 percent larger than Corak's (2013b) earning elasticity.[7] The US is included in *Social Inequality IV* but its elasticity is not reported in Table 2. We exclude the US from our analysis because it's estimated social status elasticity is negative, oddly implying that high status persons come from low status families. The US is the only country with a negative elasticity. To follow up on this issue we also estimated the 10 year status mobility elasticity using the related question in *Social Inequality III*. Again, we find the US 10 year status elasticity is negative while all other countries have positive status elasticities. Perhaps the idea of social status is repugnant to Americans—in any case we do not include the US in our sample.

The countries are presented from the lowest elasticity (least social persistence) to highest elasticity (greatest social persistence). Note that an elasticity of "0" implies no relationship between parental family position and current position while an elasticity of "1" suggests that family position perfectly predicts current position. The elasticities range from 0.234 in Latvia to 0.716 in South Africa. Germany and Austria are among the countries with the lowest persistence, Sweden and Japan are in the middle, and the Slovak Republic and the Philippines along with South Africa are the countries with the highest social persistence.

In order to test the Great Gatsby Hypothesis with social status mobility we need lagged Gini's. Table 1 provides Gini coefficients collected from the World Bank and the OECD. In the same manner as Corak, we use Gini's lagged 20 years, or circa 1990. For the former socialist countries of Eastern Europe, the first Gini's available are from 1993. The lagged Gini's vary

[7] This is consistent with Clark's (2014) argument that status is less subject to random shocks than earnings. Our estimates are smaller than "Clark's Rule" of 0.75.

from a low of 19.5 in the Slovak Republic to 63.0 in South Africa. It is interesting to note that the Slovak Republic has one of the smallest lagged Gini's while South Africa has one of the highest.

In addition to the lagged Gini's, which we use to test the Great Gatsby Hypothesis, Table 2 also includes the Fraser Economic Freedom Index. While the Great Gatsby Hypothesis implies higher lagged Gini's lead to more social persistence we test a second hypothesis that greater economic freedom allows greater social mobility.

Given the data used to estimate the intergenerational elasticity of social status, it is worth commenting one potential limitation of this study. In principle, it is possible that people measure intergenerational status mobility in different latent scales so our measure, individual perception of intergenerational status mobility, could be biased. However, it is interesting to note that the literature on happiness which is mainly based on reported life satisfaction, has found little evidence of reporting bias in practice (see Beegle et al, 2012, Clark et al, 2012 and references therein). In accordance with this finding and to make our measure consistent with the previous literature, which focuses on a more objective measurable outcome, such as income or earnings, we assume that reporting biases are negligible.

IV. Empirical results

Figure 2 and Table 3 presents the social mobility Great Gatsby Curve. While we find a positive and significant relationship between the lagged Gini coefficient the model fit is very poor (R^2 = 0.18 compared to Corak's model, R^2= 0.76). Furthermore, the magnitude of the lagged Gini

effect is about four times smaller in the social mobility case as opposed to Coraks' results (0.005 vs. 0.022). Of course, Corak is measuring father-son earnings elasticity and we are measuring self-reported social mobility for all respondents.

Table 3 further investigates the determinants of relationship by introducing additional control variables. In particular, we would like to address several issues. First, of the 39 countries in our sample, 11 are former socialist countries of Eastern Europe. In most cases these countries experienced a significant increase in their Gini coefficients over time. Second, we hypothesize that social mobility is directly related to economic freedom—a country with a poor record of economic freedom will not generate opportunities for its citizens to rise in the social status distribution. We estimate the effect of economic freedom on social status mobility using the Fraser Institute Index of Economic Freedom (see Table 2). Finally, we control directly for the effect of economic growth on social status mobility using the change in GDP er capita between 1995 and 2008.

The first column in Table 3 presents the Great Gatsby Curve estimation results (as shown in Figure 1). Model 2 controls for the 11 Eastern European countries. We find that the Eastern Europe indicator variable positive, but with a p-value that is just above 0.10; however, adding the Eastern Europe control does improve R^2 to 0.24. Next, we test the hypothesis that economic freedom is negatively related to social status persistence. Model 3 confirms our conjecture—the negative sign for the Freedom variable indicates that social persistence declines with an increase in the degree of economic freedom. Importantly, controlling for economic freedom does not change the positive relationship between the lagged Gini coefficient and social status persistence. This implies that both factors influence social mobility; high degrees of inequality and the lack

of economic freedom both hinder social mobility. Finally, Model 4 controls for GDP growth between 1995 and 2008. Here we find that growth has no significant impact on social mobility.

V. Conclusions

This paper addresses two hypotheses, the Social Status Great Gatsby Hypothesis —higher inequality leads to less social mobility, and the Economic Freedom Hypothesis —greater Economic Freedom leads to greater social mobility. Using data on 39 countries from the ISSP Social Inequality Survey (2009), our estimation results are consistent with both of these hypotheses: intergenerational elasticity of social status is positively affected by economic inequality and negatively affected by economic freedom. However, growth is found not to have any influence on social status mobility. Despite these results, the relatively poor fit of the model suggests that other factors yet uncovered could be also explaining differences in social status mobility across countries.

References

Beegle, K., Himelein, K. and Ravallion, M. (2012): "Frame-of-reference bias in subjective welfare", *Journal of Economic Behavior and Organization*, 81, pp. 556-570.

Bjorklund, A. and Jäntti, M. (1997): "Intergenerational income mobility in Sweden compared to the United States", *American Economic Review*, 87, pp. 1009-18.

Clark, A. Fleche, S. and Senik, C. (2012): "The great happiness moderation", *IZA Discussion Paper 6761*.

Clark, G. (2014): *The Son Also Rises: Surnames and the History of Social Mobility.* Princeton, USA: Princeton University Press.

Corak, M. (2013a): "Inequality from Generation to Generation: The United States in Comparison", in Robert Rycroft (ed.), *The Economics of Inequality, Poverty, and Discrimination in the 21st Century*. ABC-CLIO. Available at http://milescorak.com.

Corak, M. (2013b): "Income inequality, equality of opportunity, and intergenerational mobility", *Journal of Economic Perspectives* (forthcoming).

Galton, F. (1869): *Hereditary Genius: an Inquiry into its Laws and Consequences*. London, UK: Macmillan and Co.

Gwartney, J., Lawson, R. and Block, W. (1996). Economic Freedom in the World, 1975-1995. Vancouver, B.C.: Fraser Institute.

Krueger, A. (2012): "The Rise and Consequences of Inequality", Presentation made to the Center for American Progress, January 12th. Available at http://www.americanprogress.org/events/ / 2012/01/12/17181/the-rise-and-consequences-of-inequality/.

Krueger, A. (2013): "Land of hope and dreams: rock and roll, economics, and rebuilding the middle class", Presentation made at the Rock and Roll Hall of Fame in Cleveland, Ohio, June 12th. Available at http://www.whitehouse.gov/sites/default/files/docs/hope_and_dreams_-_final.pdf.

Mulligan, C. B. (1997): *Parental Priorities and Economic Inequality*. Chicago: University of Chicago Press.

Solon, G. (2004): "A Model of Intergenerational Mobility Variation over Time and Place", in Miles Corak (ed.), *Generational Income Mobility in North America and Europe*. Cambridge: Cambridge University Press.

Table 1. Net Change in Position: Current vs. Family Grew Up In

Position	<-3	-3	-2	-1	None	+1	+2	+3	>+3	Average
High Income	2.07	2.71	5.92	10.30	37.16	18.84	13.57	5.79	3.64	0.40
Middle Income	2.69	3.16	6.28	8.40	35.71	18.63	14.74	6.67	2.43	0.42
Low Income	5.57	4.94	8.44	11.15	37.26	14.88	9.33	4.51	3.93	-0.04
All Countries	3.79	3.831	7.10	10.43	37.00	16.96	11.76	5.32	1.54	0.37

Notes: "None" implies percent who report no change in social status relative to "family they grew up in"; "-1" implies moved down one position (out of 10); "+1" implies moved up one position; and, "+/- 3" implies moved 3 or more places relative to family they grew up in.

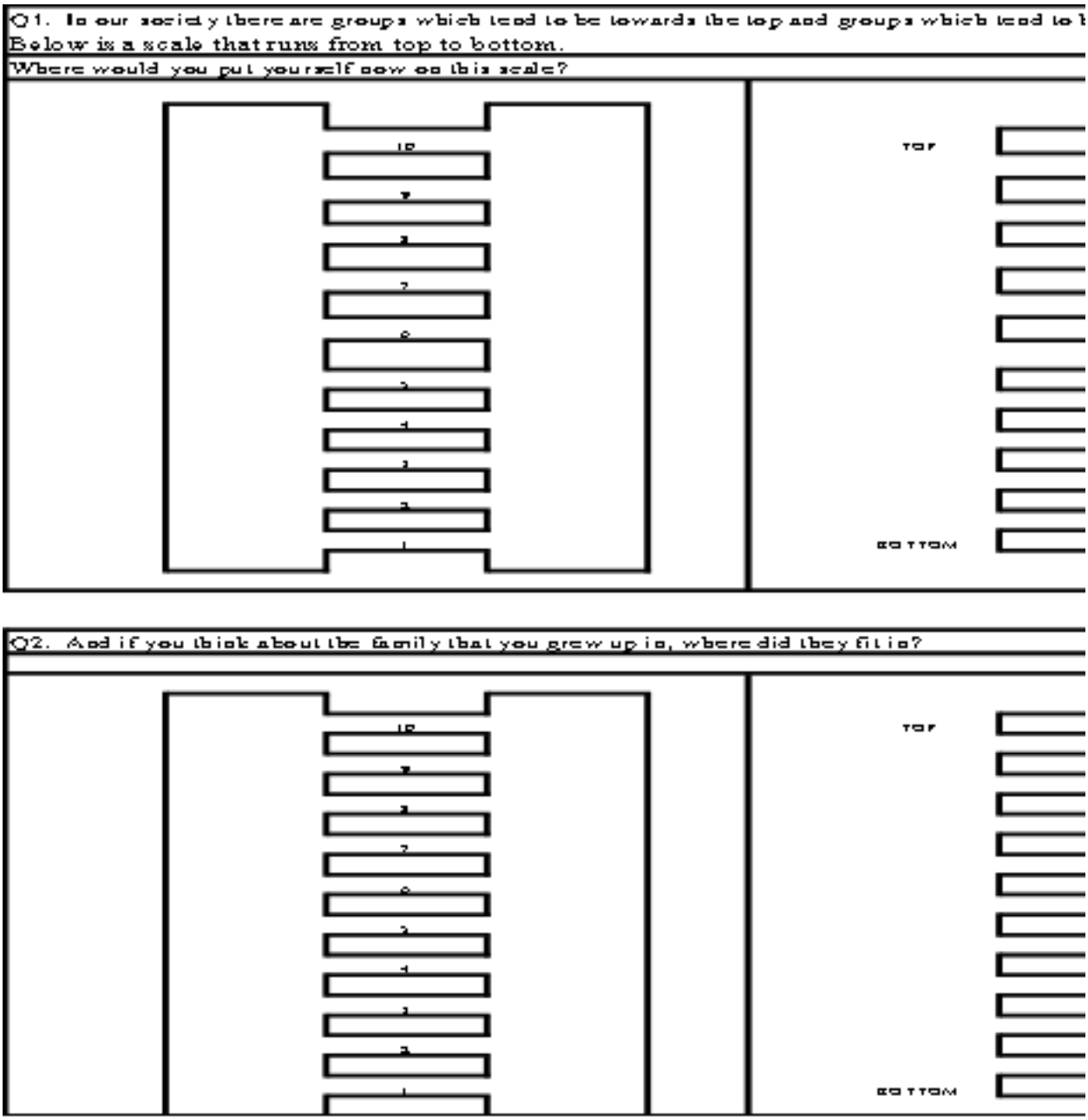
Table 2. Cross-country Social Status Persistence Elasticity
(Ordered lowest to highest)

Rank	Country	Social Elasticity (2009)	G (1
1	Latvia	0.234	2
2	Germany	0.285	2
3	Austria	0.299	2
4	Switzerland	0.311	3
5	Korea, Rep.	0.313	3
6	Croatia	0.327	2
7	Australia	0.366	2
8	New Zealand	0.367	3
9	Iceland	0.368	3
10	Norway	0.373	2
11	China	0.376	3
12	Denmark	0.389	2
13	Taiwan	0.393	3
14	Hungary	0.397	2
15	Estonia	0.400	2
16	Ukraine	0.408	2
17	France	0.413	2
18	Sweden	0.413	2
19	Solvenia	0.426	2
20	Spain	0.455	3
21	Japan	0.457	3
22	Belgium	0.472	2
23	Argentina	0.473	4
24	Cyprus	0.489	2
25	Finland	0.489	2
26	Poland	0.491	2
27	United Kingdom	0.519	3
28	Russian Federation	0.532	2
29	Venezuela, RB	0.542	4
30	Italy	0.544	2
31	Turkey	0.576	4
32	Chile	0.580	5
33	Czech Republic	0.585	2
34	Israel	0.608	3
35	Portugal	0.637	3
36	Bulgaria	0.647	2
37	Slovak Republic	0.675	1
38	Philippines	0.677	4
39	South Africa	0.716	6

Table 3. Social Status Persistence Regressions

Explana

Figure 1. Social Mobility Questions in the ISSP Social Inequality Module (2009)



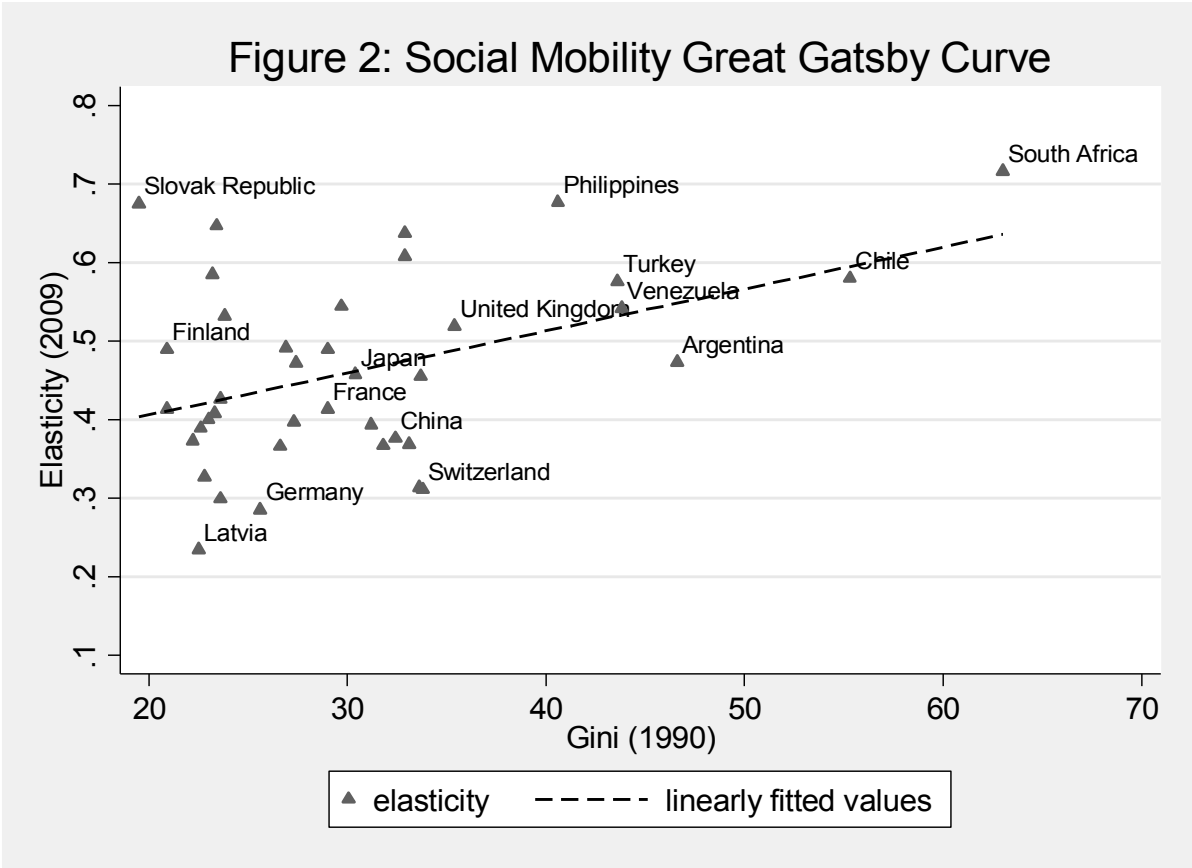


Figure 2: Social Mobility Great Gatsby Curve
Elasticity (2009)
.1
.2
.3
.4
.5
.6
.7
.8
20
30
40
50
60
70
Gini (1990)
South Africa
Slovak Republic
Philippines
Turkey
Chile
Venezuela
United Kingdom
Finland
Argentina
Japan
France
China
Switzerland
Germany
Latvia
elasticity
linearly fitted values