EXTEND ABSTRACT FOR THE 2009 RC28 MEETING IN BEIJING

Is Persistent Inequality a Mirage?
Educational Opportunity over the Long Haul in 13 Societies

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Background

Shavit and Blossfeld (1993, SB93 henceforth) is one of the rare hits for an edited volume in sociology. Of the seven central findings identified by SB93, five deal with the persistence of inequality. Indeed, the most central thesis highlighted in the title of the book is about the "virtual stability" of transition-specific inequality of educational opportunity (IEO) in 11 of the 13 societies, including former socialist states and those that had undertaken major educational reforms, except for declining IEO in Sweden and the Netherlands. In light of the massive educational expansion that had taken place in most countries over much of the twentieth century, it might be natural to expect a considerable reduction of IEO in most countries. Yet this common sense prediction is contradicted by the thesis of persistent inequality. To say the least, the thesis is a provocative sociological generalization.

However, the methodological core of the book has attracted penetrating criticisms a decade ago, most notably from Cameron and Heckman's widely cited article (1998) that goes a long way to undermine the methodological foundation of SB93 and reanalyzes the American case with a more extensive set of data. If the transitions modeling framework is inherently inflicted by dynamic selection bias, all previous results are potentially misleading and should be reanalyzed as Cameron and Heckman did for the U.S. To our surprise, results of the other countries have yet to be carefully reevaluated by adjusting for selection bias.

The recent study of eight European countries by Breen, Luijkx, Müller, and Pollak (2009, AJS) offers the first compelling theoretical and empirical challenge to the thesis of persistent inequality. Breen et al. show that one of the critical factors that appears to have undermined the results and misguided the conclusion of SB93 is the sample size of most countries (at least for the European countries) are in effect too small to reveal the underlying reduction of IEO. Table 1 is an overview of the SB93 samples.

Objectives

The proposed paper takes another major step toward addressing the sample size and methodological problems that inflict the results and conclusion of SB93. The paper is guided by the following main objectives:

1. Re-examine the 13 societies of SB93 with adjustment for dynamic selection bias.
2. Because the results are massive and complex, we focus on the central question of whether there is any overall change in the IEO for each of the 13 societies. To this end, we further focus on an overall index of IEO while also attending to its two key components—parental education and father's occupational status.
3. Despite the need for parsimony, there are compelling reasons to expect that the trend in IEO may substantially differ across schooling transitions. One of our objectives is to therefore to detect the presence of any such interaction.

Data and Method

The data source is an extract (dated August 6, 2008) from the International Stratification and Mobility File (ISMF) created by Ganzeboom and Treiman.[1] Constantly being updated and expanded, the ISMF is a unique resource for comparative stratification research. It is not only based on hundreds of nationally representative surveys from over forty countries, it imposes order and comparability on the diverse source files. All core but often idiosyncratic variables (such as occupation and education) have been highly harmonized in when a data source is incorporated into ISMF. All occupational codes have been mapped into ISCO68 and ISCO88 before converting into the ISEI metric of occupational status.

We restrict attention to respondents aged 25-64 at the time of a survey and cohorts 1900-1980. For smoothness, we define cohorts in 10-year groups. There are up to eight cohort groups for each of the 13 societies. We have few observations with "No Education" or "Incomplete Primary". So we further restrict attention to just four schooling transitions:

1. From Complete Primary to Lower Secondary and up.
2. From Lower Secondary to Higher Secondary and up.
3. From Higher Secondary to Lower Tertiary and up.
4. From Lower Tertiary to Upper Tertiary.

To implement the Cameron-Heckman correction for dynamic selection bias with cross-sectional data, we apply a latent-class logit regression model, stipulating two and three probability masses as the basis of nonparametric approximation for the stable component of unobserved heterogeneity. A recent simulation study has demonstrated that the method works remarkably well for cross-sectional data (Tam 2008). All model parameters are free of the cohort-and-transition-specific opportunity for promotion in the usual sense of margin-free parameters.

Basic Findings

1. ***Adjustment for Bias***:
   - To our pleasant surprise, adjustment for dynamic selection bias in general does not

[1] See http://home.fsw.vu.nl/hbg.ganzeboom/ISMF/ for an introduction to the database. Table 2 here presents a comparison of sample size for each society.

alter any of the qualitative results; both the life-cycle and cohort trends in IEO remain intact. Even though Cameron and Heckman (1998) correctly identifies a genuine problem of bias, the impact of the bias in the context of our 13 countries proves to be quantitatively minor and qualitatively inconsequential (Figure 1).

- Life-cycle dynamics (IEO across transitions): Life-cycle decline is real. The widely observed phenomenon of declining IEO from low to high educational transitions is not a statistical artifact of dynamic selection bias.

2. ***Intercohort Trend***: Figure 2 compactly summarizes the central results for the thesis of persistent inequality.
   - As far as our index of total family effects is concerned, persistent inequality is hardly the norm for most societies in the twentieth century.
   - Intercohort stability is by and large absent wherever we look: IEO at the top transition, bottom transition, or the average transition.
   - In particular, the trend of most people of a society is better reflected by the trend of IEO for the average transition, which has been declining for almost all cases.
   - Given the sequential nature of these transitions, any person reaching transition K would have passed transitions K-1, K-2, and so on. If we zoom in on the "average transition" experienced by a typical person within each cohort, the cumulative experience of IEO as a person travels from the bottom to the average transition can be represented by the shaded area. For most societies, such cumulative experience of IEO has also been in decline.

Additional Findings

3. ***Convergent IEO***: The interaction between transition and cohort trend of IEO is both large and variable across societies.
   - This is reflected in the pervasive long-term convergence of IEO for the highest and lowest transitions.
   - The exceptions are Japan (divergence) and Taiwan (parallel).
4. ***Components***: By comparing the results for total family effects (Figure 2) with those for father education (Figure 3a) and SEI effects (Figure 3b), we can see that the total family effects mainly reflect the effects of father education, not father's occupational status.
5. ***Exceptions***:
   - Contrary to the findings of SB93, the decline of IEO for Sweden and the Netherlands are not exceptional. The results for these two cases are very much in line with most of the other cases here.
   - As it turns out, Japan and Taiwan (a colony of Japan for most cohorts) are deviant in some notable ways—such as the rise of IEO for the bottom transition.

Conclusion

Our central results are starkly contrary to the thesis of persistent inequality present in the previous literature (except for Breen et al. 2009). However, the basic result on selection bias is highly reassuring: it affirms the pervasive finding of declining IEO across transitions in the previous literature.

Our results are credible for at least two reasons. First, the results are based on much large samples and more diverse data sources for each society. For instance, the analysis of Taiwan in SB93 is based on a single survey of about 1000 men (no women) whereas the new analysis is based on a pooled analysis sample of about 40,000 men and women. The pooling of diverse data sources also tends to smooth out idiosyncratic problems of individual data sources. Second, we impose parametric parsimony in all of our analysis. The conclusions are therefore much less vulnerable to idiosyncratic patterns from small N analyses and/or the subjective synthesis of a large number of parameters within and between societies.

References

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Tam, Tony. 2008. “Accounting for Dynamic Selection Bias in Education Transitions: A Large-sample Evaluation of Alternative Estimation Strategies.” Presentation at the conference on Social Inequality and Mobility in the Process of Social Transformation, RC28 of the International Sociological Association, Brno, Czech Republic, May 15-17, 2008.

Table 1. A Brief Overview of SB93 Samples

Country	Authors	Sample	ISMF +=has	Cohorts	Age	Fathers' Occ	Fathers Ed	N	Transi-tions	OLS Trend
CSK	Mateju	SCSC, 1984	+	1918-1957, 9 years wide		EGP5	4 levels	6000	2	Some
ENG	Kerckhoff & Trott	Oxford Study, 1972, four cohorts, men	+	1913-1962, 10 year wide (4)	20-59 men	SIOPS	Years	7626	3	No
GER	Blossfeld	GSOEP, 1984-1988		1916-1965, 5 year wide (10)		Wegener Prestige	Average duration	4199	4	No
HUN	Szelenyi & Aschaffen-burg	SMLH, 1983	+	1911-1960, 10 years wide (5)	21-72	SIOPS	Years	24824	5	Yes, for men only
ISR	Shavit	Mobility Study, 1974 and Political Attitudes Study, 1988. Arab samples.	+?	1930-1970, 10 year wide (4)		SEI	3 levels	2579		No
ITA	Cobalti & Schizzerotto	ISM, 1985	+	1920-1961, 14 years wide (3)		EGP, SEI	4 levels	4200	3	Only FED
JAP	Treiman & Yamaguchi	Japanese Stratification Study, 1975. Men only.	+	1906-1955, 10 years wide (5)	20-69 men	SIOPS	Years	2100	3	Yes, FED
NET	De Graaf & Ganzeboom	10 surveys, 1970-1987	+	1891-1960, 10 year wide (7)	>25	SEI / EGP	4 levels	11244	3	Yes
POL	Heyns & Bialecki	Social Structure and Mobility, 1987	+	1920-1969, 10-17 years wide (4)	21-65, 21-60	SIOPS, EGP9	Years	5434	4	no
SWE	Jonsson	ULF, 1976-1987		1902-1961, 9 year wide (7)	26-74	EGP6	5 levels	17276	4	Only Focc
SWI	Buchman & Charles	Career Study, 1989. Two Swiss-German cohorts born 1950 and 1960		1950-1960, 3 years wide (2)	30, 40	SIOPS	Years	1931	5	No
TAI	Tsai & Chiu	Island wide survey, 1988. Men only		1919-1968, 11-15 years wide (3)	men	SEI	Schooling	988	4	Yes
USA	Hout, Raftery & Bell	GSS, Experienced Labor Force	+	1905-1954, 10 year wide (6)		Siegel Prestige	5 cats	8876	4	Yes

Table 2. Sample Size Comparison: ISMF vs. SB93

CZE	ENG	GER	HUN	ISR	ITA	JAP
13,068	**10,404**	**31,518**	**83,806**	**12,714**	**36,520**	**8,473**
vs.	vs.	vs.	vs.	vs.	vs.	vs.
6,000	7,626	4,199	24,824	2,579	4,200	2,100
NET	POL	SWE	SWI	TAI	USA	
61,756	**76,625**	**8,532**	**5,547**	**39,977**	**57,880**	
vs.	vs.	vs.	vs.	vs.	vs.	
11,244	5,434	17,276	1,931	988	8,876	

Figure 1a. Partial FED Effect across Transitions for Oldest (0) & Youngest Cohorts (1)

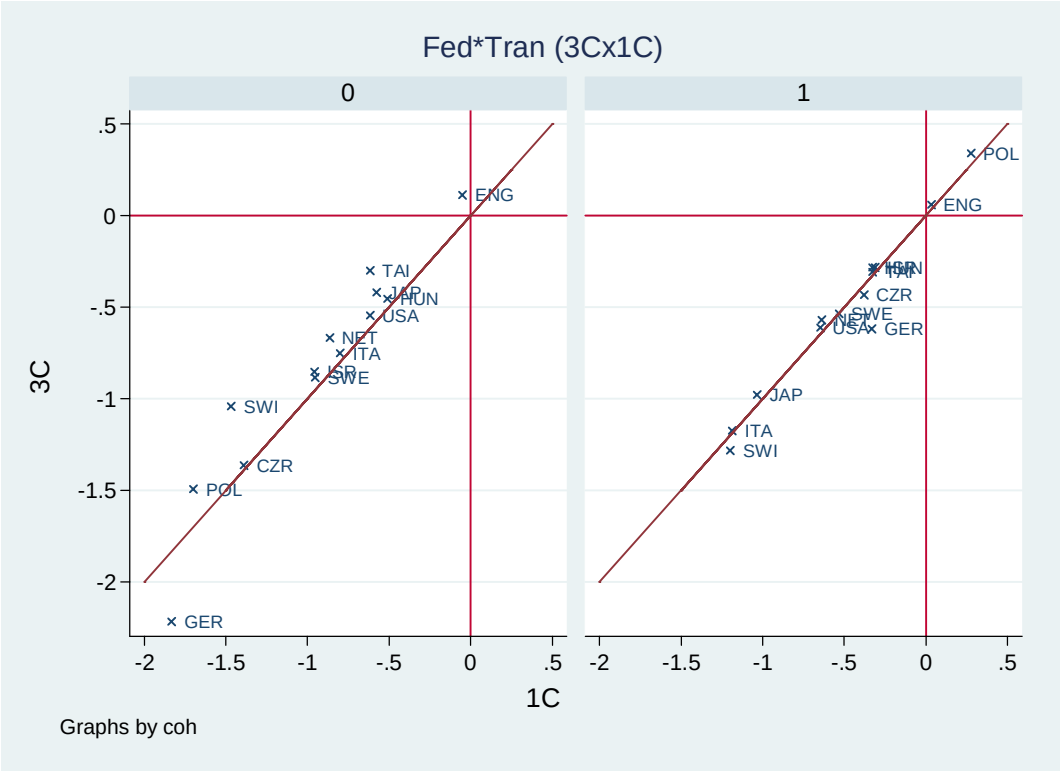

Figure 1b. Partial FSEI Effect across Transitions for Oldest (0) & Youngest Cohorts (1)

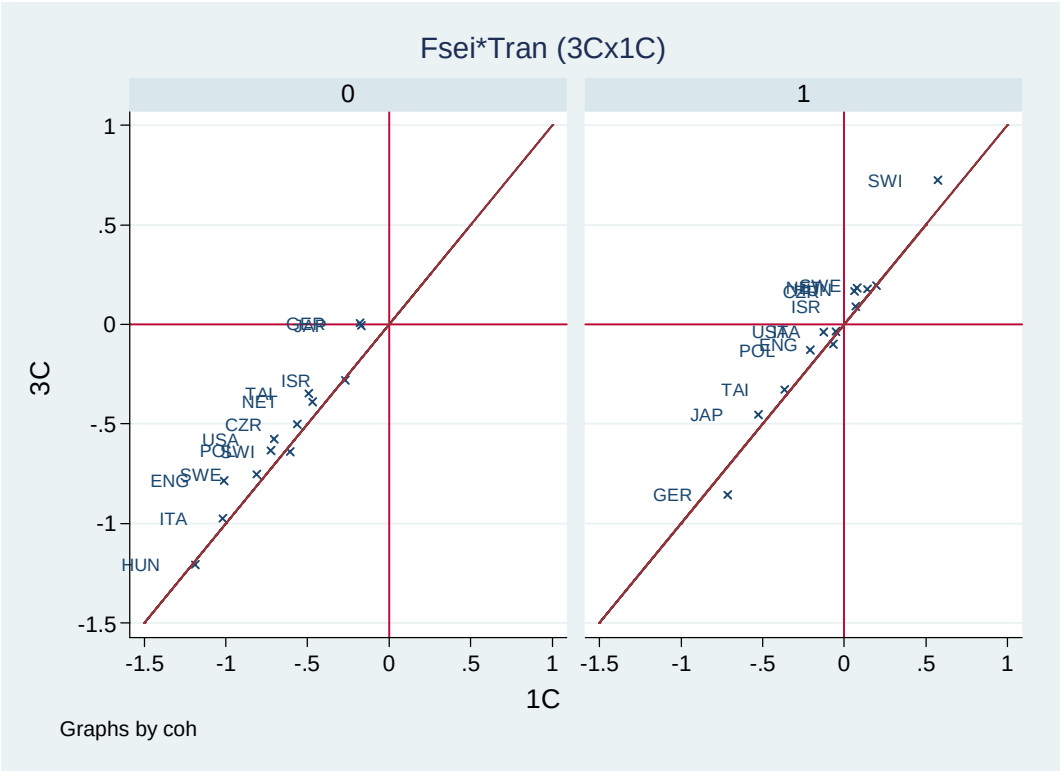

Figure 1c. Partial FSEI Effect across Cohorts for Lowest (0) & Highest Transitions (1)

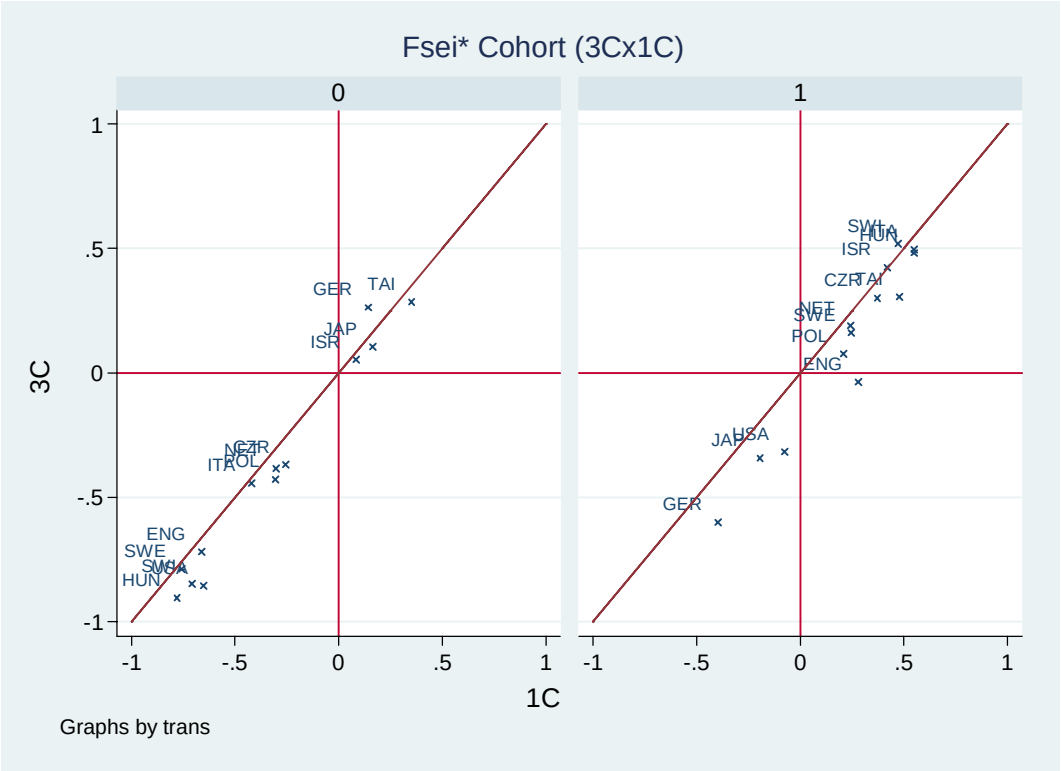

Figure 2

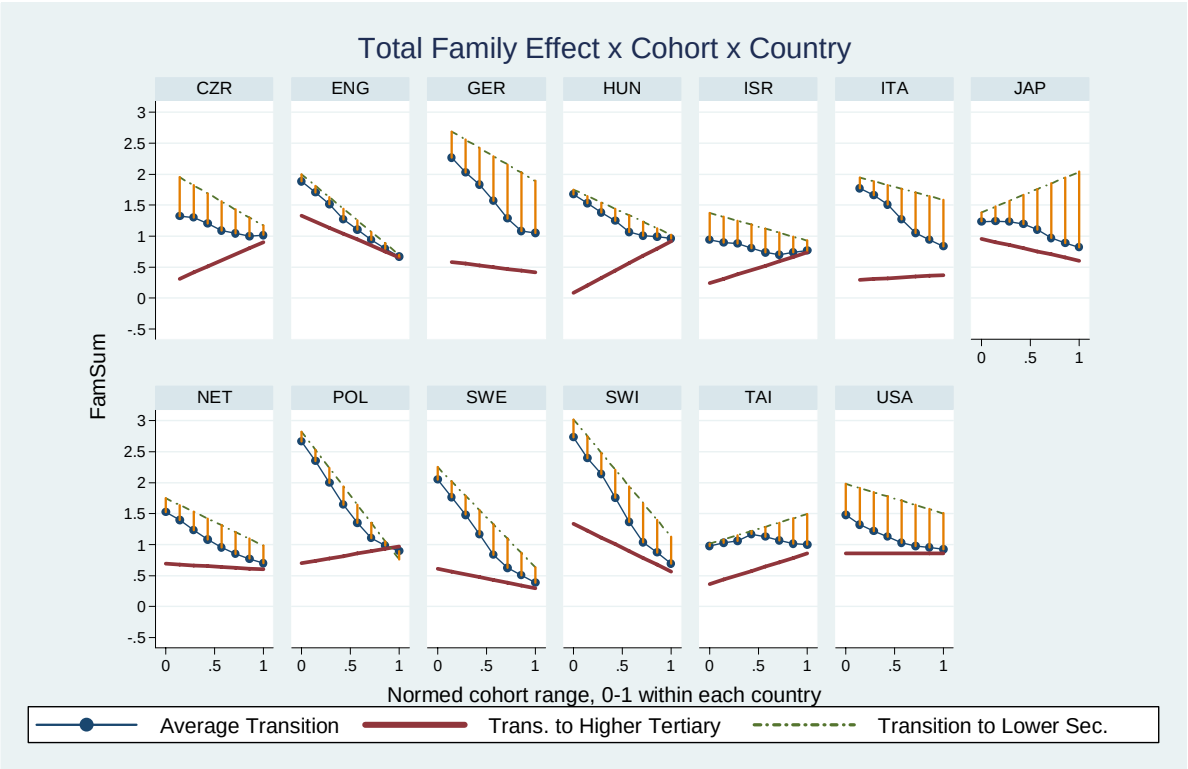

Figure 3a

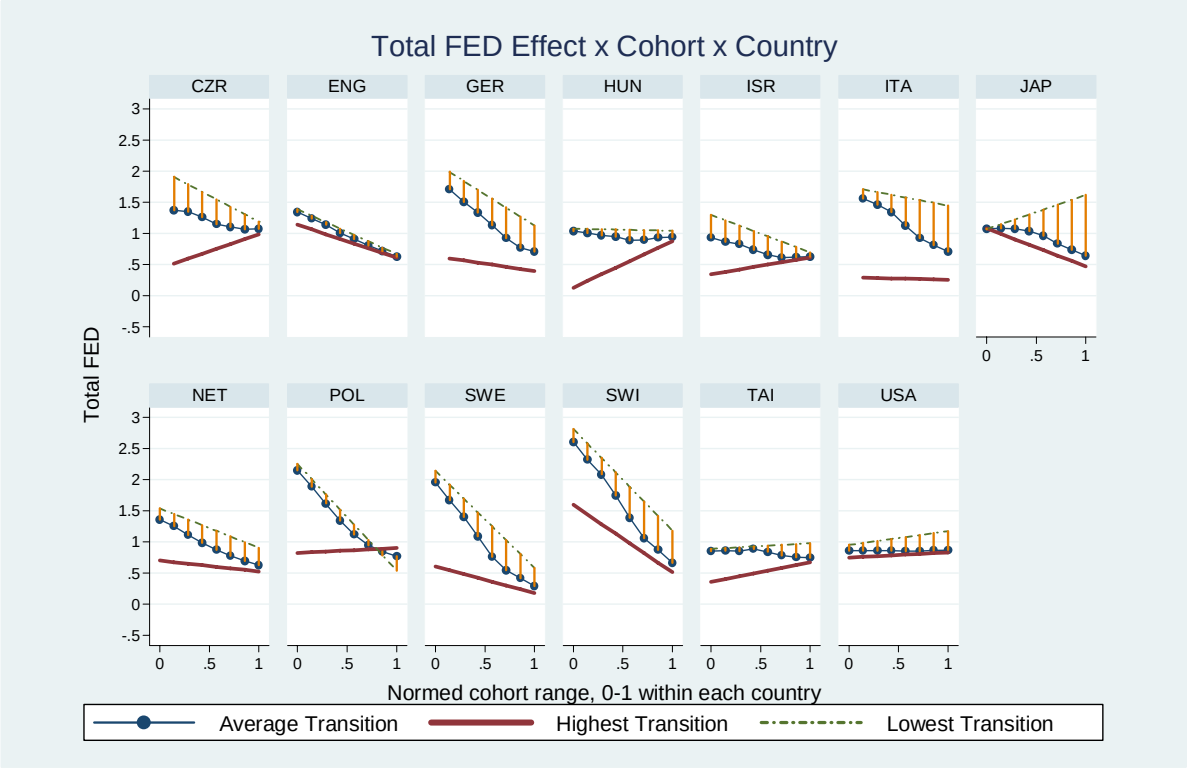

Figure 3b