Economic Freedom and Social Capital: Pooled Mean Group Evidence

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Abstract

This paper uses annual US-state level data from 1986 to 2004 and pooled-mean group estimation based on Pesaran et al. (1999) to examine whether economic freedom influences social capital. We find economic freedom has a negative effect on our social capital measure. This result is driven by the labor market component of freedom which is indicative of the relationship between labor market freedom and Olson-type group social capital.

Keywords: Social capital, economic freedom, pooled-mean group estimators
JEL-Classifications: H11, O17, P16

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I. Introduction

Recently, Jackson et al. (2015) investigate the relationship between economic freedom and social capital at the US state level. Despite an existing cross-country literature on economic freedom and social capital, Jackson et al. (2015) is among the first to look at this issue using US data. Using 5 year averaged data, they find using OLS that social capital is negatively related to economic freedom and unrelated to the change in economic freedom, while using System GMM they find no relationship between economic freedom and social capital, and argue that no clear trade-off between social capital and economic freedom appears to exist.

In this paper the same dataset from Jackson et al. (2015) is used to reconsider the relationship with annual frequency data and the pooled-mean group (PMG) estimator developed by Persaran et al. (1999). This allows the long annual frequency time period in the dataset to be taken advantage of. Using an aggregate economic freedom measure, as well as three main components of economic freedom, we find that our aggregate measure of economic freedom has a negative effect on state-level social capital growth using this methodology, however once we consider the components we see this relationship is being driven entirely by labor market freedom. We then tie this result to how labor market freedom affects Olson-type group social capital.

II. Data and Methodology

The data used in this study covers the period 1986-2004 due to the availability of our social capital measure. Our social capital measure was developed by Hawes et al. (2013) and covers the contiguous 48 states. Our main variable of interest is economic freedom, and we use the main economic freedom index developed by Bueno et al. (2012) as well as the three main components used in the construction of the aggregate index: 'size of government', 'takings and discriminatory taxation', and 'labor market freedom'.[1] In terms of controls, these include the Gini coefficient on state income inequality (*gini*); the percentage of a state's population living in a metropolitan area (*metropercent*); a Herfindahl–Hirschman index of racial homogeneity calculated as the sum of the squared percentage of a state population that is white, black and Hispanic (*HHI*); the state unemployment rate (*unemploymentrate*); the state population (*population*); the percentage of residents over the age of 25 with a college degree (*college2*); the log of real state gross product per capita (*logrgspc*) and the percentage of the population that is under the age of 25 (*under25*).

The methodology used in the analysis is the PMG estimator which assumes a long-run relationship of

$$s_{it} = \theta_{0i} + \theta_{1i} f_{it} + \theta_{2i} gini_{it} + \theta_{3i} metro\%_{it} + \theta_{4i} hhi_{it} + \theta_{5i} ue_{it} + \theta_{6i} pop_{it} + \theta_{7i} college_{it} + \theta_{8i} gsp_{it} + \theta_{9i} under25_{it} + \varepsilon_{it} \quad (1)$$

where *i* represents a particular state, and *t* represents a particular time period. It is further assumed that these variables are *I(1)*, and thus ε_{it} is *I(0)*. This is then modeled as an ARDL (1,…1) where

$$s_{it} = \delta_{10i} f_{it} + \delta_{11i} f_{it-1} + \delta_{20i} gini_{it} + \delta_{21} gini_{it-1} + \delta_{30i} metro\%_{it} + \delta_{31i} metro\%_{it-1} + \delta_{40i} hhi_{it} + \delta_{41i} hhi_{it-1} + \delta_{50i} ue_{it} + \delta_{51i} ue_{it-1} + \delta_{60i} pop_{it} + \delta_{61i} pop_{it-1} + \delta_{70i} college_{it} \delta_{71i} college_{it-1} + \delta_{80i} gsp_{it} + \delta_{81i} gsp_{it-1} + \delta_{90i} under25_{it} + \delta_{91i} under25_{it-1} + \lambda_i s_{it-1} + \varepsilon_{it}. \quad (2)$$

This can be rewritten in error correction representation as follows:

[1] The freedom measures used in this study are the federal-state-local measure.

$$\Delta s_{it} = \varphi_i[s_{it-1} - \theta_{0i} - \theta_{1i} f_{it} - \theta_{2i} gini_{it} - \theta_{3i} metro\%_{it} - \theta_{4i} hhi_{it} - \theta_{5i} ue_{it} - \theta_{6i} pop_{it} - \theta_{7i} college_{it} - \theta_{8i} gsp_{it} - \theta_{9i} under25_{it}] + \delta_{11i}\Delta f_{it} + \delta_{21i}\Delta gini_{it} + \delta_{31i}\Delta metro\%_{it} + \delta_{41i}\Delta hhi_{it} + \delta_{51i}\Delta ue_{it} + \delta_{61i}\Delta pop_{it} + \delta_{71i}\Delta college_{it} + \delta_{81i}\Delta gsp_{it} + \delta_{91i}\Delta under25_{it} + \varepsilon_{it}. \quad (3)$$

where $\theta_{0i} = \frac{\varepsilon_{it}}{1-\lambda_i}$, $\theta_{1i} = \frac{\delta_{10i}+\delta_{11i}}{1-\lambda_i}$, $\theta_{1i} = \frac{\delta_{20i}+\delta_{21i}}{1-\lambda_i}$, …, $\theta_{9i} = \frac{\delta_{90i}+\delta_{91i}}{1-\lambda_i}$ and $\varphi_i = 1 - \lambda_i$.

The PMG approach has a number of features worth highlighting. It allows use of the annual frequency rather than needing to transform the data into 5 year averages (as is commonly done when trying to look at long-run relationships such as this) as the PMG approach models both long run relationships (through the levels part of the equation) as well as short-run relationships (through the differences).

As well, it allows the intercepts, short run coefficients, error correction coefficients (φ_i), and error variances to be different across states, but assumes common long-run coefficients across the states. While it is likely that a long-run equilibrium relationship should be common across states, it is more likely that the short-run dynamics differ, and so this sort of estimator should be able to better pick this up. In competing models such as the standard fixed effects model the data is pooled and only the intercept is allowed to differ across groups, while the mean group estimator estimates the model for each state separately and then calculates an average of the estimated coefficients. The PMG is an intermediate estimator and both pools and averages (Blackburne and Frank, 2007, 198-199). The focus of the PMG method is on the long-run coefficients.

III. Empirical Results

Table 1 details the results of PMG estimation for the main economic freedom measure as well as the three components which make up the main freedom index. Column (1) is based on the main economic freedom index, while column (2) uses the size of government component as its freedom index, column (3) uses takings and taxation component, and lastly column (4) is based on the labor market freedom component as the measure of economic freedom.

<Table 1 Here>

Jackson et al. (2015) concluded that there was no causal long run relationship detected between economic freedom and the Hawes et al. (2013) index of social capital. Column (1) of table 1 shows that the overall measure of freedom garners a significant and negative long run coefficient suggesting a small but negative effect on the long run equilibrium growth of social capital. While this isn't the venue to debate the relative merits of each estimation method it is worth noting a comment in Jackson et al. (2015) regarding the possibility that the social capital index is picking up activities and associations as described by Olson (1982). Olson type group associations don't contribute to the positive type of social capital described by Putnam (2000) and Fukayama (1995) but are rather a part of the so called *dark side* of social capital.

Moving to columns (2) through (4) the three components of the freedom index are considered finding that only in the case of column (4), which uses the labor market freedom component, is there a statistically significant (and again negative) long run relationship between a freedom

component and social capital. The magnitude of the labor market coefficient is also much larger than that seen when using the overall freedom index.[2]

Thus, the negative effect of economic freedom on social capital appears to be coming almost entirely from the labor market freedom component of the index. We take this as evidence that the Hawes index is primarily measuring union related activities which are a type of Olson group engaged in rent-seeking activities. We performed additional PMG regression analysis further decomposing the labor market freedom component into its subcomponents including minimum wage legislation, government employment, and union density. We found that government employment had no effect on social capital and while minimum wage legislation does garner a negative and highly significant coefficient it is quite small in magnitude. The coefficient on labor union density[3] is negative with four times the magnitude as minimum wage legislation.[4]

IV. Conclusion

This paper builds on the recent findings of Jackson, Carden and Compton (2015), using their data to reconsider the relationship between US state level economic freedom and social capital using pooled mean group estimation. The results suggest there is a negative relationship between economic freedom and social capital, but that this is being largely driven by the labor market component of the economic freedom index. Greater economic freedom in the labor market is directly linked to the reduced activities and membership of labor unions. We tie this finding to the notion that increases in economic freedom reduce social capital of the Olson-type, which engages in rent-seeking and non-productive forms of economic activity. Given the lack of research on state level economic freedom and social capital, our results suggest further research on this topic, as well as more work on developing measures of state level social capital is warranted.

VII. Acknowledgments

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[2] Note that in terms of other variables in the analysis, increases in Gini, HHI, and GSP fairly consistently are associated with more social capital, while increases in metropercent and population are negatively associated with social capital.

[3] Keep in mind that the subcomponent based on labor union density is still a measure of economic freedom. Higher union density is given a lower score while lower density get a higher freedom score.

[4] For brevity, we have omitted these regression results. These are available upon request.

Tables

Table 1: Social Capital and Economic Freedom

Dependent variable: social capital growth	(1) Main Index	(2) Government	(3) Taxation	(4) Labor Market
Long-run coefficients				
Freedom	-0.092***	-0.047	-0.014	-0.284***
	(0.033)	(0.034)	(0.012)	(0.031)
Gini	2.439***	1.646***	2.334***	0.880**
	(0494)	(0.430)	(0.495)	(0.366)
Metro %	-1.679**	-3.652***	-2.894***	-2.187***
	(0.727)	(0.956)	(0.769)	(0.718)
HHI	1.666***	3.459***	1.578***	-0.624*
	(0.266)	(0.293)	(0.260)	(0.331)
UE Rate	-0.545	3.538***	-0.339	-0.351
	(0.660)	(0.725)	(0.690)	(0.512)
Population	-2.769**	0.248	-2.449*	-2.809***
	(1.278)	(0.949)	(1.395)	(0.968)
College	1.058**	0.606	0.223	1.323***
	(0.444)	(0.383)	(0.464)	(0.374)
GSP	0.649***	1.544***	0.471***	-0.157
	(0.176)	(0.216)	(0.165)	(0.148)
Under 25	6.493***	5.972***	3.851***	-2.667**
	(1.107)	(1.368)	(1.101)	(1.046)
Short-run coefficients				
Error Correction Coefficient	-1.052***	-0.980***	-1.021***	-1.007***
	(0.047)	(0.052)	(0.047)	(0.057)
Δ Freedom	-0.230	-0.317**	-0.063	0.071
	(0.177)	(0.137)	(0.054)	(0.103)
Δ Gini	-1.927**	-1.816**	-2.056**	-0.563
	(0.868)	(0.912)	(0.886)	(1.059)
Δ Metro %	58.610	-10.847	76.666*	45.607
	(47.150)	(48.578)	(43.312)	(35.215)
Δ HHI	-9.858	-2.288	-2.618	-6.192
	(8.159)	(8.197)	(8.142)	(8.456)
Δ UE Rate	-3.957**	-5.559***	-2.767*	-4.591**
	(1.652)	(1,974)	(1.665)	(2.199)
Δ Population	-149.01	93.160	-79.497	-114.167
	(165.707)	(160.35)	(137.20)	(190.17)
Δ College	-1.024	-1.146	-0.768	-1.082
	(0.764)	(0.797)	(0.724)	(0.831)
Δ GSP	0.342	-0.501	-0.188	-0.352
	(1.145)	(1.145)	(0.793)	(0.834)
Δ Under 25	0.566	12.271	7.447	21.196**
	(10.104)	(12.505)	(11.390)	(9.478)
No. States	48	48	48	48
No. Obs	864	864	864	864
Log-likelihood	781.725	773.351	770.938	779.524

Note: All equations include a constant country-speci…c term. Standard errors are in parentheses.
***, **, and * denotes significance at 1%, 5%, and 10% level, respectively.

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