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Intergenerational income mobility and economic freedom

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Abstract

Numerous studies have found that income inequality reduces the chances of upward relative mobility (i.e., climbing up the income ladder). However, most of this work ignores the role played by institutional quality (namely, economic freedom) in determining mobility and increasing the individual's set of choices. We fill this gap by empirically testing the direct and indirect (through economic growth) impacts of economic freedom on intergenerational income mobility. We find that economic freedom has *both* direct and indirect effects on intergenerational income mobility, while income inequality is a strong predictor of *downward* income mobility. When we incorporate findings about the purely mechanical relationship between inequality and intergeneration income mobility, we find that the legal system and property rights component of economic freedom matters more than inequality. These results suggest that good institutions can increase intergenerational income mobility.

KEYWORDS

economic freedom, income mobility, inequality

JEL CLASSIFICATION

N31, H41, D72, L51

1 | INTRODUCTION

Following the pioneering efforts of Simon Kuznets (1954), economists have dedicated a great deal of attention to the inequality of outcomes and the measurement thereof (Atkinson, 1970, 2015; Auten & Splinter, 2018, 2019; Bowles, 2012; Deaton, 2013; Geloso et al., 2022; Piketty & Saez, 2003, 2007). In the process, many economists, including Nobelists Amartya Sen (1993, 2000) and Gary Becker (with Tomes, 1979), have engaged in discussions of how income inequality is tied to income mobility and, in turn, to inequality of opportunity. They propose a simple mechanism whereby inequality of outcomes in an earlier period reduces the effective choices of the poor in later periods, whereas the rich, in contrast, gain access to more opportunities. The result is that those at the bottom of the income ladder have fewer real options (Becker et al., 2018; Corak, 2013; Nussbaum, 2011; Sen, 1993, 2000), especially in societies in which human capital is more important than physical capital (Galor & Moav, 2004). Simply put, inequality of outcomes in the present means inequality of opportunity later.

The immediate prediction from this mechanism is that, all else equal, unequal societies should have lower levels of intergenerational income mobility as children are trapped in the socioeconomic class of their parents. The use of intergenerational income elasticities is particularly important in order to properly address equality of opportunities. These elasticities are estimated in order to distinguish between absolute and relative mobility. If the income of everyone in society increases, but it increases at the same pace for everyone, there is *absolute* income mobility, but no *relative* income mobility. By using the income of a person's parents to predict his or her income, these elasticities also address *relative* income mobility.[1]

An elasticity equal to zero indicates no correlation between the income of parents and their children, indicating pure equality of opportunity. If the mechanism described above is correct, these elasticities should be smaller (greater) as levels of inequality fall (rise). The available tests that combine these elasticities with inequality do suggest that "[H]igher inequality skews opportunity and lowers intergenerational mobility" (Corak, 2013, p. 80) as it makes a person's family background more influential in determining income (Barone & Mocetti, 2021; Clark, 2014).

Two criticisms have been made of this argument. The first is that the relationship is in part an artifact of statistical mechanics (Berman, 2019; Durlauf et al., 2022; Guner, 2015; Kunbur, 2018). The "mechanical" contribution of inequality to intergenerational mobility has no significant economic meaning. While we will consider the importance of this argument in Section 4.3 of our paper, we are more interested in the second criticism—namely that the role of institutions has been rarely brought into consideration. More precisely, the role of economic freedom (secure property rights and freedom to trade) has been generally ignored (even if it has been considered theoretically).

This casting aside of economic freedom is problematic for many reasons. First, unequal societies can be unequal *because* they are economically unfree—the lack of economic freedoms locks the poor in their initial position. This is a direct effect of economic freedom. Second, there is a robust literature positively associating economic freedom with economic growth (Hall & Lawson, 2014). If economic growth disproportionately increases the opportunities available to the poor (relative to the rich), it could allow them to better escape their initial conditions. By

[1]This is because the estimation of the coefficients is done by regression techniques. In the estimating equations, the dependent variable is a person's adult income and the independent variable is his or her parents' income. The intercept in the regression output captures "the trend in average incomes across generations, due, for example, to changes in productivity, international trade, technology, or labor market institutions" (Corak, 2013, p. 81). The coefficient on a parent's income speaks to movements within the distribution of income (i.e., relative mobility).

working through economic growth, economic freedom could indirectly improve intergenerational income mobility. In this paper, we argue that both these direct and indirect effects are empirically relevant and quite strong in comparison with income inequality.

The existing literature connecting economic freedom to income mobility is limited (Boudreaux, 2014; Callais & Geloso, 2021; Dean & Geloso, 2021). It is also flawed in that it either relies on small samples, non-intergenerational measures or—more importantly—fails to account for the indirect effects of economic freedom. We improve on these works by using a dataset of estimates of income mobility for people born in the 1980s (Narayan et al., 2018). This dataset includes a larger number of both poor and rich countries than previous studies. Combining these data with those of the Fraser Institute's Economic Freedom of the World (henceforth EFW) index, we attempt to measure the direct and indirect effects of economic freedom on intergenerational income mobility in a horse race with income inequality. Given that we are constrained to using cross-sections only, we adapt three separate econometric methods to account for the cross-sectional limitation of our data. We first employ an "indirect" regression method commonly used in the democracy-growth literature (see Tavares & Wacziarg, 2001, for instance). We then follow Gwartney et al. (2006) who measured the direct effect of economic freedom on growth and its indirect effect through investment levels using a similar cross-sectional approach.

We find that economic freedom has *both* a direct and indirect effect on intergenerational income mobility. This is particularly true when examining "legal system and property rights" (LPSR) and "regulatory flexibility," two of the five components of economic freedom. We argue that our results militate for the claim that good institutions can offset some of the lack of mobility seen in high-inequality areas. We also consider our findings' importance relative to the first criticism raised of the purported link between inequality and mobility—namely that the relationship is largely mechanical. We find that economic freedom plays a bigger role than both the mechanical and non-mechanical contribution of inequality.

Our paper is organized as follows: Section 2 will explain how economic freedom can affect intergenerational income mobility. Section 3 will explain the data we employed. Section 4 will present our results while Section 5 will discuss and conclude.

2 | INEQUALITY, ECONOMIC FREEDOM, AND MOBILITY

2.1 | Inequality and mobility

Constructing empirical estimates of intergenerational mobility is relatively straightforward and can be done as follows:

$$\ln Y_{i,1} = \beta_0 + \beta_1 \ln Y_{i,0} + e_{i,t} \quad (1)$$

where $Y_{i,1}$ is the income in adulthood (i.e., at period 1) of a child born in period 0 and $Y_{i,0}$ is the income of his or her parents in period 0. In this setting, β_1 is a measure of elasticity.[2] Higher

[2]The intercept term β_0 captures the income trend across generations which essentially allows normalization to capture *relative* mobility rather than absolute mobility (Corak, 2013, p. 81). We should note that Corak presented the β_1 for an array of 25 countries in relation with inequality. In Appendix S1 (Figure A1), we present the same scatter plot he produced but with the Narayan et al. (2018) dataset used here to show that the pattern is similar and not an artifice of the countries selected.

values of β_1 imply that a parent's income position will be a strong predictor of a child's income position and can thus be interpreted as greater transmissibility. Estimating this specification for a wide array of different countries allows the creation of a new set of data to test how country-level estimates of inequality are related to values of β_1. The available empirical literature (e.g., Boudreaux, 2014; Corak, 2013) has convincingly and repeatedly shown that there is an association between inequality levels and β_1.

From this empirical pattern, strong policy proposals have been advanced. For example, Piketty (2022) has advocated for large increases in income and capital taxation to finance significant expansions in educational services provided by states. The premise behind this proposal is that educational mobility is key for income mobility—a claim for which Narayan et al. (2018) and Chetty et al. (2014) provide additional evidence.

There are two problems with jumping from the observed relationship to the policy proposals. The first is that the relationship between inequality and mobility can result from simple statistical mechanics if one imagines "that persistence across generations follows a first-order autoregressive process. Then, the stationary distribution has a higher variance when persistence is higher" (Guner, 2015, p. 40). This essentially means that inequality and mobility are "related by design" such that a correlation plot between them will show a relation they have by definition rather than a truly relevant economic relation (Berman, 2019, p. 2). This point is not trivial in importance as Berman (2019), using a sample of 36 countries, found that 64% of the variance in intergenerational income mobility is explained by statistical definition rather than by economically meaningful linkages.[3] While this is not a minor issue, we can contend with it after dealing with the second problem, thus increasing the importance of our project.

2.2 | The underappreciated importance of economic freedom to mobility

The second problem is that institutional factors that could enhance relative mobility in spite of inequality are frequently ignored. In fact, the general assumption seems to be that larger governments that are more involved in redistribution will improve equality of opportunity. One rarely finds any mention of the idea that smaller and more constrained states can—on net—improve equality of opportunity by securing higher levels of economic freedom (i.e., secure property rights, limited regulation, free trade, sound money and low taxation and spending levels relative to GDP).

A good illustration of this possibility is provided by the microcosm of the Olympic games (Kufenko & Geloso, 2021). The usefulness of this example hinges on the fact that the innate talent needed to compete in the Olympics is distributed independently of income. However, developing that talent is costly. This is where, they argue, income inequality would come in; it prevents the innately talented lower-income groups from competing in the Olympics. Thus, all else equal, high-inequality countries will send fewer high-performance athletes and will thus win fewer medals. Kufenko and Geloso (2021) found that inequality was a strong negative predictor of Olympic medals. However, they also observed that this effect was absent in high-economic freedom polities (as measured by the Fraser Institute's *Economic Freedom of the World* index). Where property rights are secure, they argue, the appropriation of monetizable

[3]If these criticisms are correct, there is a direct relationship with the second problem discussed below regarding the role of institutions. Indeed, if there is an effect of economic freedom, it will only be made relatively greater if the criticisms are valid. We thank an anonymous referee for this helpful suggestion.

gains from Olympic participation is possible. As such, secure property rights mean that the lure of gains provides a strong incentive to invest in skills. Moreover, low taxes and lightly regulated credit markets acted as complements to property rights by increasing net returns and reducing the cost of financing investments in skills. Thus, countries with higher levels of economic freedom would win more medals (all else being equal), thereby mitigating, or totally offsetting, the effect of income inequality. In other words, economic freedom enhanced the capabilities of the poor more than income inequality reduced them.

Figure 1 depicts the competing effects of economic freedom and inequality on intergenerational income mobility. In this figure, γ_3 represents the effect of income inequality on intergenerational income mobility, which is supposed, whereas γ_1 represents how the absence of legal barriers (i.e., the presence of secure property rights and freedom to trade) allows the poor to follow paths that are neither *de jure*, nor de facto, prohibited by state intervention. This is what we will call the "direct effect" of economic freedom.

There is also an "indirect effect" of economic freedom that works through faster growth and higher income levels. While it is obvious that absolute mobility would be improved by faster economic growth and higher incomes (Berman, 2022; Narayan et al., 2018, p. 15), the reason why relative mobility would also be improved requires some elaboration. A useful illustration can be seen in the case of the demand for educational services. If income elasticities for educational services fall as one moves up in income classes (e.g., Hashimoto & Heath, 1995), rising income levels will entail greater investments in human capital as lower- and middle-income parents invest more in their children's education.[4] As such, rising income levels may actually increase relative mobility in the long-run by increasing the number of choices open to the poorer groups more than for the very rich. In fact, as long as economic growth opens up more channels for the poor to rise up from their initial socio-economic conditions than it does for the rich, absolute income mobility may fuel relative income mobility (Ray & Genicot, 2022).[5] This is depicted by γ_2 in Figure 1.

Economic freedom is intimately associated with income growth and income levels (Hall & Lawson, 2014). It allows for more efficient forms of specialization, increases the productivity of investment in physical capital (Gwartney et al., 2006), promotes investment in human capital (Feldmann, 2017), and encourages business formation and innovation (Powell & Weber, 2013). These relationships are depicted by α_1 in Figure 1, which denotes the effect of economic freedom on the average level of income.[6] As such, the true effect of economic freedom on inter-

[4]This is consistent with some evidence in economic history as with the case of British education during the industrial revolution (West, 1975a, 1975b, 1994), as well as with the idea of the educational Kuznets curve in which initial investments in human capital are made by richer income groups (causing inequality to rise and, in our context, relative mobility to fall) and later by lower income groups (causing inequality to fall and relative income mobility to rise) (Arshed et al., 2018; Guarini et al., 2018; Morrisson & Murtin, 2013; Meschi & Scervini, 2014; Shukla & Mishra, 2019).

[5]This echoes Guëll et al. (2018) who used regional variations in income mobility within Italy to argue that areas with more economic activity enjoyed greater mobility.

[6]This depiction of the indirect effect as $\alpha_1\gamma_2$ is useful because it can also speak to rent-seeking. In this paper, we have preferred to focus on how greater economic freedom allows more room for specialization, business formation, more investments in human capital and fewer legal barriers. This puts emphasis on what share of γ_2 is being determined by economic freedom. However, rent-seeking activities essentially reduce the size of α_1 by reducing economic freedom (del Rio 2021; Gohmann, 2018; Sobel & Garett 2002). More rent-seeking would mean less economic freedom which, in turn, would mean less intergenerational income mobility. For the purposes of this paper, we have opted to leave dealing with rent-seeking for later work.

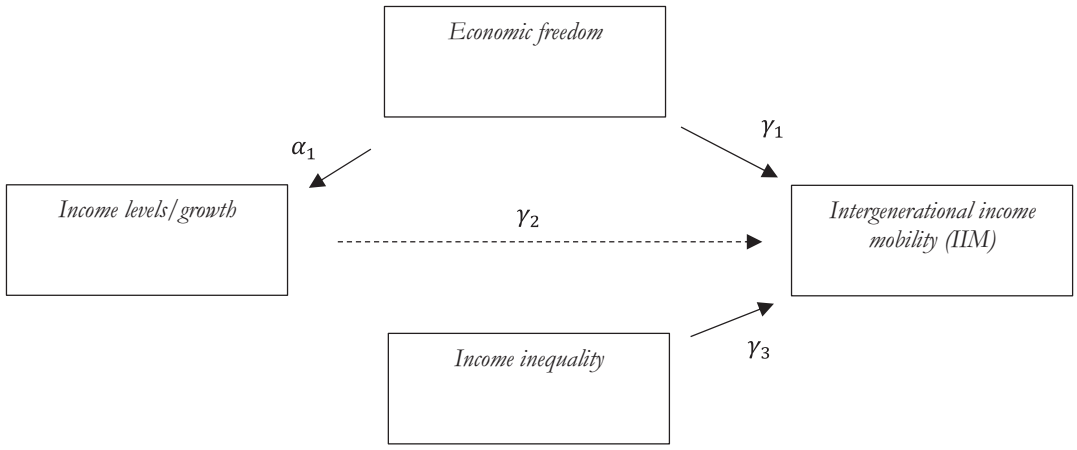

FIGURE 1 The effect of economic freedom on intergenerational income mobility

generational mobility is $\gamma_1 + \alpha_1\gamma_2$. As long as $\gamma_1 + \alpha_1\gamma_2 > \gamma_3$, the effects of economic freedom outweigh those of income inequality on intergenerational income mobility.[7]

The limited attention paid to economic freedom implies that the indirect effect of economic freedom on mobility has been poorly studied. There does exist a significant literature on the connection between income inequality and economic freedom. It suggests that economic freedom increases opportunities for all within the income distribution (Bennett & Nikolaev, 2017; Bjørnskov, 2017; Callais & Young, 2022), but it is less clear as to whether it is skewed favorably toward the poorest (Bergh & Bjørnskov, 2021; Wiseman, 2017), or unfavorably toward them (Carter, 2007). Moreover, this literature does not indicate whether economic freedom increases or decreases intergenerational mobility, as it speaks only to changes in inequality in a given cross-section.[8]

The few studies that try to consider economic freedom and income mobility directly are suggestive, but they possess flaws, as they omit important parts of the effects of economic freedom. To the best of our knowledge, the only empirical attempt to relate economic intergenerational income mobility to economic freedom and run a horse race against income inequality is

[7]To be sure, there is the possibility in Figure 1 that inequality has an effect on economic freedom. Some empirical works suggest such a relationship. This complicates the mechanism studied. Logically, a link from inequality to economic freedom could be labeled as α_2 in Figure 1. Assuming that $\alpha_2 < 0$, the indirect effect of inequality through economic freedom is equal to $\alpha_2\gamma_1 + \alpha_1\alpha_2\gamma_2$. For the indirect effects of inequality on mobility to swamp the indirect effects of economic freedom on mobility would require that, $(|\alpha_2\gamma_1| + |\alpha_1\alpha_2\gamma_2|) > \alpha_1\gamma_2$. However, empirically speaking, our results suggest that $|\alpha_2\gamma_1| + |\alpha_1\alpha_2\gamma_2|$ is a relatively small number that does not affect our conclusions—see footnotes 16 and 17. We also note that a structural equation modeling (SEM) approach would be another way to arrive at the solution we arrive here, but doing so requires important other discussions about other linkages (see notably footnote 6 above) which would be better left as part of a separate paper for us (or others) to undertake.

[8]One way this is the case is the focus in some papers (e.g., Callais & Young, 2022) on income growth per income decile. Having faster growth in the lowest decile than in the highest one measures leaves unclear whether a person in the lowest decile has jumped to higher deciles.

provided by Boudreaux (2014).[9] The discussion of the relationship that we laid out above suggests that this earlier work downplays the importance of the relationship. Boudreaux's specification is

$$IIM_i = EFW_i'\delta + X_i'\beta + e_i \quad (2)$$

where *IIM* is intergenerational income mobility (the coefficient β_1 in Equation (1)) and *EFW* is the measure of economic freedom. Using the same dataset of 25 countries as Corak (2013), Boudreaux found that *EFW* improved intergenerational income mobility. The problem is that the matrix X, the set of relevant control variables, includes income levels. Under the logic embedded in Figure 1, controlling for income understates the benefits of economic freedom by capturing only the effects of the absence of legal barriers (γ_1 in Figure 1). The effect of economic freedom *through* income levels and income growth is not captured ($\alpha_1\gamma_2$ in Figure 1). This means that Boudreaux's δ is downwardly biased, suggesting that the case for economic freedom in securing greater intergenerational income mobility has been understated and needs to be assessed further.

3 | METHODS AND DATA

3.1 | Methodology

To provide our assessment of the effect of economic freedom on intergenerational income mobility, we rely on a newly available cross-section of intergenerational income elasticities provided by the World Bank (Narayan et al., 2018) which we will detail below in Section 3.2. However, because the data are cross-sectional and because we argue for the need to properly estimate the total effect of economic freedom, we must discuss methodology before discussing the data employed.

The issue with using a cross-section is that it limits the ability to investigate the logic highlighted in Figure 1. This is essentially because Figure 1 resembles a mediator bias problem (Bailey, 2019, p. 237; Cox et al., 2013) as income variables act as a form of post-treatment variable that absorbs the effect of economic freedom on intergenerational income mobility. Because of the cross-sectional nature of the data, we have few options to remedy this problem. We embrace three methods in an attempt to better understand the role of economic freedom (and its components): (i) an "indirect approach" and (ii) the two approaches in Gwartney et al. (2006) that rely either on fitted values or on residuals from other regressions. We discuss them in further detail below.

[9]There are other works on mobility and economic freedom such as Dean and Geloso (2021). However, that paper uses subnational indexes of economic freedom (from Canadian provinces) that have no components for property rights—something for which there are important international variations. Moreover, it uses measures of relative mobility by short time windows (5 years rather than intergenerational). There is also Callais and Geloso (2021), but most of their work is based on an arbitrary measure of "social mobility." Moreover, their econometric testing is not as extensive, as they do not try to run a horse race between inequality and economic freedom (only Boudreaux, 2014 does so). Most importantly Callais and Geloso (2021) suffer from the same problem as Boudreaux (2014) with regard to the indirect effect of inequality—see more below.

3.1.1 | Indirect approach

We follow the approach used in Tavares and Wacziarg (2001), who measured the impact of democracy on economic growth. As they point out, previous studies focus on the direct effect of democracy on growth and simply include other growth-determining controls. However, democracy could impact growth through other channels that then influence growth. To disentangle things, they run a two-step regression. First, they regress democracy (separately) on factors such as human capital, income inequality, and political instability. They then estimate a growth regression with each of the same dependent variables from the first step, but as explanatory variables instead. We use one example from their paper to illustrate the impact of democracy on growth via human capital. They find that a one-point increase in democracy improves human capital by 0.4363 points; and a one-point increase in human capital increases growth by .5669 percentage points. Therefore, a one-point increase in democracy increases growth by 0.2474 (0.4363 multiplied by 0.5669). We follow this approach and estimate economic freedom and its components on GDP per capita (logged) and then estimate the impact of incomes on income mobility. The total impact of economic freedom on mobility, then, is the coefficient from the first regression multiplied by the coefficient in the second regression. As such, our first step will be to estimate

$$Y_i = EFW_i'\delta_1 + X_i'\beta + e_i \tag{3}$$

followed by the step of estimating

$$IIM_i = Y_i'\delta_2 + X_i'\tilde{\beta} + e_i \tag{4}$$

where Y_i is income per capita in a given country. The product of δ_1 and δ_2 is the effect of economic freedom on intergenerational income mobility through income levels and income growth. This captures the $\alpha_1\gamma_2$ mechanism in Figure 1. There are, however, two key limitations with this approach. First, it fails to capture the effect of the absence of legal barriers to upward mobility. This means that we need a separate regression similar to that of Boudreaux (2014, see specification 2) who only estimated the direct effect of economic freedom. This will allow us to obtain the sum $\gamma_1 + \alpha_1\gamma_2$ (where $\alpha_1\gamma_2 = \delta_1\delta_2$ from specifications 3 and 4).

Second, and more importantly, statistical significance tests cannot be used on the final result, but can only be used for each estimation separately. As a result, we must employ a second method to assess the reliability of the result we obtain. This is why we also employ what we will label as the Gwartney approach.

3.1.2 | Gwartney approach

Gwartney et al. (2006) analyzed how economic freedom related to economic growth. Their problem was that the neoclassical growth model implies the necessity to include investment as a control variable for changes in the capital stock. As investments are also affected by economic freedom, regressions of economic freedom on growth rates that include investment as a control mute the coefficient of economic freedom. All that is captured is the effect of economic freedom on investment productivity net of the effect of economic freedom on investment levels.

To circumvent this problem, they used two approaches. The first was to estimate the effect of economic freedom on investment. They then used the fitted values from that regression in a separate specification where growth rates were the dependent variable. The second was, again, to estimate the effect of economic freedom on private investment. However, rather than using the predicted values, they used the residuals in the second regression with growth rates as the dependent variable. The assumption was that these residuals represented the variation in private investment not correlated with EFW (or the other variables used). By using these residuals, the variations in private investment associated with cross-country differences in EFW were captured.

We use the steps proposed by Gwartney et al. (2006) whereby the effects of economic freedom on income (Y_i) will be estimated first:

$$Y_i = EFW_i'\delta_1 + e_i \tag{5}$$

From this regression, we extract the fitted values of income $\left(\widehat{Y}_i\right)$ and the residuals $(\widehat{e}_i)$ and use them as independent variables on intergenerational mobility in two separate regressions:

$$IIM_i = \widehat{Y}_i'\delta_2 + X_i'\tilde{\beta} + e_i \tag{6}$$

$$IIM_i = \widehat{e}_i'\delta_3 + X_i'\tilde{\beta} + EFW_i'\tau + e_i \tag{7}$$

3.1.3 | The economic freedom Index's components

A last methodological issue must be discussed before discussing data. Not all components of economic freedom indexes work in the same direction of improving intergenerational income mobility. The most frequently used index, the Fraser Institute's EFW, has five components that go from 0 (least free) to 10 (most free): (1) size of government; (2) legal structure and security of property rights (LSPR); (3) sound money; (4) freedom to trade internationally; and (5) freedom from regulation. Under the first component, smaller governments (as a share of GDP) get higher scores.

However, it is not clear whether higher scores (i.e., smaller government) are related to stronger or weaker intergenerational income mobility. Some governmental actions can improve mobility: funding of primary and secondary education (Herrington, 2015); funding of early childhood interventions to improve cognitive skills (Nussbaum, 2011, Appendix A) and funding of health initiatives (Nelson & Fritzell, 2014). However, the net effect is ambiguous as these fiscal transfers require taxation. For example, higher tax rates might reduce the incentive to invest in human capital (Feldmann, 2017) thus reducing mobility. This ambiguity means that using the entire EFW causes estimation problems and it is why some scholars argue that the role of size of government should be either discarded from the indexes of economic freedom (Ott, 2018), or nuanced to account for the differences in what "big states" do (Bergh, 2020). Circumventing this complication motivates our focus on LSPR and freedom from regulation, as well as an average of those components (see "relevant EF" variable in Section 3.2).

3.2 | Data

We rely on the Global Database on Intergenerational Mobility (GDIM) from the World Bank as out measurement of income mobility (Narayan et al., 2018). The data is based on surveys and usually dependent on *predicted* earnings of parents.[10] When possible, permanent income is used in the regression. Most of the time, income at 40 (which is the preferred reference age according to Haider & Solon, 2006) is used. All children are considered and then compared to their "pseudo" parents. This measurement is generated in three steps. First, they estimate an income equation from an older sample that is representative of the current population of parents. Next, the model's coefficients are used to predict parental earnings at the reference age using the retrospective data on parental age and education as explanatory variables. Third, they regress child earnings at the reference age on the predicted parental earnings at the reference age. The coefficient from this step is reported as our income mobility measurement. Higher income mobility comes from a *lower* coefficient in step 3, indicating that one's income is less dependent on the incomes of their parents.

The structure of the income mobility variable forces us to employ two variations on our setup. The first will be to use the latest values of each variable (2018) to estimate the effect of economic freedom on mobility. However, that is somewhat naïve. The database of Narayan et al. (2018) considers income mobility of people born in the 1970s so that income mobility from birth to the present would be a function of the quality of institutions over their lifetime. As such, taking lifetime averages of the variables would be more representative of the effects of economic freedom. The problem with such an approach is that there are fewer observations available. To avoid relying too much on a shrunk-down version of the dataset, we employ both strategies. However, we should note an important downside of the Narayan et al. (2018) which plays against finding effects for economic freedom. Most of the countries with low to mid-ranging economic freedom values (notably in Africa, Central America, South-East Asia, and the Middle East) are not in the dataset of income mobility. As such, high-economic freedom countries are disproportionately represented in our data. Fortunately, given the results discussed below, this means that our findings with respect to economic freedom are likely to be biased downwards.

We use the Gini Coefficients produced by Solt (2020) (scored from 0 to 100, with 0 representing perfect income equality).[11] Solt provides a few different estimates for Gini Coefficients, but we utilize his measurement with respect to disposable income, which is defined as "post-tax, post-transfer."[12] Our measurement of economic freedom comes from the Fraser Institute's *Economic Freedom of the World* (EFW) index (Gwartney et al., 2020). EFW is measured as a simple average of five components already mentioned above. The index is scored from 0 to 10, with higher scores corresponding to more economic freedom. We use the values from 2018,

[10]Especially in developing countries, nationally representative studies that use data from both parents and children are quite rare.

[11]There are other databases for income inequality. The best alternative is World Bank's *World Development Indicators* (WDI) database for inequality. For the sake of robustness, we also ran our specifications with that dataset instead as it is well known that results involving inequality estimates are sensitive to database choice (Holcombe & Boudreaux, 2016). The results we found with WDI are very similar, as is the pattern of significance. To keep our article brief, we provide those results in an Appendix S1 (also available online at https://tinyurl.com/32nrckm8).

[12]See footnote 18 for the relevance of this definition of the measure for our results. We used this measure instead of market income inequality because we needed to assess the effect of redistribution. We note that shifting to market income would, by definition, hurt the "inequality horse" by excluding the effect of transfers and redistribution on intergenerational income mobility.

TABLE 1 Summary statistics

Variable	Obs	Mean	Std. dev.	Min	Max
Outcome					
Income mobility	74	0.516	0.251	0.113	1.095
Economic freedom (relevant)					
EFW (2018)	104	7.220	0.773	5.168	8.821
EFW (lifetime)	104	6.936	0.834	4.727	8.729
LSPR (2018)	104	5.793	1.524	2.665	8.681
LSPR (lifetime)	104	5.651	1.614	2.155	8.794
Regulation (2018)	104	7.323	0.868	4.755	9.013
Regulation (lifetime)	104	6.910	0.828	4.707	8.848
"Relevant" EF (2018)	104	6.558	1.114	4.008	8.847
"Relevant" EF (lifetime)	104	6.280	1.143	3.431	8.690
Income inequality					
Inequality (Solt, 2018)	69	35.619	7.950	23.00	62.600
Inequality (Solt, lifetime)	74	36.081	8.607	23.290	61.458
Potential channel					
GDP pc logged (2018)	103	9.673	1.101	6.932	11.624
GDP pc logged (lifetime)	103	9.331	1.141	6.593	11.358
Controls					
Soviet Union	104	0.231	0.423	0	1
Govt. Spend on Ed (2018)	85	4.536	1.408	1.455	7.912
Govt. Spend on Ed (lifetime)	100	4.310	1.320	1.608	8.502
Life Expectancy (2018)	103	74.860	6.858	54.332	84.211
Life Expectancy (lifetime)	103	69.420	8.692	48.037	80.619
Economic freedom (less relevant)					
Size Gov't (2018)	104	6.796	1.058	4.381	9.423
Size Gov't (lifetime)	104	6.736	1.016	4.607	8.920
Sound Money (2018)	104	8.688	1.135	4.783	9.869
Sound Money (lifetime)	104	8.107	1.271	4.195	9.681
Free Trade (2018)	104	7.498	1.065	4.872	9.440
Free Trade (lifetime)	104	7.286	1.122	4.868	9.480

Note: "EFW" stands for Economic Freedom of the World Index from Fraser Institute. "LSPR" is component two from EFW, which stands for Legal Systems and Property Rights Protection. "Relevant" EF is an average of the LSPR and Regulation components of EFW. EFW is the average of five components: Size Gov't, LSPR, Sound Money, Free Trade, and Regulation.

as well as the "lifetime average EFW." Lifetime average is calculated as the average EFW score for the adult life of the cohort surveyed in the income mobility data (1995–2018).[13] We utilize

[13]EFW provides data every 5 years from 1975 to 2000, and then yearly thereafter. In order to calculate the lifetime average EFW, we interpolate EFW data from 1996 to 1999 in order not to put an implicitly heavier weight on the years after 2000.

the aggregate index, two components regarding (i) LSPR and (ii) regulation, as well as a "relevant index" where we average the scores of those two components. These two have the clearest links to income mobility. A summary statistics table for our measurements of income mobility, economic freedom, and income inequality is found in Table 1.

Our other variables are a dummy variable for being a former socialist country,[14] income per capita (from the Maddison Project Database), and government spending on education and life expectancy at birth (taken from the *World Development Indicators*). Given our data limitations, we estimate our models with both a balanced and unbalanced observation set. In our balanced sample, we use only countries that can be included in both steps of the approach. In the unbalanced sample, we have up to 103 countries that go into (i) deriving the coefficient expressing the relationship of economic freedom and inequality on mobility (in the indirect approach), and (ii) predicting the fitted values of GDP per capita and residuals (in the Gwartney approach). We differentiate the two because in our unbalanced sample, we are able to get a larger sample of countries that go into deriving the impact of economic freedom on mobility. By using these two approaches, we can assess if our results are driven by a smaller sample size, or if they hold true even when using a larger sample of countries.

As such, it is clear that we are running a variety of different regression test specifications (balanced vs. unbalanced, 2018 values vs. lifetime values, total index of EFW vs. subcomponents, indirect approach vs. Gwartney approach). We would normally have preferred a panel of observations. However, being constrained by the cross-section of income mobility estimates, we are forced to rely on this approach of estimating multiple alterations to the main specification in order to assess whether the results are consistent. While far from ideal, this is the best the data allows us to do. Moreover, it is a considerable improvement over the existing papers that connect income mobility to economic freedom in contest with income inequality.[15]

4 | RESULTS

We split up our results section into two subsections: the "indirect route," the strategy used in Gwartney et al. (2006). In each subsection, we focus on: (i) the aggregate economic freedom index, (ii) the component for LSPR, (iii) the component for regulation, and (iv) a generated "relevant index," or an average of (ii) and (iii).

4.1 | "Indirect approach"

As outlined in Section 3.1.1, we first employ the indirect approach which produces the results in Table 2. The full detailed results are available in Appendix A (Supporting information S1) and show that all of the components of economic freedom have an economically meaningful impact on income (lifetime or 2018 values) and that income per capita always has a significant effect on income mobility. Readers should remember that, as per equation (1), a negative coefficient on income mobility is an improvement for children with low-income parents. All the coefficients

[14]We include a dummy variable on ex-Socialist countries to account for the fact that many of these countries had earlier periods of low-income inequality, but as pointed out in Magness and Murphy (2015), many problematic assumptions are used to generate these figures.

[15]See footnote 9 above.

TABLE 2 Summary of indirect approach (intergenerational income mobility)

	2018 (unbalanced)	Lifetime (unbalanced)	2018 (balanced)	Lifetime (balanced)
EFW	−0.093	−0.082	−0.111	−0.091
Size of Gov't	0.033	0.033	0.042	0.033
LSPR	−0.052	−0.046	−0.057	−0.050
Sound money	−0.051	−0.048	−0.063	−0.058
Free trade	−0.068	−0.063	−0.075	−0.069
Regulation	−0.065	−0.064	−0.079	−0.070
"Relevant" EF	−0.068	−0.062	−0.078	−0.067
Inequality	0.018	0.020	0.018	0.020

Note: "LSPR" is area two from EFW, which stands for Legal Systems and Property Rights Protection. "Relevant" EF is an average of the LSPR and Regulation components of EFW. EFW is the average of five components: Size Gov't, LSPR, Sound Money, Free Trade, and Regulation. The coefficients reported here are the result of multiplying the coefficients from two regressions: regressing economic freedom (or one of the components) on GDP per capita (logged), and regressing GDP per capita (along with income inequality and controls) on income mobility. See Tables A1–A4 (Supporting information S1) for the results from these regressions. Note that there are no *p* values associated with these coefficients since the presented results come from the product of two coefficients.

suggest that economic freedom improves intergenerational mobility with the exception of the size of government which works in the opposite direction (i.e., smaller governments mean less mobility). This holds regardless of the specification (balanced or unbalanced, lifetime values or 2018 values).

The most striking feature of the results is the comparison of the effects of inequality and economic freedom. Take, for example, the coefficient for lifetime values of economic freedom (−0.082 in unbalanced and −0.091 in balanced) and those for income inequality (0.020 for both balanced and unbalanced). A one standard deviation change in lifetime values of income inequality changes the elasticity income mobility values by 0.172 (i.e., a reduction) whereas a one standard deviation in economic freedom effects a change of between −0.068 and −0.076. In other words, economic freedom as a whole is close to an offset for inequality.

However, readers should remember that the results in Table 2 capture only the indirect effect of economic freedom on intergenerational income mobility ($\alpha_1\gamma_2$ in Figure 1). The direct effect (i.e., γ_1—the absence of legal barriers) is not included. As such, we used the same approach as Boudreaux (2014) and generated an additional set of results that control for income and thus capture the direct effect γ_1 from Figure 1. In order to keep the article brief, we report these regressions in Appendix B (Supporting information S1). All the coefficients obtained suggest that the direct effect of economic freedom is either beneficial or not different from zero. We then produce Table 3 where we add the direct effects from these regressions to those in Table 2. This gives an idea of the total effect of economic freedom on intergenerational income mobility.[16] The largest increases are for LSPR and "Relevant EF" as the indirect and direct

[16]The effects of inequality appear unchanged across both specifications. This is relevant to the content of Footnote 7 above. Adding or removing income per capita should have a large effect on the coefficient of inequality on intergenerational income mobility, if there was an important indirect effect. However, the coefficient rarely changes by more than small third or fourth decimal points.

TABLE 3 Summary of direct & indirect Approach (intergenerational income mobility)

	2018 (unbalanced)	Lifetime (unbalanced)	2018 (balanced)	Lifetime (balanced)
EFW	−0.122	−0.112	−0.142	−0.121
Size of Gov't	0.047	0.003	0.056	0.050
LSPR	−0.115	−0.117	−0.120	−0.121
Sound money	−0.048	−0.051	−0.060	−0.061
Free trade	−0.015	−0.036	−0.010	−0.042
Regulation	−0.086	−0.097	−0.100	−0.103
"Relevant" EF	−0.089	−0.139	−0.137	−0.144

Note: "LSPR" is area two from EFW, which stands for Legal Systems and Property Rights Protection. "Relevant" EF is an average of the LSPR and Regulation areas of EFW. EFW is the average of five areas: Size Gov't, LSPR, Sound Money, Free Trade, and Regulation. The coefficients reported here are the result of adding the coefficients from two results: the coefficients in Table 2 with the coefficients found in the "direct" approach regressions, which can be found in Tables B1–B2 (Supporting information S1) (a summary of the direct approach can be found in Table B3 (Supporting information S1)). Note that there are no *p* values associated with these coefficients since the presented results come from the summation of two coefficients.

effects are roughly equally large (which is why their values in Table 3 are nearly twice those in Table 2).[17]

4.2 | Gwartney approach

We summarize the findings from the Gwartney et al. (2006) approach in Tables 4 and 5. In Table 4, we report the results from regressing economic freedom (and its components) on GDP per capita for both 2018 and lifetime average values. We also report the coefficients on the impact of fitted values of GDP per capita (using economic freedom to predict this value) on income mobility. (In Appendix B–E (Supporting information S1), these results can be found in columns 1 and 2, respectively). In each case, economic freedom and its components are a statistically significant and economically meaningful predictor of GDP per capita. In all but one case (size of government), economic freedom positively predicts GDP per capita. Using the fitted values of GDP per capita, we find that certain components of economic freedom influence income mobility, and results are sensitive to the time frame (2018 or lifetime values) and dataset (balanced versus unbalanced). When looking at 2018 values of economic freedom and inequality, we find that the fitted values of GDP per capita (when using economic freedom as a predictor) has a strong impact on mobility in both datasets. The same is true for LSPR and "relevant" economic freedom. However, the regulation component is negative (meaning more mobility) and significant for the unbalanced dataset only. In each specification, current *and* lifetime levels of income inequality hurt chances at upward income mobility.

[17]We also replicated the entire Tavares and Wacziarg (2001) exercise to see if there was an indirect effect of inequality through economic freedom (see Footnote 7). We found that while income inequality does hinder economic freedom, the indirect effect is small. For example, the coefficient of 0.018 on inequality in the first column of Table 2 grows to 0.022 if the indirect effect of EFW is included. Results available on demand.

TABLE 4 Summary of Gwartney et al. (2006) fitted values approach

	2018 values		Lifetime values	
	GDP per capita (logged)	Intergenerational income mobility	GDP per capita (logged)	Intergenerational income mobility
Unbalanced dataset				
EFW	1.042***	−0.085***	1.044***	−0.044*
Inequality measure	-	0.019***	-	0.019***
Size of Gov't	−0.368***	0.006	−0.420***	0.031
Inequality measure	-	0.022***	-	0.021***
LSPR	0.582***	−0.121***	0.586***	−0.076***
Inequality measure	-	0.016***	-	0.016***
Sound money	0.682***	−0.064	0.603***	−0.032
Inequality measure	-	0.021***	-	0.020***
Free trade	0.771***	−0.012	0.801***	−0.012
Inequality measure	-	0.021***	-	0.021***
Regulation	0.726***	−0.094**	0.814***	−0.054*
Inequality measure	-	0.019***	-	0.020***
"Relevant" EF	0.761***	−0.118***	0.790***	−0.073***
Inequality measure	-	0.016***	-	0.017***
Balanced dataset				
EFW	1.299***	−0.059**	1.188***	−0.037*
Inequality measure	-	0.019***	-	0.019***
Size of Gov't	−0.528***	−0.036	−0.453***	−0.070
Inequality measure	-	0.020***	-	0.019***
Sound money	0.682***	−0.039	0.732***	−0.029
Inequality measure	-	0.020***	-	0.020***
Free trade	0.846***	−0.010	0.891***	−0.0416
Inequality measure	-	0.020***	-	0.020***
Size of Gov't	−0.528***	−0.036	−0.453***	−0.070
Inequality measure	-	0.020***	-	0.019***
Regulation	0.868***	−0.058	0.909***	−0.056**
Inequality measure	-	0.019***	-	0.019***
"Relevant" EF	0.922***	−0.096***	0.872***	−0.065***
Inequality measure	-	0.016***	-	0.017***

Note: "LSPR" is component two from EFW, which stands for Legal Systems and Property Rights Protection. "Relevant" EF is an average of the LSPR and Regulation components of EFW. EFW is the average of five components: Size Gov't, LSPR, Sound Money, Free Trade, and Regulation. The coefficients reported here are the result of two regressions: "GDP per capita (logged)" is the result from a bivariate regression between economic freedom and GDP per capita (logged). In "Intergenerational Income Mobility" columns, we report results from regressing income inequality and the fitted values of GDP per capita (from the first regression) on income mobility. See Columns (1) and (2) in Appendix D–G (Supporting information S1) for the results from these regressions. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 level, respectively.

TABLE 5 Summary of Gwartney et al. (2006) residuals approach

	Coefficients on economic freedom		Coefficient on inequality	
	2018 values	Lifetime values	2018 values	Lifetime values
Unbalanced dataset				
EFW	−0.110	−0.095	0.018***	0.020***
Size of Gov't	0.018	0.048	0.018***	0.019***
LSPR	−0.084**	−0.068**	0.017***	0.018***
Sound money	−0.048	−0.049	0.017***	0.020***
Free trade	−0.034	−0.050	0.017***	0.020***
Regulation	−0.079	−0.082	0.017***	0.020***
"Relevant" EF	−0.098**	−0.086**	0.017***	0.019***
Balanced dataset				
EFW	−0.125	−0.102	0.018***	0.020***
Size of Gov't	0.027	0.048	0.018***	0.019***
LSPR	−0.086**	−0.068**	0.017***	0.018***
Sound money	−0.060	−0.060	0.017***	0.020***
Free trade	−0.042	−0.058	0.017***	0.020***
Regulation	−0.091*	−0.086	0.017***	0.020***
"Relevant" EF	−0.103**	−0.087*	0.017***	0.019***

Note: "LSPR" is component two from EFW, which stands for Legal Systems and Property Rights Protection. "Relevant" EF is an average of the LSPR and Regulation components of EFW. EFW is the average of five components: Size Gov't, LSPR, Sound Money, Free Trade, and Regulation. The coefficients reported here are the result of two regressions. We first regress economic freedom on GDP per capita (Column 1 in Appendix D–G (Supporting information S1)) and obtain the residuals. We then regress those residuals (which are the parts of GDP per capita that is *not* explained by economic freedom) along with economic freedom and income inequality on income mobility (Column 3 in Appendix D–G (Supporting information S1)). The coefficients on economic freedom are reported from this Column 3 regression; similarly, the coefficients on income inequality are also from this Column 3 regression. ***, **, * indicate significance at the 0.01, 0.05, and 0.10 level, respectively.

Similar results occur for the lifetime components of economic freedom. The coefficients range from −0.044 to −0.076, suggesting high returns in mobility from economic freedom. In each case, lifetime inequality predicts higher *immobility*, with coefficients ranging from 0.016 to 0.021. A standard deviation increase in lifetime inequality corresponds to a decrease in mobility of 55 to 72% of a standard deviation. A similar increase in lifetime EFW and LSPR corresponds to increases in mobility of 15%–25% and 44%–49% of a standard deviation.

In Table 5, however, we report the findings estimates of a model with economic freedom, income inequality, the controls, and the residuals from column 1 (in Appendix D–G (Supporting information S1)). The residuals are the parts of GDP per capita that are *not* due to the impact of economic freedom. This means, when we control for these residuals when regressing mobility on economic freedom, the resulting coefficients capture the full effects of economic freedom ($\gamma_1 + \alpha_1\gamma_2$ in Figure 1). In Table 5, we also report the coefficient on the income inequality measure. Using 2018 values, we find that LSPR and the combined "relevant" components of economic freedom predict upward mobility in both datasets. Regulation, though, is only significant for the balanced dataset. Economic freedom, for both 2018 and lifetime values, is negative, but statistically insignificant. Larger government (lower scores in the

TABLE 6 Partial *R*-squared (Gwartney fitted approach)

Variables	EFW	LSPR	Regulation	"Relevant" EF
Panel a: Unbalanced dataset (2018 values)				
Economic freedom	0.113	0.266	0.087	0.228
Income inequality (non-mechanical)	0.141	0.118	0.131	0.113
Panel b: Unbalanced dataset (lifetime values)				
Economic freedom	0.047	0.142	0.043	0.119
Income inequality (non-mechanical)	0.160	0.126	0.166	0.132
Panel c: Balanced dataset (2018 values)				
Economic freedom	0.079	0.258	0.041	0.196
Income inequality (non-mechanical)	0.147	0.123	0.139	0.119
Panel d: Balanced dataset (lifetime values)				
Economic freedom	0.049	0.146	0.052	0.126
Income inequality (non-mechanical)	0.157	0.124	0.162	0.130

Note: "LSPR" is component two from EFW, which stands for Legal Systems and Property Rights Protection. "Relevant" EF is an average of the LSPR and Regulation components of EFW. EFW is the average of five components: Size Gov't, LSPR, Sound Money, Free Trade, and Regulation. The partial *r*-squared reported are the result of the regression in Column 2 in Appendix D–G (Supporting information S1), where economic freedom is from the fitted values of GDP per capita. Following Berman (2019), we multiply the partial *r*-squared for income inequality by 0.36 (1 − 0.64) to account for the fact that 64% of the impact of income inequality on mobility is purely mechanical. This gives us the partial *r*-squared of the *non-mechanical* portion of income inequality that can impact mobility.

TABLE 7 Partial *R*-squared (Gwartney residual approach)

Variables	EFW	LSPR	Regulation	"Relevant" EF
Panel a: Unbalanced dataset (2018 values)				
Economic freedom	0.075	0.147	0.070	0.118
Income inequality (non-mechanical)	0.118	0.118	0.114	0.114
Panel b: Unbalanced dataset (lifetime values)				
Economic freedom	0.054	0.098	0.063	0.086
Income inequality (non-mechanical)	0.143	0.128	0.141	0.133
Panel c: Balanced dataset (2018 values)				
Economic freedom	0.079	0.140	0.076	0.112
Income inequality (non-mechanical)	0.118	0.118	0.114	0.114
Panel d: Balanced dataset (lifetime values)				
Economic freedom	0.054	0.089	0.062	0.079
Income inequality (non-mechanical)	0.143	0.128	0.141	0.133

Note: "LSPR" is component two from EFW, which stands for Legal Systems and Property Rights Protection. "Relevant" EF is an average of the LSPR and Regulation components of EFW. EFW is the average of five components: Size Gov't, LSPR, Sound Money, Free Trade, and Regulation. The partial *r*-squared reported are the result of the regression in Column 3 in Appendix D–G (Supporting information S1), where economic freedom, income inequality, and the residuals from an economic freedom-income regression are regressed on income mobility. Following Berman (2019), we multiply the partial *r*-squared for income inequality by 0.36 (1 − 0.64) to account for the fact that 64% of the impact of income inequality on mobility is purely mechanical. This gives us the partial *r*-squared of the *non-mechanical* portion of income inequality that can impact mobility.

"size of government" component) relates to lower mobility, but is also statistically insignificant. The remaining two components (sound money and freedom to trade) are negatively, but insignificantly, associated with income persistence. Once again, lifetime income inequality is also strongly correlated to lower mobility. A standard deviation increase in LSPR (2018 values, balanced dataset) corresponds to over half (52%) of a standard deviation increase in mobility. The same increase in income inequality is associated with also over half (54%) of a standard deviation *decrease* in mobility. These variables seem to balance each other out.

4.3 | Mechanical effect of inequality vs. economic freedom

The details from our tests above suggest that economic freedom is a powerful determinant of intergenerational income mobility and that its potency rivals, or exceeds, that of inequality. However, more is needed to determine the relative strength of economic freedom. First, we only relied on standard deviation changes to relativize effects. This is imperfect, which is why we now employ the partial *r*-squared approach which is commonly used in horse races (see notably Bailey & Duquette, 2014).

Second, and more importantly, our assessments in Sections 4.1 and 4.2 are *very* conservative. This is because of the criticism, discussed in Section 2, that a sizable share of the relationship between income inequality and intergenerational income mobility is an artifact of statistical mechanics rather than a true economic relationship. Berman (2019) estimated this share at 64% of the variance in inequality (with respect to income intergenerational mobility). This means that only about one-third of the variance in inequality represents a truly meaningful economic relationship. We can employ this finding by Berman by multiplying the partial *r*-squared on income inequality by 0.36. The resulting proportion is the *non-mechanical* portion of inequality.

The partial *r*-squares were calculated using the same approach as in Table 4 (the Gwartney Fitted Approach) and Table 5 (the Gwartney Residual Approach) and are depicted in Tables 6 and 7. In Table 6, using our unbalanced dataset, we find that LSPR and Relevant EF matters more for mobility than income inequality. However, the aggregate EFW and Regulation components are less important than inequality.[18] This is true for both the 2018 and lifetime values. In our balanced dataset, we find the same results. For Table 7, which corresponds to the residual approach shown in Table 5, we find largely similar results as in the fitted approach. LSPR and "Relevant EF" tend to contribute greater weight to mobility than inequality. The same cannot be said for the entire index and just the regulation component, though.

5 | CONCLUSION

Few studies have empirically connected economic freedom to income mobility. In particular, we are only familiar with three (Boudreaux, 2014; Callais & Geloso, 2021; Dean & Geloso, 2021). We have extended their findings by (i) using a larger dataset than Boudreaux (2014), and Callais and Geloso (2021), (ii) using an international dataset (in contrast with mobility within a country *à la* Dean & Geloso, 2021), and (most importantly) (iii) by adapting the methods used in other studies to measure the direct effect of economic freedom on mobility *and* its indirect

[18]The result for the former is unsurprising, however, since the use of the Solt (2020) database captures the effect of income transfers which are correlated with the size of government component of EFW.

effects through income levels. While our approach is purely cross-sectional, making any causal claims next to impossible, the approach explained in (iii) is a roundabout way to improve on the previous literature given our constraints.

We find that economic freedom has a direct and indirect *upward* effect on intergenerational income mobility. Income inequality is also a strong predictor, but of *downward* income mobility. We argue that our results militate for the claim that good institutions matter in increasing income mobility. This likely speaks to economic freedom as a catalyst for improving mobility. We believe that this is because economic freedom not only increases the set of legal possibilities for economic activity available to individuals, but, by increasing incomes, also increases the set of practical and realistic choices whereby people can better their situations.

Our results could be improved upon in future research by extending the dataset of Narayan et al. (2018) over time to form a panel of birth cohorts. This would require taking the economic freedom measures which are most reliably estimated from 1970 onwards and extending them both further back in time and across a larger number of countries. However, our results should be seen as a crucial call for future research given that social mobility is strongly tied to democratic persistence (Acemoglu et al., 2018; Schotte, 2021) and social cohesion (Suchon & Villeval, 2019).

At the very least, our results showing the positive impact of well-protected property rights and limited regulation should be of great relevance to current public policy discussions.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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