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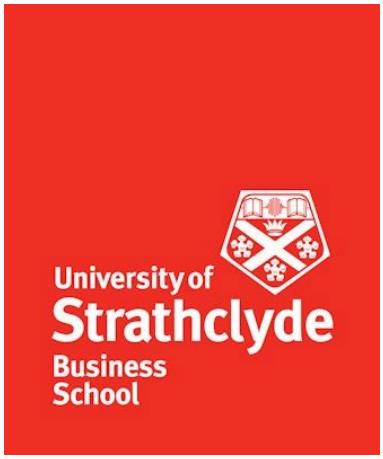

Meritocracy and Inherited Advantage in the United States

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Abstract

We use a model to interpret US regional data on income, inequality, and intergenerational mobility, to produce indices of 'meritocracy' and 'advantage': high meritocracy implies local labour markets accurately reward actual human capital; high advantage implies local labour markets reward class background. The paper then characterises how these derived indices correlate with observable characteristics of regions. We find some intuitive results which correlate with the common understanding of these terms: more meritocratic regions tend to be urban areas with better educational and labor market opportunities, while regions with higher levels of inherited advantage are often marked by more racial segregation, single-parent households, crime, and stagnant economic conditions. There are also some interesting and subtle deviations from such an everyday understanding, such as more meritocratic regions being more unequal with lower social mobility. Finally, we show that there is information content in the model itself: our indices - derived from data on income, inequality, and intergenerational mobility - provide extra explanatory power for voting behaviour in the USA, over and above the data on income, inequality, and intergenerational mobility. We conclude that using our model to interpret the data at the regional level, reveals new insights into regional characteristics.

1 Introduction

Meritocracy, as introduced by Young (1958), describes a society in which rewards are based on individual talent rather than background or 'advantage' in our terminology. While meritocracy is often championed for promoting fairness, and advantage likewise decried, Young (1958) actually introduced the term meritocracy as a dystopian warning, noting that it can contribute to income inequality and hinder social mobility. This mechanism, and this outcome, is well described in our previous paper Comerford et al. (2022) in which we show that both meritocracy and advantage cause inequality and hinder social mobility, though by different degrees and via different channels. In the present paper, we take this model to regional data in the USA, generating inferred series for each location that index its degree of meritocracy and advantage. We show that using our model to interpret the data at the regional level reveals new insights into regional characteristics, and into the meaning of meritocracy itself.

Rich socioeconomic data for the USA at regional and local levels now exist thanks to the work of Chetty, Hendren, Kline, and Saez (2014). At the level of the commuting zone, this data maps well onto the model of Comerford et al. (2022) since this model describes a labour market. Therefore, in this paper we fit the model of Comerford et al. (2022) to data on income, inequality, and intergenerational mobility from Chetty, Hendren, Kline, and Saez (2014). This model fit to data produces two indices, which we label as 'meritocracy' and 'advantage'. Taking the model seriously means that we interpret commuting zones deemed to have a high degree of meritocracy as regions in which local labour markets accurately reward actual human capital; and commuting zones with a high degree of advantage as regions in which local labour markets reward class background.

There are two dimensions therefore of the model fit to the data, which we can characterise as four distinct possibilities for a particular region. A commuting zone can feature a labour market which is:

1. both meritocratic and advantageous, in which actual human capital, and class background, are both rewarded
2. meritocratic but not advantageous, with human capital rewarded
3. advantageous but not meritocratic, with class background rewarded
4. neither meritocratic nor advantageous, with neither feature of an individual particularly well rewarded.

This map from the data on income, inequality, and intergenerational mobility, into the modelled series of meritocracy and advantage, is driven by the model's features, in which: a meritocracy provides more incentives for human capital accumulation, and so is associated with higher incomes than an advantageous society; meritocracy and advantage are both associated with inequality and a lack of social mobility, but a meritocracy has relatively more inequality, whilst an advantageous society has relatively lower social mobility. Highly equal and socially mobile locations in this model, are those locations/labour markets which cannot well identify either human capital differences or class background differences.

Interpreting the indices so derived as actual representations of meritocracy and advantage, does not mean that they actually have anything to do with a common understanding of these terms. They have been derived to best fit a model to data on income, inequality, and intergenerational mobility; and so a commuting zone deemed to be meritocratic for example, may be higher income, with higher inequality, and slightly higher social mobility, than a commuting zone deemed to be advantageous; but how do these indices correlate with the

broad suite of locational characteristics? And would a layperson agree, that a commuting zone characterised by this model calibration exercise as meritocratic, fit this description given an everyday understanding of the word?

The data of Chetty, Hendren, Kline, and Saez (2014) provides a rich set of such locational characteristics, and the next step in the exercise of this paper is to look at the associations of our derived meritocracy and advantage series with these data, across all these characteristics which were, crucially, not used in the derivation of these series. And we find some interesting and intuitive results: more meritocratic regions tend to be urban areas with better educational and labor market opportunities, while regions with higher levels of inherited advantage are often marked by more racial segregation, single-parent households, crime, and stagnant economic conditions. Our layperson would likely approve. Nevertheless, it remains the case that (almost by definition) meritocratic regions are unequal, with lower social mobility. This is consistent with Young (1958), but our layperson may object.

Given the congruence between how we measure meritocracy and advantage across regions, and how regional characteristics line up, we can conclude that we are measuring something real about the regions, for which our labels of meritocracy and advantage are reasonable or apt. But does this say anything beyond providing some summary of the data of Chetty, Hendren, Kline, and Saez (2014)? To conclude this paper, we argue that it does. The characteristics which cluster around the terms meritocracy and advantage, are suggestive of factors which influence voting patterns in the USA. Therefore, our last exercise in this paper is to see how predictive our meritocracy and advantage series have been in presidential elections.

This provides a particularly interesting result. Meritocracy and advantage have been derived using data on income, inequality, and intergenerational mobility; and yet voting patterns are better explained, in terms of adjusted R^2, including meritocracy and advantage alongside income, inequality, and intergenerational mobility. It therefore seems that the model structure itself is adding information to the data on income, inequality, and intergenerational mobility, in terms of this data's association with voting patterns. We conclude that using our model to interpret the data at the regional level, reveals new insights into regional characteristics.

The paper is structured as follows: Section 2 provides background on the relevant literature and introduces the theoretical model used to generate the meritocracy and advantage indices. Section 3 describes the data used in the analysis, with a focus on regional measures of income, inequality, and intergenerational mobility. Section 4 details the methodology employed to calibrate the model and derive the indices. Section 5 presents the core findings, exploring how the meritocracy and advantage indices correlate with regional socio-economic characteristics and voting behaviour. Finally, Section 6 concludes by summarising the key contributions and insights gained from the analysis.

2 Background

2.1 Related Literature

The "Great Gatsby Curve" is the observed positive empirical relationship between inequality and intergenerational persistence in income. Durlauf et al. (2022) provides an overview of many mechanisms by which the Great Gatsby Curve may be derived. The mechanism we use is one whereby income inequality leads to statistical discrimination by firms, who are themselves better able to distinguish the most talented in society in the presence of more varied outcomes. Credit constraints in the provision of education mean that the rich are better able to "purchase" talent for their kids and so, foreseeing the high degree of sorting that their children will face in the labour market, the rich invest more heavily in their children (either

directly, through private education, or indirectly, through Tiebout sorting) and inequality and intergenerational income persistence go hand-in-hand. This also generates the result that a highly meritocratic society (one where talent is identified and rewarded) can also exhibit low intergenerational mobility. The discrimination which is central to our model happens upon entry to the labour market, and has persistent effects, but note that this could happen at college entry or other points at which students are selected based on observables that correlate with talent. For example, Hendricks et al. (2021) describe how an exogenous increase in college admissions post-World War II led to greater selectivity by colleges. In our story, such a change will both lead to greater labour market discrimination and income inequality, and be brought about endogenously by that inequality and discrimination, since they raise the returns to signals on human capital and will therefore incentive college attendance.

This paper builds on work carried out in Comerford et al. (2022), the model from which is discussed in section 2.2. In that paper, we used OECD data on educational expenditure and income inequality, and data from Corak (2013) on intergenerational mobility, to fit the model to cross-country data. However this international data is problematic in that the interpretation of what the data is may vary from country to country, especially with respect to educational spending. We therefore labelled our numerical exercise in Comerford et al. (2022) as an "illustration" and in no way claimed to be testing the model. Below, we use a consistent data set across a relatively constant institutional set up i.e. within a single country, the USA, using the data from Chetty, Hendren, Kline, and Saez (2014). This allows us to go beyond Comerford et al. (2022) and test the model, as well as gaining some sense of what seems to associate with (if not cause) meritocracy and the inheritance of advantage in the USA.

Chetty, Hendren, Kline, Saez, and Turner (2014) and Chetty, Hendren, Kline, and Saez (2014) look respectively at the time series and cross-sectional distribution of intergenerational mobility and inequality in the US. In the time series data, Chetty, Hendren, Kline, Saez, and Turner (2014) find that intergenerational mobility was remarkably stable in the US in the second half of the twentieth century despite increasing inequality. A partial explanation of this is that the change in inequality was concentrated amongst those at the very top of the income distribution, and this inequality at the extremes is much less closely related to intergenerational income persistence in general. Our paper more closely follows Chetty, Hendren, Kline, and Saez (2014) which looks at the spatial distribution of inequality and intergenerational mobility across US commuting zones. They find significant variation in mobility across the US which is correlated with inequality, as per the GCC, but also residential segregation, access to good schooling, social capital and family stability. We look at the extent to which meritocracy and inherited advantages are correlated with the Chetty, Hendren, Kline, and Saez (2014) covariates.

We also look at the extent to which meritocracy and inherited advantages predict voting patterns across the US, specifically the Democract/Republican vote in presidential elections. Piketty (1995) models how beliefs about mobility become self-fulfilling; where individuals believe that upward mobility is not down to individual effort, they favour higher taxation, which reduces the incentive to provide effort. This situation is described as a "left-wing dynasty". Bénabou and Tirole (2006) provide a similar set of self-fulfilling beliefs in their "European" and "American" equilibria. In the data, we find that such a left-wing (or European) dynasty is correlated with higher meritocracy. We might have assumed the opposite – that meritocracy describes a world in which anyone can succeed through hard work, and therefore taxation is low – but our previous paper describes why people's experience of meritocracy may be quite different to this, and correlated with lower mobility and higher taxation.

The analysis of Bénabou and Ok (2001) on the Prospect of Upward Mobility (POUM)

also explains that less redistribution will be demanded where mobility (specifically upward mobility) is more likely. This implies that areas where people's experience or expectations lead to beliefs of high mobility would tend to vote for less redistribution; we find that meritocracy is associated with more left-wing voting – exactly the opposite.

Alesina and La Ferrara (2005) provide empirical support for this (see also Alesina, Stantcheva, et al. (2018)). They state (Alesina and La Ferrara 2005, p.929):

> those who believe that opportunities are unequal (e.g., because not everyone can get an education or because family background plays a key role) favor redistribution, possibly as a way to correct for such bias in the mobility process.

Such an unequal world is implied by *high* levels of meritocracy, both in our model, and in the support for the Democratic party in more meritocratic areas in our voting data. The "fairness" of the system is not evaluated on the extent to which rewards are based on talent (or at least perceived talent) but on the process by which that talent is acquired. Under our (and the original) conception of meritocracy, increasingly rewarding talent further skews the playing field towards those most readily able to acquire it (i.e. those with richer parents).

2.2 Model

The theoretical model which we are fitting is explained in detail in Comerford et al. (2022) and a detailed outline is provided in Appendix A. Here we will give a non-technical, intuitive overview.

Firms in the US are believed to want to maximise their profits and, as a result pay workers according to their productivity. The problem they face is that they don't observe a worker's productivity. Instead they observe two "noisy" signals. The first relates directly to the worker's productivity (which we sometimes refer to as their talent or human capital). Firms have a rough idea about how good any worker is likely to be at their job based on their schooling, qualifications, experience and so on. But they also get a signal on an individual's background (specifically, a noisy signal of their parents' income). In the absence of perfect information on talent, firm's find it helpful to know a worker's background. The primary reason for this is that the provision of public education is imperfect so, if you're from a wealthier background, you may, on average, have more talent: your parents could pay for private schooling or tuition, summer camps, museum trips, and music lessons.

We then imagine two seemingly different worlds. In one, firm's have very good information about talent and so talent is rewarded heavily. We call this "meritocracy" because the highest paying jobs go to the most talented. Educational investment is high as parent's take advantage of this mechanism - the private tuition, summer camps, and so on - and this spurs high levels of inequality. However, since this mechanism allows talent to be bought, at least to some extent, it leads to low level of intergenerational mobilty: rewards are allocated according to talent, but talent is allocated according to parental income. The idea that meritocracy spurs social mobility, in particular, was shown to be flawed in the presence of imperfect public provision of education.

In the other world, firms have very little direct information on talent, but good information about a worker's background. Since coming from a wealthier background is believed to afford greater educational opportunities, those children are rewarded. We call this "inherited advantage". Inequality is high because it is easy to tell those from different backgrounds apart, and intergenerational mobility is low because the children of the rich are selected into higher paying jobs. The key thing to note is that this end results is not so different from the meritocratic one: inequality is high and social mobility low. There will be less educational investment –

the rich only need to undertake it to maintain the general belief that they have more of it – but otherwise meritocratic worlds and those with high levels of inherited advantage look very alike.

The following sections fit this model. We use data on income levels, inequality, and intergenerational mobility at a commuting zone level to estimate which parts of the US are more meritocratic, and in which inherited advantages play a large role.

3 Data

The data used to calibrate the model is from Chetty, Hendren, Kline, and Saez (2014).[1] The units of observation are 1990 US commuting zones as defined by Tolbert et al. (1996). The data covers 709 of the 741 commuting zones.

In the model, $\mu(i)$ represents the mean of log income in commuting zone i under the assumption that income has a log normal distribution. It follows from the properties of the log normal that the mean of log income is equal to the natural log of median income. Chetty, Hendren, Kline, and Saez (2014) Online Data Table 7 provides data on "Median Parent Income" in each commuting zone. We take the natural log of this value as our measure of the mean of log income in commuting zone i, $\hat{\mu}(i)$ (carats are used to denote the realisations of a variable from the data).

We can also appeal to the properties of the log normal distribution to calculate the variance of log income for each commuting zone, $V_y(i)$. It is given by the following equation:

$$V_y(i) = 2 \times [ln\left(\mu_Y(i)\right) - \mu(i)]$$

where $\mu_Y(i)$ is mean income in commuting zone i. Thus $\hat{V}_y(i)$, the realisations of $V_y(i)$, are derived from $\hat{\mu}(i)$ and the natural log of mean income. For the latter we use "Mean Parent Income" from Online Data Table 7 of Chetty, Hendren, Kline, and Saez (2014).

For the intergenerational income elasticity, $\rho(i)$, we use the measure of relative mobility in Chetty, Hendren, Kline, and Saez (2014) Online Data Table 5 given by the rank-rank slope, $\hat{\gamma}_i$. This is the correlation between a parent's and child's rank in the income distribution. While $\rho(i)$ and $\hat{\gamma}_i$ are conceptually different, under the assumptions made in Appendix B we derive a mapping which is almost one-to-one between the two. Given their correlation of almost one, we use the rank-rank slope as $\rho(i)$ in the calibration.

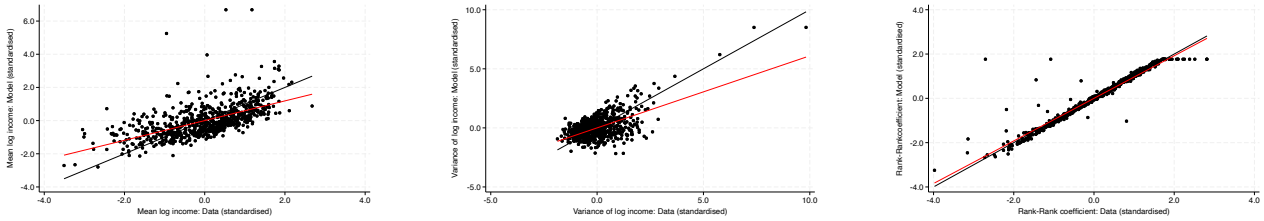
These three data series – $\hat{\mu}(i)$, $\hat{V}_y(i)$ and $\hat{\rho}(i)$ – are used below to calibrate the model described in section 2.2. Note that when examining and controlling for the information contained in the raw data, we use the more typical measures of mean parental income and inequality given by $\mu_Y(i)$ and $GINI(i)$, where the Gini coefficient comes from Online Table 8 of Chetty, Hendren, Kline, and Saez (2014).

Table 1 lists the covariates that Chetty, Hendren, Kline, and Saez (2014) used to describe the determinants of intergenerational mobility at a commuting zone level. We want to understand the association between these covariates and our measures of meritocracy and inherited advantage to try and characterise what regions with higher levels of meritocracy or inherited advantage look like. The covariates are grouped into ten categories. We will also look at the predictive power of each group of covariates over the spatial distribution of merit and advantage.

[1] Online data tables downloaded from "Where is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States. Chetty, Hendren, Kline and Saez (2014): Descriptive Statistics by County and Commuting Zone" available at http://equality-of-opportunity.org/index.php/data

Category	**Variables**
Racial Demographics	Black Share of the Population
Urban Areas	Urban/Rural Indicator
Segregation	Racial Segregation* Income Segregation* Segregation of Poverty (Bottom 25%)* Segregation of Affluence (Top 25%) Fraction with Commute less than 15 Mins
Tax	Local Tax Rate* Local Government Expenditures Per Capita* State Income Tax Progressivity* State EITC Exposure
K-12 Education	School Expenditure per Student* Student Teacher Ratio* Test Score Percentile (Income adjusted)* High School Dropout Rate (Income adjusted)
College Education	Number of Colleges per Capita College Tuition College Graduation Rate (Income Adjusted)
Labour Market	Labour Force Participation* Share Working in Manufacturing* Growth in Chinese Imports Teenage (14-16) Labour Force Participation Income Growth 2000-2006*
Migration	Migration Inflow Rate Migration Outflow Rate Fraction Foreign Born
Social Capital	Social Capital Index Fraction Religious Violent Crime Rate
Family Structure	Fraction of Children with Single Mothers Fraction of Adults Divorced Fraction of Adults Married

Table 1: Covariates used from Chetty, Hendren, Kline, and Saez (2014). Variables from each of the categories with three or more covariates were used to predict meritocracy and inherited advantage in Figures 5 and 7. Where there were more than three variables in a category, the ones with stars were used.



(a) Mean of log income (b) Variance of log income (c) Rank-Rank coefficient

Figure 1: The targeted moments plotted against their data values

We also use data on voting in Presidential elections to examine the informational content of the calibrated variables. This data is provided by the MIT Election Data and Science Lab (2018) and gives county level vote counts for each of the presidential candidates in each election from 2000 to 2020.[2] We focus on the 2016 Presidential election in the main body of the text as the Chetty, Hendren, Kline, and Saez (2014) data used to estimate intergenerational mobility spans up to 2012 and we want to focus on subsequent voting behaviour. Data from the other elections is used to perform robustness checks in appendix D. The aggregation of counties to commuting zones was carried out as in Autor et al. (2013).[3]

4 Methodology

We calibrate the model by minimising the distance between the values of $\rho(i)$, $V_y(i)$, and $\mu(i)$ in the model and the in data. Specifically, we minimise two objective functions relating to the squared distance between the data and fitted values of these three moments. The first objective is to minimise the largest of these distances. That means that if the model has a good fit for the mean and variance of log income, but a poor fit on the intergenerational correlation, it focuses on improving the fit on intergenerational correlation. The second objective is to minimise the sum of all three squared distances. When these two objective are used together it amounts to saying: focus on improving the fit of the least well fitted moment (objective 1) but, where you can improve the fit of the other moments, do so (objective 2).[4]

The quality of the fit between the model and data for each moment is examined in Figure 1. The figures are drawn with standardised moments so that the slope of the red fitted line represents the correlation between the fitted and data values across CZs. The black line represents a perfect fit (i.e. a correlation of 1). The rank-rank coefficient is fitted almost perfectly with a correlation of 0.961. The other moments are less well fitted but have correlations of 0.594 (mean of log income) and 0.610 (variance of log income) between the model and the data.

This strategy allows us to obtained fitted values of meritocracy and inherited advantage

[2]The data can be downloaded at:
https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/VOQCHQ

[3]We are grateful that David Dorn has made the code available for mapping between US counties and 1990 commuting zones. It is available to download as file [E7] at the following webpage:https://www.ddorn.net/data.htm. File [E10], available on the same page, provides updates to the county mapping for more recent censuses.

[4]We fit the model in Julia using the "BlackBoxOptim" module and the Borg MOEA method. Borg MOEA allows multiple objective functions to be specified and returns a Pareto frontier along which neither objective can be improved without having a detrimental effect on the other. We fit the Pareto frontier using objective 2 but then choose the point on the frontier which best satisfies objective 1. The data on the three moments were standardised by subtracting the mean and dividing by the standard deviation prior to implementation. This ensured that they were all of the same scale so that the squared errors could be compared.

for each commuting zone (distributions of which are given in Appendix C), as well as US-wide measures of four global parameters. These parameters represent the elasticity of human capital with respect to parental investment, the variance of an individual's human capital shock, the intergenerational discount rate, and Total Factor Productivity in human capital production.

The figures which we obtain for these global parameters are worth some consideration. We find that the elasticity of human capital with respect to parental investment is 0.43. The model requires this to be between 0 and 1 and a value of around 0.4 seems reasonable: a 1% increase in parental investment leads to a 0.4% increase in human capital. The fitted discount rate of 9149.63 equates to an annual discount rate of 0.355. This is high relative to annual interest rates and suggests a high degree of discounting from year to year (although, it's worth noting that the country model described in appendix E has an fitted annual discount rate of 0.0621 which is much more consistent with an interpretation as an annual interest rate). The figures for the variance of an individual's human capital shock (9149.63) and Total Factor Productivity (41,470.33) do not have a readily comparable benchmark.

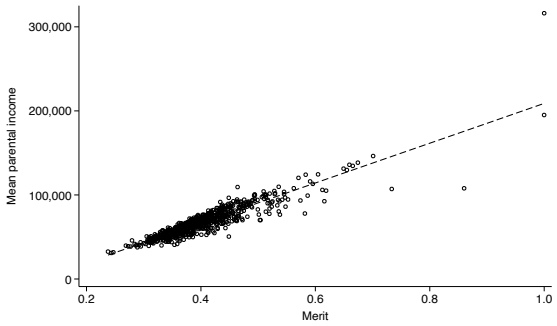
5 Analysis & Results

5.1 Correlation with the Raw Data

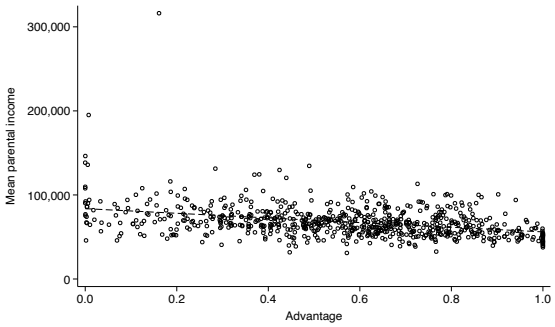
We first look at how meritocracy and inherited advantage from the calibrated model vary with the data used in the calibration. Figure 2 illustrates their associations with mean parental income, the rank-rank coefficient (relative intergenerational mobility) and the Gini coefficient. These represent the raw data from Chetty, Hendren, Kline, and Saez (2014) used to derive the targeted moments in the calibration.

The top row shows the correlation of merit and advantage with mean parental income. Merit is positively and significantly correlated with parental income, while advantage is negatively and significantly correlated with parental income. In the case of merit, this may be understood to relate to parental investment in education (which is positively correlated with mean income): more meritocratic places incentivise educational investment, which in turn generates higher incomes. More aristocratic places (those with higher levels of inherited advantage) exhibit lower mean income for the opposite reason: when background, rather than talent, is rewarded, there is less incentive to invest in education, reducing incomes. Looking at this the other way, in areas where average parental income is high, firms are less concerned about an individual's particular background, but in areas where average parental income is low, where you come from in the income distribution matters more.

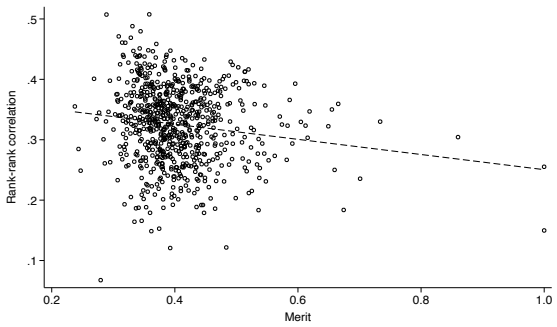
The middle row shows the correlation of merit and advantage with relative mobility, given by the rank-rank coefficient for the 1980-82 cohort. A higher rank-rank coefficient represents a higher degree of intergenerational correlation, or lower mobility. The left-hand panel shows that commuting zones which exhibit more merit also have higher mobility. In the context of the model this is counter-intuitive: more merit and more discrimination there lead to greater incentives to invest in children's education which, in the presence of a credit constraint, increases the importance of parental income in determining children's outcomes. We can see, however, that advantage is negatively correlated with intergenerational mobility: commuting zones where firms discriminate more on background, offer less opportunity for a family's position in the income distribution to change from one generation to the next. Given meritocracy and advantage are themselves negatively correlated, this could explain the downward sloping line of best fit in Figure 2c: as merit increases, the rank-rank coefficient may increase for a given level of advantage, as predicted by the model, but this is crowded out by a decline in advantage which pulls down the rank-rank coefficient. This is confirmed in Table 2. The effect



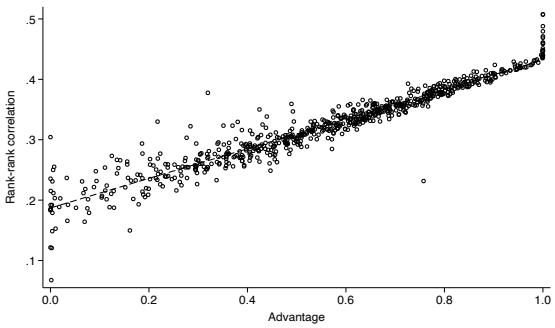
(a) Merit and Mean Parental Income



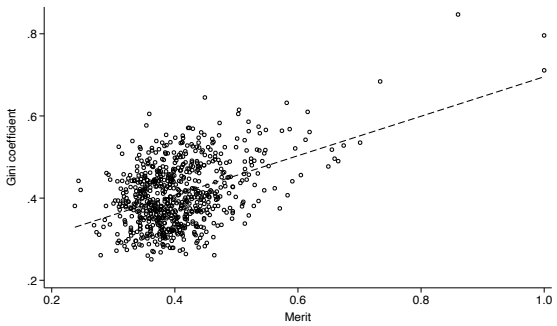
(b) Advantage and Mean Parental Income



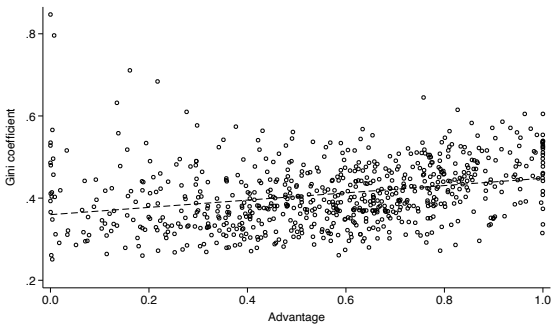
(c) Merit and Relative Mobility



(d) Advantage and Relative Mobility



(e) Merit and the Gini Coefficient



(f) Advantage and the Gini Coefficient

Figure 2: Association of merit and advantage with data used in the calibration.

Table 2: Correlation of meritocracy and inherited advantage with the data used in the calibration

	(1) Mean Parent Income	(2) Rank-Rank coefficient	(3) Gini	(4) Top 1% Income Share	(5) Frac. 25-75%
Merit	0.888***	0.193***	0.618***	0.857***	-0.271***
	(0.0762)	(0.00928)	(0.0304)	(0.0231)	(0.0346)
Advantage	-0.0619*	1.020***	0.488***	0.182***	-0.518***
	(0.0329)	(0.00928)	(0.0304)	(0.0231)	(0.0346)
Observations	709	709	709	709	709
Adjusted R^2	0.828	0.946	0.418	0.663	0.246

Standard errors in parentheses
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

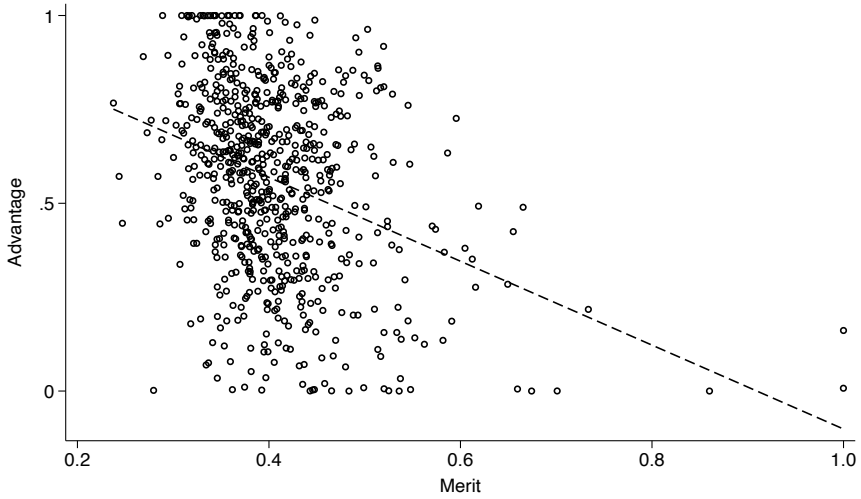


Figure 3: The fitted relationship between meritocracy and inherited advantage across CZs

of an increase in merit, for a given level of advantage, is to increase the rank-rank correlation and reduce mobility.

The bottom panels of Figure 2 show that both merit and advantage are correlated with higher inequality. Higher levels of merit and advantage imply that firms are discriminating to a larger degree and, in so doing, generate more inequality. Likewise, higher levels of inequality (in background, educational expenditure, and talent) feed into greater labour market discrimination.

Table 2 gives the regression results from running each of the variables used to fit the model on merit and advantage. The results reported are for standardised versions of each variable, so the coefficients should be interpreted as the effect of a one standard deviation change.

As we saw in the bivariate graphs, merit and advantage have opposite associations with mean parental income: merit is associated with significantly higher mean parental income, while advantage is associated with significantly lower mean incomes. The magnitude of the merit association is considerably larger. The rank-rank coefficient is positively and significantly associated with both merit and advantage, holding the other fixed. This implies that intergenerational mobility is lower in commuting zones with higher degrees of merit or inherited advantages. The Gini coefficient is, likewise, positively and significantly associated with both merit and advantage.

It is worth noting that the narrative of Comerford et al. (2022) was that increases in meritocracy and inherited advantage are associated with the same (detrimental) effects on inequality and intergenerational mobility. This is exactly what we have found in the data. The model allows them to have different associations with mean parental income though, since meritocracy incentivises educational investment to a much larger degree than inherited

advantage does, particularly in the presence of high discount rates.[5] This is also what the data has shown.

The magnitudes of the effects are comparable given each of the variables is standardised. For example, the association between inherited advantage and intergenerational mobility is shown in column (2) to be much stronger than the association between meritocracy and mobility. This is interesting in the context of America as the "Land of Opportunity". In our previous paper we noted a theoretical mechanism which would imply that America may be the land of opportunity, but only for the sufficiently rich: labour markets rewarded the most talented, but talent was bought by parental income. Column 2 of Table 2 implies that, while that mechanism exists, the association with intergenerational mobility is much stronger from advantage: the children of the rich stay rich primarily because the labour markets rewards signals on parental income. It suggests that commuting zones with low mobility in the US are not there through the way human capital is acquired but through a more aristocratic mechanism whereby labour markets directly favour the children of the rich (i.e. middle class children get good jobs irrespective of talent).

Looking, at column (3), a one standard deviation increase in either merit or advantage is associated with roughly the same increase in the Gini coefficient. Meritocracy is therefore comparatively more strongly associated with inequality, while inherited advantages are more strongly associated with intergenerational mobility.

When we look more closely at the associations of merit and advantage with inequality, we find some interesting results (columns (4) and (5)). The model already establishes why more meritocratic commuting zones should be, contrary to what might at first be thought, associated with a shrinking middle class and wealthier elites. What is surprising is that merit is more strongly associated with the income share of the top 1%, while advantage is more strongly associated with the size of the middle class (those with incomes between the 25th and 75th percentiles). Rather than primarily seeing a hollowing out of the middle class as societies become more meritocratic, the discrimination which incentivises the rich to buy advantages for their children disproportionately rewards the elite. A more aristocratic society, on the other hand, where advantages are passed directly from one generation to the next rather than purchased, is associated more strongly with the hollowing out of the middle class than the income share of the top 1%. Better identification of the rich allows their children to remain rich, perhaps all the more so, but it doesn't relate to a concentration of income at the top of the distribution to the same extent as meritocracy does.

5.2 Pairwise correlations

Figure 4 shows the pairwise correlations of each covariate with meritocracy and their 95% confidence intervals. The signs next to each variable name indicate the direction of the correlation. The top three correlates all show that meritocracy is strongly associated with more segregation. This is consistent with the model's story, where meritocracy is fuelled by discrimination and richer parent's using the education system to their children's advantage. This includes Tiebout sorting, where local taxes in areas with higher housing costs fund higher quality schools, so we would expect to see income related segregation when meritocracy is higher.

Meritocracy is also strongly correlated with variables relating to urban areas (both urban areas themselves, and those with longer commutes), the migrant population and migration

[5]Any incentive to invest in education in the presence of higher inherited advantage takes two generations to pay off, so it is nullified in the fitted model where the discount rate is high, and outweighed by the incentive not to invest in a world where it's who you are, and not what you know, that matters.

flows, and labour force participation. These combine to create an image of a churning population where people move in and out of urban areas to take advantage of job opportunities. We would expect large and fluid labour markets to be characterised by a high degree of discrimination amongst firms – they have better options when hiring – and this discrimination is positively related to meritocracy.

We also see a significant positive correlation of meritocracy with the teacher student ratio, school expenditure per student and college tuition (though it's related to a smaller number of colleges per capita). Meritocracy, in our model, implies firms discriminate to a larger extent on talent, so parent's invest more heavily in the education of their children. We would expect this to lead to a demand for more public expenditure on schools and teachers, and colleges charging higher fees in response to that demand (though we would also expect to see more colleges, or at least college places).

Figure 5 confirms the key messages from Figure 4. It looks at the correlation between the meritocracy value from the fitted model with a prediction of the same value from subset of covariates. Each subset contains three covariates grouped thematically (given in table 1). For example, the segregation line uses three covariates related to segregation – racial segregation, income segregation and the segregation of poverty – to estimate a predicted value of meritocracy for each CZ, then plots the correlation of this with the fitted values of meritocracy. This amounts to asking: how well do covariates related to segregation predict meritocracy in a CZ?

The answer is very well, at least in relative terms, with a correlation of over 0.6 between the fitted value of merit and its prediction, and a narrow confidence interval. The next best predictors of the level of meritocracy in a CZ relate to labour markets and migration, followed by K-12 education. This is all consistent with the model's story where the incentives and ability to discriminate in labour markets drive demand for education.

We repeated the same exercises for the fitted values of inherited advantage in Figures 6 and 7. The top pairwise correlates were the fraction of children with single mothers, the share of the population which is black, and teenage labour force participation (14-16 years). There were several other variables relating to economic or labour markets conditions which featured highly, including the manufacturing employment share, income growth, and labour force participation of over 16s: places which had seen slower income growth, lower levels of labour force participation, and higher shares in manufacturing tended to have higher levels of inherited advantage. This is in contrast to the dynamic, urban labour markets where meritocracy was most prevalent. In fact, many of these variables were amongst the least strongly correlated with meritocracy (with the exception of labour force participation).

In terms of the themed subsets of variables in Figure 7, family structure variables are the best at predicting inherited advantage. Single motherhood and divorce are positively and significantly correlated with inherited advantage, conditional on the other variables; marriage is negatively and significantly correlated with inherited advantage, conditional on the others. So, areas with low rates of marriage, and high rates of divorce and single motherhood, exhibit high levels of inherited advantage. This implies that firms find it easiest to judge the background of an individual in such areas, and use it as a factor in their hiring (or compensation) decisions.

Labour market factors are important, as they were with predicting meritocracy. Both meritocracy and inherited advantage are associated with lower income growth. However, meritocracy is associated with higher labour force participation and a lower share of manufacturing employment, while inherited advantage is associated with lower labour force participation and a higher share of manufacturing employment. This might imply that inherited advantage (or disadvantage) is more strongly associated with structural unemployment brought about by

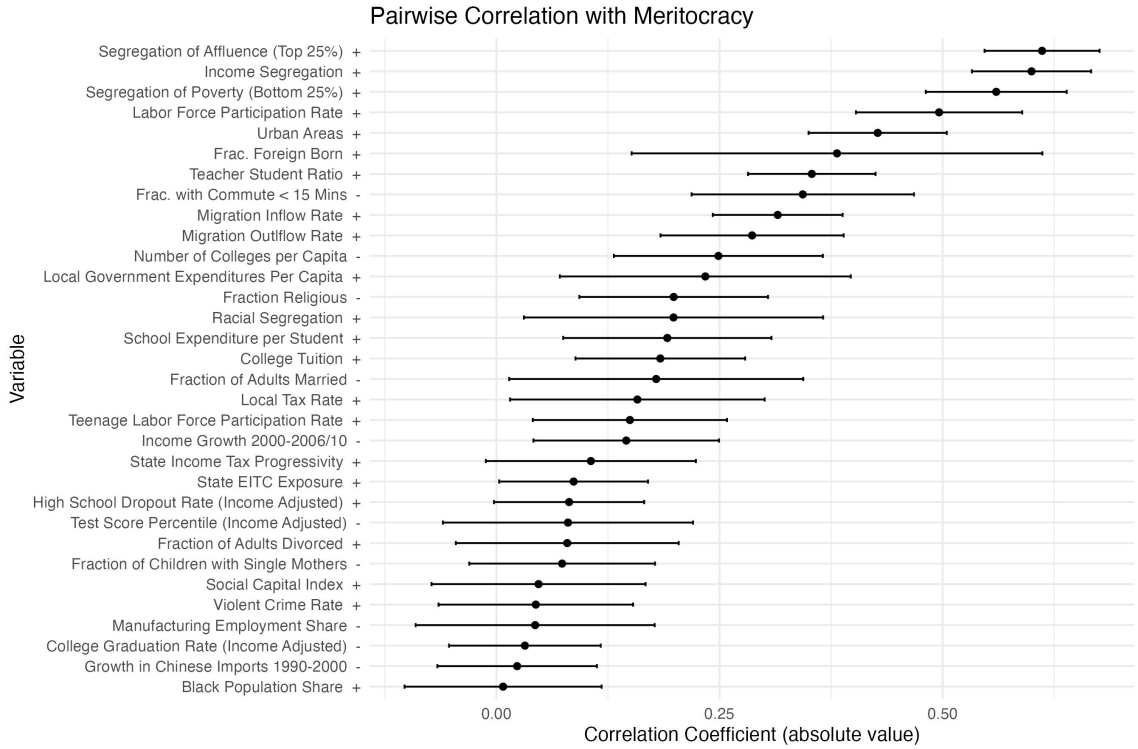


Figure 4: The pairwise correlation of meritocracy with covariates from US commuting zones. Standard errors are clustered at a state level.

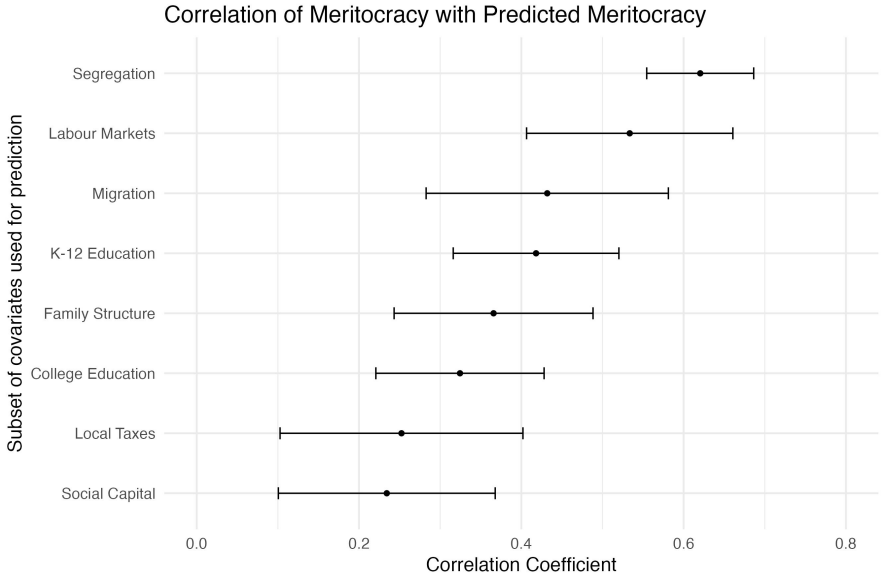


Figure 5: The pairwise correlation of meritocracy with predicted meritocracy. Each prediction is made from three variables grouped thematically. The correlation gives an indication of the extent to which that theme is associated with meritocracy. The predictions were from beta regressions with standard errors clustered at a state level.

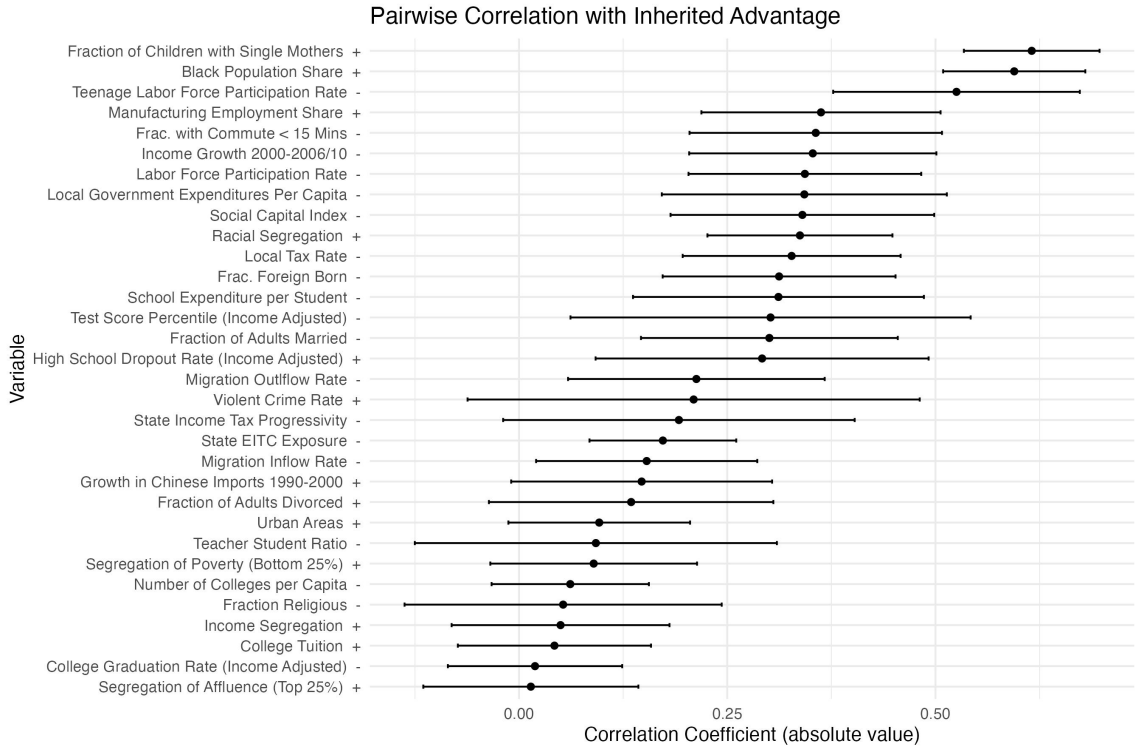


Figure 6: The pairwise correlation of inherited advantage with covariates from US commuting zones. Standard errors are clustered at a state level.

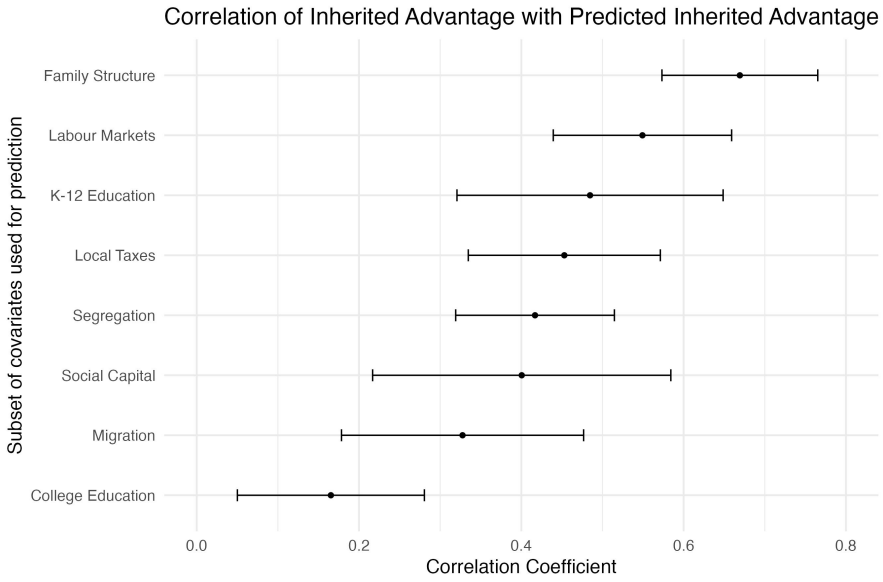


Figure 7: The pairwise correlation of inherited advantage with predicted inherited advantage. Each prediction is made from three variables grouped thematically. The correlation gives an indication of the extent to which that theme is associated with inherited advantage. The predictions are from beta regressions with standard errors clustered at a state level.

the loss of manufacturing jobs in the Eastern US.

5.3 Regression Analysis

Table 3 shows the results from regressing merit and advantage on the full range of covariates from Table 1.[6]

We can see that the magnitude of the association with merit is greatest for income segregation and the black share of the population (positively), and fraction of the population with commutes under 15 minutes and fraction of children with single mothers (negatively).[7] Unlike merit, inherited advantage has no significant association with income segregation, but has a relatively large and significant positive association with racial segregation. It is also strongly associated with the fraction of children with single mothers (positively), and with the teenage labour force participation rate, teacher student ratio, and fraction of the population which is foreign born (negatively). In columns (2) and (4) we iteratively removed the variable with the highest p-value until only those with $p<0.05$ remained. These provide more parsimonious models.

There are a number of variables which have significant effects in opposite directions across merit and advantage: racial segregation and the fraction of children with single mothers are associated with higher levels of inherited advantage in a commuting zone, but lower levels of meritocracy; teenage labour force participation, the fraction of the population which is foreign born, and the teacher student ratio are all associated with higher levels of meritocracy but lower levels of inherited advantage. In fact the only variable which has a significant association in the same direction for both meritocracy and inherited advantage is the black population share; in all other cases the associations are in opposite directions.

Amongst the education variables, it is notable that school expenditure per student is higher in more meritocratic areas, while expenditure and student teacher ratios are significantly lower in areas with higher advantage. This is consistent with the model: meritocracy creates greater incentives to invest in education as a means to generate higher income for your children, which manifests itself in higher public spending; in areas where background matters more, parents generate advantages (or disadvantages) for their children outside of the education system, so spending and student teacher ratios are lower.

Meritocratic areas seem to be more diverse, in the sense of having a larger black and foreign born share of the population and less racial segregation; areas with more inherited advantage have a significantly lower foreign born population and more racial segregation. The fact that a more ethnically diverse, immigrant population may be drawn to, or perpetuate, meritocracy is consistent with the ideal of the "American Dream", albeit the belief that success can be achieved through application rather than background fails to be borne out. It would also seem to be consistent with Piketty's conception of the "self-made man".

Violent crime is shown to be positively correlated with inherited advantage. Kelly (2000) provided empirical evidence for Robert Merton's theories on social structure which became known as "Strain Theory" (Merton 1938). This posits that violent crime is more prevalent when the means of achieving success (in our case, income) are not perceived as equally, or fairly, distributed. Inherited advantage implies that those with richer parents have advantages in the labour market, not through the indirect (and less obviously unfair) channel of providing a means to a better education, but directly by rewarding those from more prosperous back-

[6]The variables in Table 3 have all been standardised to have a mean of zero and a standard deviation of 1, allowing us to compare the magnitude of the effect of a one standard deviation change in each variable.

[7]There is a large association with the segregation of poverty measure, though this is insignificant due imprecision in the estimate.

Table 3: Regressions of Meritocracy and Inherited Advantage on CZ Characteristics

	(1) Merit	(2) Merit	(3) Advantage	(4) Advantage
Black Population Share	0.333***	0.194***	0.0582	0.103**
	(0.0856)	(0.0476)	(0.0553)	(0.0453)
Urban Areas	-0.0465		-0.0122	
	(0.0297)		(0.0235)	
Racial Segregation	-0.0769***	-0.102***	0.232***	0.228***
	(0.0244)	(0.0306)	(0.0430)	(0.0361)
Income Segregation	0.837**	0.367***	0.0863	
	(0.343)	(0.0578)	(0.550)	
Segregation of Poverty (Bottom 25%)	-0.355		0.000501	
	(0.243)		(0.275)	
Segregation of Affluence (Top 25%)	-0.124		-0.160	
	(0.212)		(0.297)	
Frac. with Commute < 15 Mins	-0.259***	-0.320***	-0.106*	
	(0.0769)	(0.0555)	(0.0584)	
Local Tax Rate	-0.00479		0.00666	
	(0.0510)		(0.0454)	
Local Government Expenditures Per Capita	0.0676*		-0.0686*	-0.0890**
	(0.0353)		(0.0365)	(0.0427)
State Income Tax Progressivity	-0.0000121		-0.0909**	
	(0.0360)		(0.0354)	
State EITC Exposure	-0.0666**	-0.0823**	0.000270	
	(0.0267)	(0.0338)	(0.0272)	
School Expenditure per Student	0.128***	0.132***	-0.0719*	
	(0.0451)	(0.0323)	(0.0409)	
Teacher Student Ratio	0.0737	0.131***	-0.208***	-0.207***
	(0.0465)	(0.0303)	(0.0309)	(0.0365)
Test Score Percentile (Income Adjusted)	-0.109		-0.0205	
	(0.0890)		(0.0489)	
High School Dropout Rate (Income Adjusted)	0.0570		-0.0224	
	(0.0424)		(0.0394)	
Number of Colleges per Capita	-0.0272		0.0169	
	(0.0266)		(0.0366)	
College Tuition	0.0488*		0.0185	
	(0.0271)		(0.0241)	
College Graduation Rate (Income Adjusted)	-0.0446		0.0392	
	(0.0283)		(0.0294)	
Labor Force Participation Rate	0.103	0.144**	0.0123	
	(0.0798)	(0.0668)	(0.0496)	
Manufacturing Employment Share	-0.0781		0.158***	0.159***
	(0.0559)		(0.0469)	(0.0370)
Growth in Chinese Imports 1990-2000	0.0488*		-0.0319*	
	(0.0269)		(0.0185)	
Teenage Labor Force Participation Rate	0.216***	0.251***	-0.213***	-0.209***
	(0.0692)	(0.0663)	(0.0569)	(0.0358)
Income Growth 2000-2006/10	-0.0461		-0.0739*	-0.110**
	(0.0478)		(0.0440)	(0.0429)
Migration Inflow Rate	0.0529		0.00549	
	(0.0690)		(0.0573)	
Migration Outlflow Rate	-0.0325		-0.0640	-0.0734***
	(0.0782)		(0.0487)	(0.0263)
Frac. Foreign Born	0.163**	0.192***	-0.205***	-0.236***
	(0.0808)	(0.0609)	(0.0541)	(0.0435)
Social Capital Index	0.218*	0.153**	0.0432	
	(0.110)	(0.0677)	(0.0698)	
Fraction Religious	-0.0182		0.0466	
	(0.0493)		(0.0422)	
Violent Crime Rate	-0.0136		0.177***	0.109***
	(0.0540)		(0.0471)	(0.0318)
Fraction of Children with Single Mothers	-0.440***	-0.150**	0.371***	0.323***
	(0.104)	(0.0727)	(0.0839)	(0.0560)
Fraction of Adults Divorced	0.0915		-0.00632	
	(0.0779)		(0.0566)	
Fraction of Adults Married	-0.0957		0.110**	0.101**
	(0.0626)		(0.0432)	(0.0448)
Observations	709	709	709	709
Adjusted R^2	0.593	0.572	0.675	0.671

Standard errors, clustered at state level, are given in parentheses. All variables have been standardised to have mean zero and standard deviation one. Where an observation of a particular variable is missing from the dataset, this was coded as zero. A missing indicator was added allowing an aggregate shift away from zero for those commuting zones with missing observations. This prevented dropping many CZs for which we did not have full information and is consistent with Chetty, Hendren, Kline, and Saez (2014). * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

grounds. The positive and significant correlation of violent crime with inherited advantage is thus consistent with Merton's mechanism.

In summary, although meritocracy and inherited advantage are theoretically fed by the same macroeconomic factors (high inequality and labour market discrimination; low social mobility), how they get there is very different. Meritocratic areas are predominantly urban and have high social capital, dynamic labour forces, and high levels of competition that attract talented migrants and encourage educational investment. Firms have a high incentive, and ability, to choose amongst workers according to talent, fuelling high levels of inequality (and income segregation). Areas with high levels of inherited advantage are, conversely, racial segregated with high levels of single motherhood and violent crime, stagnating manufacturing-based economies, and relatively few teachers. Amongst the more socially and economically disadvantaged, those disadvantages are passed directly from one generation to the next, perpetuating large gaps between the rich and the poor and limiting intergenerational mobility.

5.4 Mapping Meritocracy and Inherited Advantage

Figure 8a shows the distribution of meritocracy across commuting zones in the US based on the calibrated model from section 4. There are roughly 70 commuting zones in each decile, with lighter colours representing states with lower levels of meritocracy and darker colours representing those with higher levels of meritocracy.

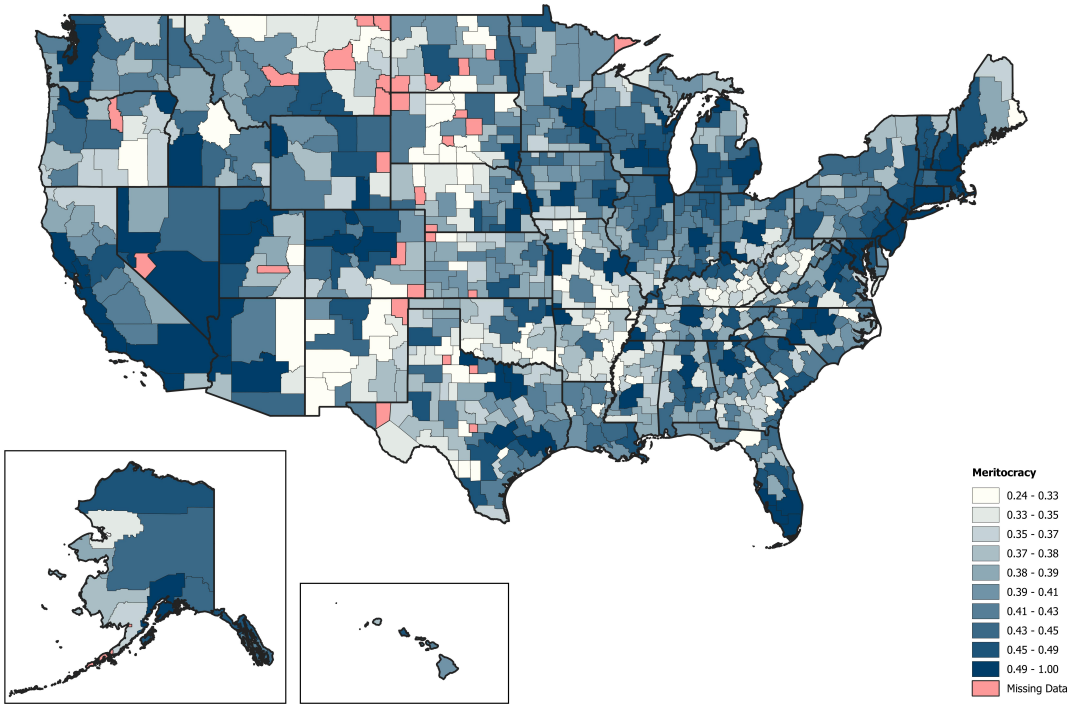
Generally speaking, meritocracy is more common on the coasts and around the Great Lakes, specifically in the northern and southern portions of both the Pacific and Atlantic coastlines, in Southern Texas and Louisiana, and throughout the Mid-West. The areas to the south of the Appalachians, around the Rocky Mountains, and on the Western Plateau, are all more meritocratic. By contrast, the Great Plains and much of the South, particularly away from the coastline and the Appalachians, have lower levels of meritocracy. This is consistent with the story above where meritocracy is associated with more populous urban areas with larger migrant populations.

Figure 8b shows the distribution of inherited advantage across the US based on the calibrated model. Advantages are much more concentrated geographically than meritocracy was: inherited advantages are strongest in the south-eastern US, south of the Appalachians and throughout Mississippi and Louisiana. To the north-west of that, from northern Texas and New Mexico, through the southern Mid-West, and into New England, is a band with intermediate levels of inherited advantage (including the rust belt). Generally speaking, the western states, and north-western Mid-West, exhibit low levels of inherited advantage.[8] This is also consistent with the story above: the areas with the greatest inherited advantage were historically more racial segregated areas with larger manufacturing sectors.

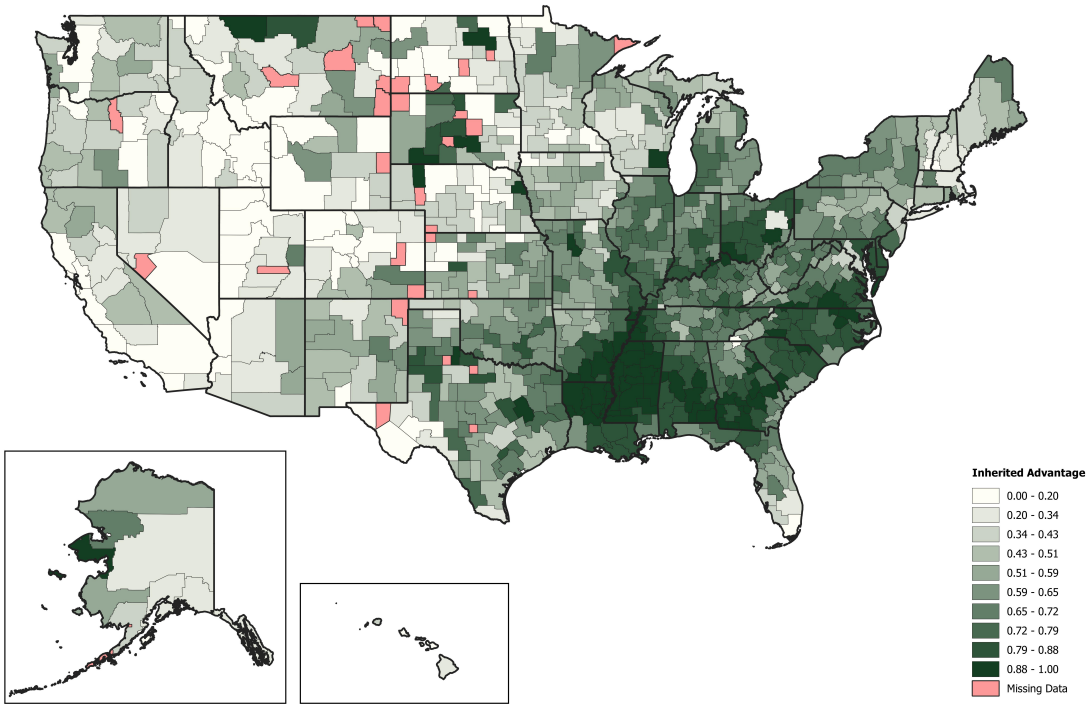
5.5 Voting Behaviour

One of the question which we might ask is the extent to which these variables, meritocracy and advantage, provide us with new information or understanding. Meritocracy is strongly correlated with mean parental income, while inherited advantage is strongly correlated with intergenerational mobility. Knowing income and mobility already, to what extent do we gain information from the calibration of meritocracy and inherited advantage?

[8]The exceptions to this are pockets of high inherited advantage in central South Dakota and northern Montana. As Chetty, Hendren, Kline, and Saez (2014) note in relation to low mobility, these are areas with large Native American Reservations. They also stand out in terms of high levels of inherited advantage (or disadvantage), though this is unsurprising given the high correlation of mobility and advantage.



(a) Meritocracy



(b) Inherited Advantage

Figure 8: The distribution of meritocracy and inherited advantage across US commuting zones fitted from the model calibration. The shading is by decile with darker colours representing higher levels of the relevant variable.

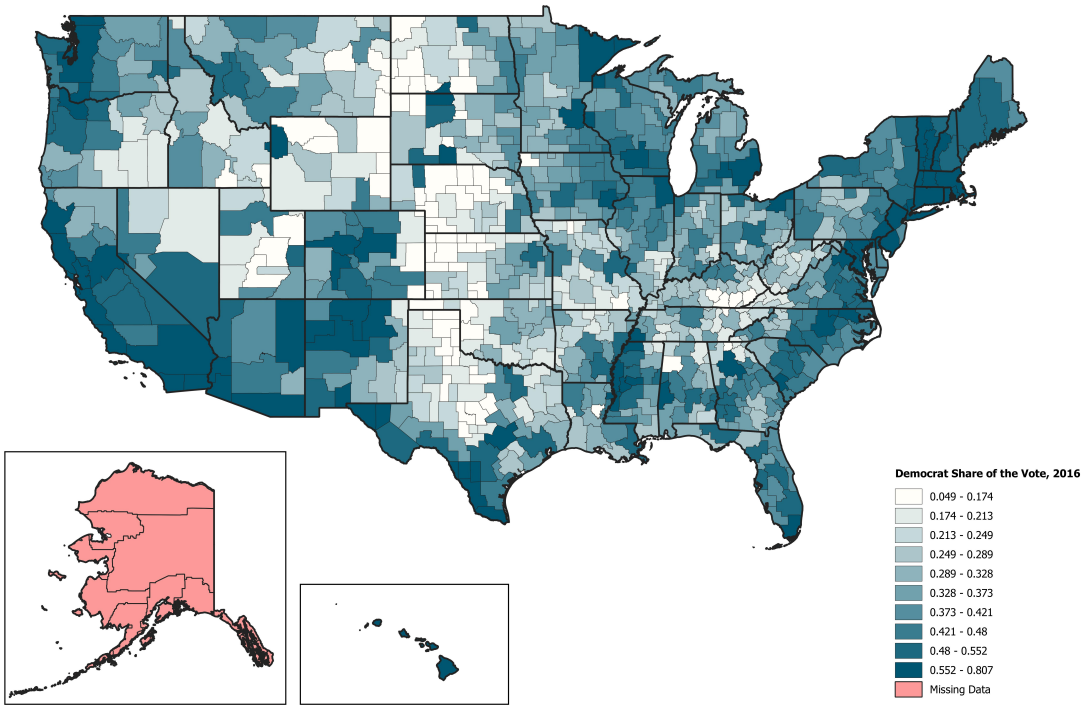


Figure 9: The share of the Democrat/Republican vote going to the Democratic Party candidate in the 2016 Presidential Election. Note that Alaska does not report votes by country so it was not possible to aggregate their voter share to the commuting zone level. For consistency with previous maps, commuting zones are split into deciles.

To investigate this, we use the merit and advantage variables from the calibrated model to predict the Democractic Party vote in the 2016 Presidential Election (as a share of the total Republican/Democrat vote). The voting data is shown in Figure 9. A visual comparison with Figures 8a and 8b suggests that the spatial pattern of Presidental voting is correlated with meritocracy but not with advantage (the correlation coefficients are 0.49 and -0.02 respectively).

We first determine whether the calibrated variables can match the explanatory power of the targeted variables from which they are derived. We then investigate whether, conditional on the targeted variables, the calibrated ones have any explanatory power. As with the main models, we are not claiming that their effects are causal, but we find that the calibrated variables, merit and advantage, have only slightly less explanatory power as the targeted ones, and that they are sometimes significant even conditional on the data from which they are derived. Specifically, inherited advantage is significantly correlated with voting even conditional on mean income, intergenerational mobilty and inequality. Table 4 summarises the results.

In column (1) we regress the Democrat share of the vote on the three data variables which were targeted in the calibration. Mean income and the Gini coefficient are positively associated with the Democrat vote, while there is no association between intergenerational mobility and the Democrat vote. In column (2) we can see that the two calibrated variables, merit and advantage, explain slightly less of the variation in the Democrat vote as the raw data, with an adjusted R^2 of 0.213 relative to 0.253.[9] Column (3) examines the extent to which merit and advantage are associated with the Democrat vote conditional on the raw data variables. We find that inherited advantage is significantly associated with voting behaviour: areas with more inherited advantage are associated with a larger Republican vote. The adjusted R^2 has increased to 0.277, providing further evidence that the calibrated variables add information over and above that contained in the raw data.

Column (2) is effectively an additional column in Table 2. Meritocracy and inherited advantage are correlated in the same way with voting behaviour; both lead to a larger share of the Democrat vote. With regards to meritocracy this might at first seem odd - the work of Bénabou and Ok (2001), Alesina and La Ferrara (2005), and others describe how we should expect more left-wing voting where people's experience of upward mobility is weaker. But of course that is one of the core points of the model. Under meritocracy, people's experience of mobility *is* weaker. Employers reward talent, but it is the children of the rich who are provided with it. Meritocracy is not a levelling of the playing field and we see more meritocratic commuting zones voting for the more left-wing party in the same way as we see those with more inherited advantage doing so.

The other interesting narrative from columns (1) to (3) relates to the rank-rank coefficient and inherited advantage. In column (1), the rank-rank coefficient is only weakly and insignificantly correlated with voting. However, in column (3), once merit and advantage are included in the regression, it is positively and significantly associated with the Democratic vote. This is the result which we expect to see from the POUM hypothesis – where mobility is more restricted, we expect to see a larger share of the left-wing vote. Column (1) suggests that this POUM mechanism is being masked by an opposing association between mobility and voting, which in turn may be captured by inherited advantage; in fact, in column (3) inherited advantage had a negative and significant effect, quite different to column (2) where it is positive and marginally significant. In summary, the rank-rank coefficient and inherited advantage when included independently in the model are, at best, marginally significant, but when both are included a significant positive and negative effect on each. The former is con-

[9] We prefer the adjusted R^2 to the R^2 as more of a like-for-like comparison as it corrects for the additional explanatory power from having an extra variable in the regression in column 1.

Table 4: Regressions on the Democratic Party Share of the Vote in the 2016 Presidential Election

	(1) Dem. 2016	(2) Dem. 2016	(3) Dem. 2016	(4) Dem. 2016	(5) Dem. 2016	(6) Dem. 2016
Mean Parent Income	0.327***		0.643*	0.104		0.0919
	(0.0886)		(0.368)	(0.0745)		(0.118)
Rank-Rank coefficient	0.0506		0.775**	-0.170***		-0.279*
	(0.0943)		(0.336)	(0.0478)		(0.154)
Gini	0.326***		0.513***	-0.0207		-0.0327
	(0.0688)		(0.173)	(0.0359)		(0.0789)
Merit		0.489***	-0.549		0.0436	0.0338
		(0.0750)	(0.413)		(0.0698)	(0.159)
Advantage		0.157*	-0.845**		-0.138***	0.124
		(0.0909)	(0.323)		(0.0371)	(0.136)
Covariates Included	No	No	No	Yes	Yes	Yes
Observations	697	697	697	697	697	697
Adjusted R^2	0.253	0.213	0.277	0.780	0.775	0.780

Standard errors, clustered at state level, are given in parentheses. All variables have been standardised to have mean zero and standard deviation one. Where an observation of a particular covariate is missing from the dataset, this was coded as zero. A missing indicator was added allowing an aggregate shift away from zero for those commuting zones with missing observations. This prevented dropping many CZs for which we did not have full information and is consistent with Chetty, Hendren, Kline, and Saez (2014).* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

sistent with the POUM hypothesis; the latter is consistent with some correlation between a form of classism and Republican voting. Imagine that mobility is low and fixed across two worlds. In the first, you can't move around the income distribution from one generation to the next, and where you are in the income distribution in the first place is down to luck. In this world, we see a relatively large Democrat vote. In the other world you also can't move around the income distribution from one generation to the next, but where you start is due to your background. The rich stay rich but this is believe to be due to some entitlement and we see a larger Republican share of the vote. This could represent a class-based system where the rich are entitled to advantages, which shouldn't be taxed away, by virtue of the fact that rich families are valuable (e.g. for producing business and community leaders). It is also consistent with the fact that we see lower government expenditures in commuting zones with more inherited advantage (see Table 3).

Columns 4 to 6 include the full set of covariates from Table 1 in each of the regressions. Unsurprisingly this raises the adjusted R^2 values considerably. The positive and significant association between the rank-rank coefficient and the Democrat vote disappears, suggesting the POUM hypothesis is now being captured by other covariates associated with education and labour markets; the negative and significant association between inherited advantage and the democrat votes doesn't though. This suggests that this latent classism isn't adequately capture by other variables and that preserving dynastic advantages is a more Republican trait.

Appendix D examines the extent to which these results hold up when looking at other Presidential elections from 2000 to 2012 and 2020. Generally speaking, the results are very similar when looking across elections. One thing worth noting is that merit always enters negatively in column (3), significantly so in earlier elections. This is akin to the "self made man" equilibrium in Piketty (1995): people vote to allow the talented to keep their high incomes, but only conditional on access to moving up the income distribution.

5.6 Robustness

Appendix E repeats the above analysis using data at a county level. The main results from the paper are generally confirmed, though the regression results allow for some further analysis as the set of covariates is slightly different. We find there than meritocracy is particularly associated with densely populated areas with little urban sprawl, integration and access to

affordable housing for the poor, but segrgation for the most affluent. While meritocracy continues to be characterised by highly competitive labour markets and greater socio-political engagement, it is also associated with higher levels of crime.

The results on inherited advantage are extremely consistent with those above. We find that counties with a larger black share of the population, higher poverty rate, and less affordable housing for the poor are associated with higher inherited (dis)advantage. It is noted that this is consistent with research on red-lining and racial discrimination in the provision of housing. Counties with higher levels of inherited advantage are also typically more blue collar, have higher levels of crime, and have poorer schooling and labour market outcomes for young people.

6 Conclusions

In this paper, we have developed and applied a model that generates two indices—meritocracy and advantage—to analyse local labour markets across the United States. These indices, derived from regional data on income, inequality, and intergenerational mobility, allow us to interpret how different regions reward either individual talent or class background. Taking the model seriously, we interpret high meritocracy as indicating regions where labour markets effectively reward human capital, while high advantage signifies regions where labour markets disproportionately reward family background.

Consistently with our modelling framework, commuting zones identified as meritocratic tend to be associated with higher incomes, and greater inequality; while regions with high advantage see high inequality and low social mobility. A crucial question however, is whether our model-derived indices align with intuitive, everyday understandings of meritocracy and advantage. To address this, we examined the correlation between our indices and a wide range of regional characteristics not used in deriving them. The results support the validity of our indices: more meritocratic regions tend to be urban areas with better educational and labour market opportunities, while regions with higher advantage often show more racial segregation, higher rates of single-parent households, crime, and stagnating economic conditions.

Given the consistency between our derived indices and observable regional characteristics, we conclude that the labels of meritocracy and advantage accurately describe real socio-economic phenomena in these regions. However, our analysis extends beyond merely summarising the data from Chetty, Hendren, Kline, and Saez (2014). The meritocracy and advantage indices offer new explanatory power, exemplified in our exercise examining voting patterns in US presidential elections. Including our meritocracy and advantage indices improves the explanation of voting behaviour in presidential elections beyond what can be explained by income, inequality, and intergenerational mobility alone. This finding suggests that the model structure itself adds valuable information to our understanding of regional socio-economic dynamics and their influence on voting behaviour. Thus, using our model to interpret the data at the regional level has revealed new and meaningful insights into the characteristics that define these regions.

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