Parental Wealth and Children's Outcomes over the Life-Course in Brazil*

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Abstract. Parental wealth –as distinct from income, education and other socioeconomic resources—may play a large role in children's socioeconomic outcomes. Parental wealth could be particularly relevant in developing countries, characterized by economic volatility, a weak social safety net and limited access to credit. Using a propensity score matching approach, we examine the influence of parental wealth on adult children's educational attainment, school quality, occupational status, consumption level and wealth holdings in Brazil. Findings indicate a substantial effect of parental wealth on all these outcomes, with a positive effect of even modest levels of wealth holdings. The effect of parental wealth on occupational status is largely mediated by wealthy parents' investment in more and better education for children. In contrast, the effect on offspring's consumption and wealth is largely unmediated by labor market resources and rewards, suggesting direct transfers. Among couples, husband's parents' wealth has a stronger impact on economic wellbeing than wife's parents' wealth suggesting a gender-asymmetric pattern of parental influence. Sensitivity analysis indicates that hidden bias emerging from unobserved confounders should have to be unlikely large to question inference of a causal effect of high levels of wealth (approximately the top quintile), although the influence of low levels of parental wealth may be more susceptible to hidden bias.

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1. Introduction. Household wealth is important for a number of reasons. It provides a means of raising long-term consumption, either directly by dissaving, or indirectly via the income stream of investment returns to assets. By enabling consumption smoothing, wealth ownership helps insulate households against adverse events, especially those that lead to a reduction in income, such as ill health, unemployment, or simply growing old. Furthermore, household wealth provides a source of finance for entrepreneurial activities, either directly or by use as collateral for business loans. Finally, household wealth may have large intergenerational effects. On the one hand, wealth may play a central role on the attainment and wellbeing of the next generation, by funding investments in children's health, education, and other forms of human capital. On the other hand, it should be critical for the intergenerational reproduction of advantage as it can be directly transferred across generations in the form of inter-vivos transfers and inheritances. The benefits of wealth are less compelling in developed countries that have universal social security systems, adequate social safety nets and a well-developed access to credit markets. But wealth can be crucial in nations that lack these arrangements, which is the case in much of the developing world. And, as we will show empirically, household wealth tends to be less and more unequally distributed precisely in those countries where it could benefit families most.

A growing literature in the industrialized world acknowledges that diverse types of parental resources play different roles in the welfare of children, and emphasize the distinct role of household wealth (Behrman et al 1995, Mayer 1997, Conley 1999, Spilerman 2000). The intergenerational effects of household wealth have been less studied in the developing world, due to the difficulty in measuring household net worth as distinct from other measures of economic wellbeing. To date, attempts to measure wealth in the developing regions of Africa, Asia, and Latin America have considered a diverse range of indicators, including not only real and financial assets with market value but also housing characteristics and facilities, access to service such as drinking water or paved roads, and even social capital, schooling, and other forms of human capital (Filmer and Pritchett 2001, Fay and Ruggieri Laderchi 2005, Attanasio and Szekely 2001).

The extant literature in Latin America suggests that wealth may be a crucial determinant of children's human capital accumulation. Duryea et al (2007) demonstrates that unemployment

shocks increase the probability that children drop out from school and enters the labor force in Brazil, suggesting that some households lack the resources to absorb short-term economic shocks. Flug et al. (1998) show that credit constraints account for as much as 30 percent of the difference in secondary school enrollment rates between Latin America and the industrialized world. While this research has not directly examined the influence of parental wealth, theoretical models suggest that real and financial assets may be a central component of household's permanent income, preventing the premature use of children's human capital in face of economic downturn. In addition to human capital investment, parental wealth may contribute to children's wellbeing by means of direct transfers during critical life-course transitions, such as leaving the parental home or getting married. In such circumstances, assistance provided by parents or simply the additional security of being able to turn to parents in case of need may result in higher living standards or faster wealth accumulation by adult offspring.

This paper examines the influence of parental wealth on a series of children's socioeconomic outcomes throughout the life-course in Brazil. We focus on wealth stores – the stock of assets with actual market value owned by the family – as distinct from other sources of parental advantage. We build upon comparable studies in other Latin American countries, including Chile (Spilerman and Torche 2004, Torche and Spilerman 2006), and Mexico (Torche and Spilerman 2009).

The main challenge in the study of parental wealth effects is the unobserved selectivity problem. Wealth is likely correlated with a range of parental resources and attributes that also affect children's outcomes. To the extent that these factors are unaccounted for by the researcher, they will induce bias in the estimation of wealth effects. In order to address this issue, we use a propensity score matching approach. We match individuals exposed to different levels of parental wealth on a series of covariates to create groups that are observationally similar in every respect except for parental wealth. After matching, the group not exposed to parental wealth offers an adequate counterfactual for those exposed. This method, however, relies only on observed covariates. To the extent that unobserved factors related to parental wealth and to the outcomes of interest –such as cognitive ability, future orientation, or tastes– exist, our estimates will still be biased. We implement a sensitivity analysis to assess the magnitude of hidden bias, evaluating how strong the association between a hypothetical unobserved confounder and parental wealth should

be in order to invalidate conclusions about the detected effects, and benchmarking these estimates using the effects of observed covariates.

We proceed as follows. The next section describes the Brazilian context and provides basic information about the distribution of assets in Brazil, using an international comparative perspective. We then present the data and methods used in the analysis. Section 4 offers the analysis of parental wealth effects as well as the sensitivity of the estimators. Section 5 concludes.

2. Brazilian context. Brazil has experienced enormous change during the postwar period, transforming from an agrarian society based on coffee production into an urban, industrial one. While in 1940 69 percent of the population lived in rural areas, in 1996 only 22 percent did so, with the rural population stabilizing thereafter. The post-war Brazilian economic expansion was exceptional. Between 1948 and 1980 economic growth reached 8 percent annually (Maddison 1992). Growth was based on an import-substitution industrialization (ISI) model led and funded by the State. The period between the late 1960s to the mid 1970s was deemed the "Brazilian miracle" because the country enjoyed one of the fastest rates of growth in the world (Bacha and Klein 1989). The benefits of economic expansion were not equally distributed, however. Brazil remained one of the most unequal countries in the most unequal region of the world, with a Gini coefficient of about 0.6 over the 1970s and 1980s; and poverty stayed very high throughout the post-war period, afflicting 46 percent of the population in 1976 (Rocha 2003).

The economic miracle was followed by stagnation and spells of hyperinflation during the 1980s and 1990, resulting from the exhaustion of the ISI model and a deep recession affecting the region, known as the "debt crisis". GDP per capita increased just 1.9 percent yearly on average between 1981 and 1999. The crisis was followed by structural adjustment reforms including trade opening, liberalization of markets and prices, and privatization (Edwards 1995). Reforms started comparatively late in Brazil. Whereas other countries in Latin America started transforming their economies in the early or mid-1980s, the same process started in Brazil only in the early 1990s (Kakwani et al 2010). Only in 1994 inflation was finally controlled, and poverty and inequality started to decline, a process that accelerated in the 2000s under a social-democratic administration.

The country recovered and has experienced substantial growth since the 1990s, with an increase in GDP per capita from U$7,241 in 1993 to U$8,471 in 2005 (Ravallion 2010). Growth has been accompanied by a novel decline in income inequality. Inequality started to decline in the 1990s, timidly at first, and rapidly during the 2000s. Between 1999 and 2007 the Gini dropped from .59 to .55, as a result of declining returns to schooling, public transfers to the poor and lower-middle class, and a reduction of the marked disparities across regions and racial groups (Ferreira et al 2008, Barros et al. 2010). Combined with economic growth, the reduction of inequality has lifted millions of Brazilians out of poverty, with the population living on less than $2 a day declining from 24.7 percent in 1993 to 18.3 percent in 2005 (Ravallion 2010). Although current levels of inequality are high for international standards and poverty is more prevalent than in countries with per capita income levels similar to Brazil (Beghin 2008), they are the lowest ever recorded in the country's history and living conditions have improved for millions of families over the last decade.

The decline in inequality is partly the result of educational expansion. According to official data, the Brazilian population 25 years or older with less than four years of schooling dropped from 75 percent in 1960 to 42 percent in 1991 and 28 percent in 2005, while the percentage that have completed high school expanded from 1.1 percent in 1960 to 7.5 percent in 1991 and 12.3 percent 2005. In spite of this expansion, levels of educational attainment in Brazil are remarkably low, not only when compared to industrialized countries, but also to other Latin American nations (Hasenbalg and Silva 2000). Only during the 1990s did primary education become universal, and access to secondary school is still limited at 78 percent of the relevant-age group (Unesco 2008). Problems such as high rates of grade repetition, child employment, and poor educational quality remain (Birdsall and Sabot 1996).

As educational access has expanded to traditionally-excluded lower classes, disparities in the quality of education have become more noticeable. The most important source of horizontal differentiation in K-12 education is the distinction between private and public schools, with test scores much higher in fee-paying private institutions serving advantaged families (Albanez and Franco, 2002; Alvez, 2007, Franco et al. 2007). This source of differentiation disappears at the post-secondary level, as the best post-secondary institutions are public universities entirely free and funded by public monies (Castro 1994). Because university admission is based on a standardized

examination, a common strategy used by advantaged parents is to invest in private primary and secondary school, in order to facilitate entry into free public universities.

Social insurance and the social safety net have also expanded substantially over the last decades, but the system is still far from universal, and quality is heterogeneous. As late as the mid-20th century, only a minority of urban formal workers had access to social insurance. Coverage expanded rapidly during the industrial development of the 1960s, benefitting mainly urban formal workers. Access began to include rural populations only in the 1970s, although progress was impeded by the fiscal crisis of the 1980s (McGuire 2001, Lobato and Burlundy 2001). It was not until the 1990s that there were marked improvements; with the launching of unemployment insurance program in 1986 (Chahad and Fernandes 1986) and the universalization of old-age pension in 1991 (Carvalho-Filho 2008). Social spending increased significantly between 1986 and 1995, and targeting of social programs improved markedly beginning in the mid-1990s (Draibe et al. 1995, McGuire 2001). In the early 2000s the *Bolsa Familia* ("Family Allowance") was implemented. *Bolsa Familia* is a conditional cash transfer program that provides financial aid to poor families on condition that children attend school and receive vaccination, which currently benefits about 25 percent of the Brazilian population (Hall 2004). Given that our analysis considers a sample of adult Brazilians who grew up between the 1960s and early 2000s, when the social protection systems in place were relatively weak and benefitted a minority of urban formal workers only, we hypothesize that parental wealth, even modest levels, may play a substantial role on children's educational and socioeconomic attainment.

Not surprisingly given high levels of inequality and, until recently, limited redistribution, intergenerational mobility is limited in Brazil. Brazil features one of the strongest intergenerational educational correlations in the world (Hertz et al 2007, Behrman et al 2001), which has not declined in spite of educational expansion (Ribeiro 2009). The intergenerational income correlation is also very high, reaching about 0.6 - 0.7 (Ferreira and Veloso 2006, Dunn 2007), which compares with a figure of about 0.3 - 0.4 in the industrialized world (Solon 2002, Jantti et al 2006)[1]. The strong dependence of adult children's economic wellbeing on parental resources is not driven solely by

[1] The Brazilian analyses are not fully comparable because, lacking information about parental income in surveys, they use a two sample instrumental variable approach, which may produce somewhat inflated measures of association insofar as the net influence of the variables used as instruments – for example, education—is also captured.

education. In fact, recent research suggests that as much as 60 percent of the influence of parental resources on economic attainment is direct and unmediated by labor market resources such as schooling or employment status (Bourgignon et al 2007). Moreover, the direct influence of parental advantage on children's attainment appears to have increased over time (Torche and Ribeiro 2010).

Wealth Distribution in Brazil: High income inequality suggests high levels of wealth concentration, while limited mobility implies that parental wealth may play an important role in the intergenerational transmission of inequality. Research on the distribution of wealth is scarce, however, given the lack of wealth data based on tax records, investment income, or sample surveys (Davies et al 2008). Some attempts have been made to estimate levels of private wealth on the basis of national accounts (Morandi 1998), post-mortem estate inventories in some regions of the country (Frank 2005); or values of primary residences on the basis of rent payments (Tafner and Carvalho 2007). Evidence is however incomplete and estimation is usually based on untested assumptions.

An indirect strategy to evaluate wealth distribution is to combine information about income distribution with an estimate of the relationship between income and wealth inequality based on countries with both sets of data. Using this approach, the wealth Gini for Brazil was estimated to be 0.78, one of the highest in the world (Davies et al 2008). Pinto (2006) estimates the distribution of wealth using estate data in Campinas, a city with a population of about a million people using the estate-multiplier method (which amounts to weighting each estate tax return by the inverse probability of death). He obtains a Gini coefficient of 0.92, which suggests that the figure of 0.78 for the country as a whole is not extreme. Land, historically the main asset owned by the Brazilian population, is highly concentrated, with enormous estates side by side with very small farms dedicated to subsistence production. Land reform was timidly launched in the 1960s but benefitted a small number of poor rural families, and it was extended only in the 1990s (Assuncao 2006). To date, less than 10 percent of the agricultural holdings contain 77 percent of the country's farmland (Cardoso and Helwege 1995), and the Gini coefficient for land concentration has been estimated as .85, which is high in the international context (FAO's World Census of Agriculture, several years).

In order to directly inspect the levels of wealth concentration in Brazil, we use survey data to examine overall levels of ownership of real and financial assets, and their distribution across income groups. Lacking information about the monetary value of those assets, we focus on

ownership rates. The assets considered are financial holdings (stock, bonds, mutual funds, CDs, etc.), real estate, residential property (excluding owner-occupied residence), business, vehicle, and primary residence. These provide the main asset categories distinguished by standard wealth surveys such as the Survey of Consumer Finances in the US (Bucks et al 2006). In order to place Brazil in international context, Table 1 displays the distribution of these asset types across household income levels in Chile, Mexico and the United States.

Table 1 about here

In Brazil, like in other Latin American countries, financial assets are the scarcest and most concentrated of the asset types, with only 3.4 percent of the population owning them. Ownership of financial assets ranges from 2 percent or less for the first four quintiles to 10 percent for the top income category. In contrast to the quasi-linear trend in the United States, the Brazilian (and, generally, Latin American) distribution presents a categorical division separating the top decile from all other income categories.

Real assets are less scarce in Brazil. Given the historical relevance of land ownership in Brazil we distinguish land from ownership of other nonresidential property. Land is slightly more equally distributed than other non-residential property. We find some land ownership even at low income levels, most likely in the form of small subsistence farm property. This pattern sharply contrasts with the Mexican case where widespread agrarian reform following the 1917 Mexican Revolution resulted in access to land ownership among the very poor (Torche and Spilerman 2009). Overall, there is substantial concentration of land and other non-residential property at the top of the income distribution.

With an overall ownership rate of 8.4 percent, Brazil has the lowest rate of business equity among all countries considered. Comparable figures are 17 percent and 13 percent in Chile and Mexico, respectively. Moreover, the distribution of this asset is the least even among Latin American countries, with virtually null rates of ownership among the low-income households. This contrast with other Latin American countries and suggests that the Brazilian “informal sector” may be particularly precarious, lacking even minimal stocks of capital (Henley et al. 2009).

The distribution of vehicle ownership is practically identical among the three Latin American countries compared, and very different from the United States. Not only the average rate of

ownership is very similar – 38.5 percent in Brazil, 35 percent in Chile, and 44.5 percent in Mexico – but they also display a comparable ownership pattern that increases gradually from the lowest to the highest income groups, which contrast with the US pattern of near-universality. One difference must be noticed, in Mexico and Brazil households in the three lowest quintiles have higher rates of vehicle ownership than in Chile. This is probably related to the fact that automobile industry was established earlier in these countries than in Chile, what means that used cars (usually accessible to the lower-middle class) are more commonly found in the two first countries.

Finally, we examine owner-occupied residence, which, for most Brazilian families is the only asset they will ever have access to. The overall rate of home ownership is very similar in Brazil (70.2 percent), Chile (67.5 percent), Mexico (70.3 percent) and the United States (66.3 percent), but the distributions are different. As established by prior research, there is little socioeconomic stratification in access to home ownership in Latin America (Torche and Spilerman 2008). In contrast, in the United States and most industrialized countries the trend is one of a linear increase with income level (Kurz and Blossfeld 2004). Home ownership among the Brazilian poor is likely connected to the high levels of informal tenure in *favelas* and other poor neighborhoods. Indeed, it is estimated that 45 percent of Brazilian homeowners lack legal title to their residence (Regueira 2007, Fernandes 1997). Lack of title reduces the possibility of household to rent or use their residence as collateral for other investments.

In sum, this descriptive analysis shows that financial and real assets are scarce and unequally distributed in Brazilian society; with almost half of households not owning any asset at all (this calculation excludes owner-occupied residence). Brazil is not an outlier in the Latin American context, however. Similar levels and patterns of wealth distribution emerge in Mexico and Chile, suggesting a comparable pattern among middle-income Latin American countries. As suggested by the literature, wealth may be central in retaining children in school in the context of economic shocks or in providing access to a higher-quality education. Wealthy parents may also make direct transfers of resources during early adulthood, perhaps related to important life-cycle events such as getting married or having a child. These transfers may contribute to children's living standards or wealth holdings, net of parental investment in children's human capital. In a context of limited access to credit and (until recently) a weak social safety net, even modest levels of parental wealth

may be consequential for children's outcomes. We now turn to the empirical examination of these issues.

3. Data, Variables and Methods

Data: We use data from the Brazilian "Survey of Social Dimensions of Inequality" (Pesquisa de Dimensões Sociais das Desigualdades, PDSD hereafter). The PDSD is a representative survey of the rural and urban Brazilian population, with exception of rural North region, which accounts for 3.3 percent of the total population. Collected between October and November of 2008, the PDSD is a fully probability, stratified, multistage sample of 8,048 households. The sampling follows a three-step probabilistic selection procedure. First, counties are selected, then micro-regions within counties are chosen and, finally, households are selected within micro-regions. Basic educational and employment information is collected for all individuals 10 years or older living in the household. A larger set of questions, including parental characteristics and conditions when growing up, is applied to the household head and spouse.

For the analysis presented herein we have constructed two samples. The first one includes all heads of household and spouses/partners 25 - 64 years old who lived in urban areas during their childhood. This sample includes 5,597 individuals and is used to analyze the effect parental wealth on individual educational, quality of school attended and occupational attainment. We restrict the sample to heads and spouses because parental information is available only for them. The restriction to individuals who grew up in urban areas is determined by our parental wealth measure. Given that extremely small farming plots were prevalent among poor rural parents, we would not be able to use land ownership as a reliable indicator for parental wealth if we included those growing up in rural areas – in fact, when respondents with rural origins are included, land ownership is *negatively* correlated with ownership of all other real and financial assets.

We then select married and cohabiting individuals in which the male partner is 25-64 years old, and both partners grew up in urban areas, to analyze the effect of parental wealth on the couple's consumption level and asset holdings The "couples sub-sample" comprises 3,036 individuals. For simplicity we sometimes refer to husband and wife instead of male and female partners, but we include cohabiting couples in all analyses. We restrict our sample to married/cohabiting couples because unpartnered individuals of the selected age range comprise a heterogeneous set of circumstances: About 26 percent of them are single women, most of them

raising children, 47 percent are divorced, widowed, and separated women, and the remaining 27 percent are men. The substantial heterogeneity of this group, probable idiosyncratic patterns of parental assistance among some of them, and likely depletion of resources resulting from previous union dissolution among others renders interpretation of the findings difficult. For the "couples" sample, parental wealth and socioeconomic resources of both members of the couple are included to ensure that the model is properly specified. In these models, we alternatively treat husband's and wife's parental wealth as treatments, controlling for the other partner's parental wealth and other resources, in order to isolate the effect of interest.

As it is standard in cross-sectional surveys with retrospective data on parental characteristics, there is a non-negligible proportion of missing cases for some variables describing parental resources. Missing data for parental education and occupation vary between 11 and 29 percent of all cases. Listwise deletion of all cases with missing data in any variable would result in an approximately 40 percent reduction in the sample size. To retain these cases, we used a multiple imputation algorithm to assign missing values (King 2001). This procedure assumes that data is missing at random (MAR) i.e. that, after accounting for covariates there is no selectivity in the pattern of missing data. Five datasets are created, and parameter estimates and standard errors are then combined. The main consequence of this procedure when compared with simple regression imputation is that it shrinks confidences intervals making statistical tests more conservative.

Variables: We examine the effect of parental wealth on a series of children's outcomes across the life-course. These include educational attainment, educational quality, occupational status, consumption level, and wealth holdings. Educational attainment is measured as total number of years of schooling completed, and quality of education is captured by the dichotomous distinction between private and public school. Occupational status is operationalized by the International Socio-Economic Index ISEI (Ganzeboom et al 1992). The ISEI ranks occupations using a single hierarchical scale based on the mean education and income of job incumbents and provides a good proxy for permanent income, depurated from short-term fluctuations.

We measure the consumption level and wealth holdings of households by means of latent indexes that combine information about ownership of a set of assets and durable goods (Filmer and Pritchett 1999, 2001, Sahn and Steifel 2003). We construct these indexes using principal component analysis, a data reduction technique that reduced the dimensionality of the dataset capturing the

variation that is common to all original variables. In practice, this technique amounts to finding a linear combination of weights for the variables that account for most variation in the variance-covariance matrix. For the consumption index we use the following household items: refrigerator, fan, oven, TV, stereo, food processor, washing machine, telephone, microwave oven, air conditioning, cable or satellite TV, and computer. The wealth index is based on asset categories described in table 1, which include financial assets, land ownership, other non-residential real estate, residential property, vehicle ownership, and business ownership, plus savings and checking account[2]. With the exception of checking account, all asset kinds are wealth depositories. In contrast, checking account is a wealth indicator, rather than a store of wealth. Given the low rates of financial penetration in Brazil, however (only 28 percent of the adult Brazilian population has a checking account) we interpret willingness of financial institutions to grant a checking account as a powerful sign of financial solvency and therefore an acceptable indicator of wealth. The principal component analysis is consistent with this interpretation – the preferred solution yields a single dimension into which all indicators converge. Note that home ownership is not included in the wealth index. As explained, given the prevalence of untitled occupation, home ownership is not a marker of advantage and it does not empirically correlate with other wealth indicators.

Consumption and wealth indexes provide a continuous, one-dimensional measure of economic wellbeing. By relying on the variance that is shared across items considered, they reduce the confounding of hierarchical measures of living standards and lifestyle choices or idiosyncratic determinants of any particular item --for example air conditioning in hot weather areas, or not owning a TV based on taste. A key benefit of the indicators included is that they provide discrimination across the entire socioeconomic hierarchy, including those among the less well-off (for example, TV ownership), and among the wealthy (for example, computer ownership) (McKenzie 2005).

The main predictor of interest is parental wealth, measured using an index similar to the one used for the current generation. Given that a large proportion of parental households have zero wealth, and that we are interested in capturing potential non-linearities in the effect of parental

[2] Barros and Victora (2005) produce an asset indicator of wealth using a similar methodology and based on the Brazilian Census. No distinction between consumption and wealth dimension of wellbeing is made or empirically tested, however.

wealth, we create an ordinal variable based on quasi-continuous index. We distinguish parents with no wealth (approximately 54 percent of our sample), low levels of wealth (24 percent) and high levels of wealth (22 percent). Roughly, then, the "no wealth" category identifies the first three wealth quintiles, "low wealth" comprises the fourth quintile, and "high wealth" identifies the top wealth quintile. We include diverse covariates capturing parental resources and conditions when the respondent was growing up (measured when the respondent was approximately 15 years of age). We include educational attainment of father and mother, measured as years of completed schooling, father's and mother´s occupational status operationalized by means of the ISEI and parental home ownership. Given that more than half of mothers did not work for pay when the respondent was growing up, we include a dummy coded 1 if mother was not employed to retain them in the sample. We capture family structure by means of an indicator coded 1 if respondent lived with both parents at age 15 and zero otherwise, and account also for the number of respondent's siblings. Control variables also include respondent's age using a quadratic formulation, gender, and race with dummies for whites, browns and blacks. Substantial research suggests a gradient across the color line with outcomes for black and browns similar to each other and substantially worse than whites (Telles 2004). Descriptive statistics for all variables are presented in Appendix Table 1.

Methods: Our central concern is whether the differences in individual socioeconomic outcomes can be attributed to parental wealth. To the extent that high-wealth and low-wealth families differ in terms of other characteristics consequential for children's outcomes, the claim about causal influence of parental wealth is vulnerable and the policy implications are inconclusive. This problem is variously known as selection bias, confounding, omitted variable bias and unobserved heterogeneity. For simplicity, let us conceive of parental wealth as a dichotomous treatment so that W_i=1 identifies individuals with wealth-owning parents and W_i=0, individuals whose parents did not own wealth. If we denote the outcome of interest by Y, each individual has two potential outcomes, y_{i1} for the treatment state i.e. being exposed to wealth-owning parents, and y_{0i} for the control state, exposure to non wealth-owning parents. The individual-level causal effect is usually captured by the linear difference in the potential outcomes ($y_{1i} - y_{0i}$). Naturally, it is impossible to simultaneously observe both counterfactual outcomes for any single individual, a limitation known as the "fundamental problem of causal inference" (Holland 1986). It is possible,

however, to estimate a population-level causal effect of parental wealth, provided that the control cases are similar to treated cases in every respect, except for parental wealth status.

Standard multivariate models such as regression provide a way to define adequate counterfactuals. By controlling for observed potential confounders, treatment and control groups are balanced with respect to these variables. The unbiasedness of regression estimates however relies on the adequacy of the linear functional form, and its generalizability relies on the assumption that the data are well supported, i.e. that there are treatment and control cases throughout the entire joint distribution of potential confounders. Matching provide a semi-parametric alternative approach, which is less dependent on these assumptions. In the simplest version of exact matching, the sample is stratified on potential confounder x, and treatment and control cases are matched on the basis of x to create comparable groups. Within-stratum effects are obtained and then combined by weighting by the relative number of observations to produce a population-level effect.

Implementing this strategy is straightforward with a single categorical confounder. If confounders are continuous or as the number of confounders increases, stratification becomes difficult and data sparseness becomes more common. An alternative strategy is to match treatment and control cases on the basis of the probability that a particular individual will receive the treatment, a single number known as the propensity score λ (Rosenbaum and Rubin 1983, 1984, Rosenbaum 2002 ch. 10). Matching based on the true propensity score would, in expectation, result in balance on all covariates, both observed and unobserved. Naturally, the true propensity score is not known in observational studies, so researchers have to rely on the propensity score estimated on the basis of observed covariates, λ(x). Matching on the estimated propensity score eliminates any relationship between the covariates and assignment to the treatment, and hence eliminates the possibility of bias from these variables. The estimated propensity score can be defined as:

$$\lambda(x_s) = \frac{\sum_{i=1}^{n_s} \pi_{si}}{n_s}$$

where π_{si} is the probability to be assigned to treatment for individual *i* in stratum or subclass *s* formed on the basis of all observed covariates, n_s is number of observations in stratum *s*, and *x* identifies all covariates.

Propensity score matching and multivariate regression are similar methods. Both provide weighting strategies that ensure comparability across treatment groups. If all assumptions involved in regression estimation are met, in particular if there is good support for the data and if the functional form specification is correct, there is little gain from using propensity score matching. If these assumptions are not met, matching offers several advantages. First, a matching strategy explicitly evaluates the common support (overlap), between treatment and control groups i.e. the extent to which the entire space defined by pre-treatment covariates includes treated and control cases. In some empirical circumstances, treated and untreated cases are so different in terms of observed covariates that there are areas of the propensity score distribution of treated cases for which no control cases exist or, conversely, areas of the control distribution for which no treated cases exist. While regression also restricts inference to area of common support, it is not evident to the researcher what this area is. Furthermore, matching does not rely on any parametric assumptions about the relationship between potential confounders and the outcome of interest. While a decision has to be made about the functional form of the model predicting treatment status, it is always possible (and desirable) to verify that the covariates are balanced after the matching procedure.

Second, the weighting strategy used to adjust the estimator on the basis of observed covariates differs across methods. Regression weights observations according to the variance of the treatment status, assigning more weight to covariate cells with the largest variance in treatment status. In the case of a dichotomous treatment, larger weight is placed in cells for which there is equal numbers of treatment and control observations (Angrist and Pischke 2009: 69-77). As a result, regression estimates do not rigorously define any specific average treatment effect (DiPrete and Gangl 2004: 275). In contrast, a matching strategy creates samples representing specific populations of interest, and evaluates the effect of the treatment among these populations. If the interest is to measure the effect among those who receive the treatment, controls will be weighted so that they represent the treated sample. If the substantive interest is, instead, those who do not receive the treatment, weights can be implemented so that the treatment observations represent the control group. The unconditional average treatment effect can easily be obtained as a weighted average of the treatment effect on the treated and the untreated, where the weight are their relative size (Morgan and Winship 2007: 103-104). The difference between matching and regression

approaches is irrelevant if the treatment effect does not vary across the distribution of covariates but it will matter if, as it is usually empirically observed, the effect of interest varies across populations of interest.

We implement the propensity score matching estimation in the following steps. First, we estimate propensity scores based on potential confounding covariates using a binary logit model. Because our treatment is an ordinal variable with three categories, we estimate three pairwise contrasts: The probability of low versus no parental wealth (excluding high wealth), the probability of high versus no parental wealth (excluding low wealth), and probability of high versus low parental wealth (excluding no wealth). This strategy allows us to flexibly capture potentially different effect of different levels of parental wealth without imposing constraints such as proportional odds in the context of an ordered nonlinear model. Note these three contrasts could be obtained by means of a multinomial nonlinear model, but we keep the models distinct in order to create proper counterfactuals. Second, we match treatment and control groups based on their propensity scores for each dichotomous contrast. We use one-to-one nearest neighbor caliper matching with replacement. We set the caliper size to .025, which restricts the matches to have propensity scores within 2.5 percentage points from the treated case[3]. Third, we examine the achieved balance of covariates across treatment and control groups to ensure that samples will have little difference across groups in terms of potential confounders. Fourth, once balance is achieved, we evaluate the causal effect of parental wealth by comparing the outcomes of interest among the treated cases with those of comparable matched control cases. In this paper, we focus on the effect of the treatment on the treated, i.e. the effect of a particular level of parental wealth among those who are exposed to such level. We define distinct control groups based on other levels of parental wealth.

In spite of its advantages, propensity score matching estimates have limitations. If balance across treatment groups is not achieved, remaining effects of unbalanced covariates may bias the outcome of interest. We further control for covariates by means of a regression model in the matched sample, in order to reduce any potential misspecification in the assignment or the substantive model (Rubin and Thomas 2000, van der Laan and Robins 2003). In every case, our

[3] We also used other matching algorithms include exact matching, kernel matching, and interval matching (Morgan and Winship 2007), and the results are substantively identical.

results are similar to propensity score estimators without covariates, so only the latter are presented here. More seriously, as regression models, propensity score estimation relies on the ignorability assumption, which indicates that, conditional on covariates treatment allocation is independent of potential outcomes (Rubin 1977, Rosenbaum and Rubin 1983)[4]. Even after matching, important unobserved differences may remain between treatment and control groups, so that individuals who appear comparable may not be. This raises the problem of hidden bias. To address this potential problem, we conduct a sensitivity analysis to evaluate how strongly an unmeasured confounder should affect selection into treatment in order to annul the conclusions about a causal effect from a matching analysis. We implement the Rosenbaum bounds sensitivity analysis (Rosenbaum 1987, 2002 chapter 4). This method assumes that, conditional on observed confounders, individuals differ on the basis of an unobserved variable so that some have an odds of treatment that is up to Γ>=1 greater than the odds for other individuals. For example if Γ=1.5, some individuals are 50 percent as likely to receive the treatment, due to unobserved pre-treatment differences not accounted for by observed covariates. For each value of hidden bias measured by Γ, the sensitivity analysis computes end points of the bounds for the significance level of the test of the null hypothesis that the treatment is without effect using the Wilcoxon signed rank test for matched pairs. Γ=1 describes the situation of no hidden bias, i.e. no association between unobserved confounders and the odds of treatment assignment. In such situation, a single p-value is obtained, the p-value for a randomized experiment. For Γ>1 one obtains an interval of p-values reflecting uncertainty due to hidden bias.

As Γ increases, the interval becomes larger and eventually it becomes uninformative, including both large and small p-values. Given that our interest is to determine the value of Γ at which the interval becomes uninformative – i.e. the point at which the p-value interval that includes values larger than .05 for a confidence level of 95 percent – we focus on upper bound of the significance test interval (p+).

It is important to note that the Rosenbaum bounds strategy provides a very conservative test of hidden bias, because it is based on the assumption of perfect association between the unobserved confounder and the outcome of interest (Rosenbaum 2002: 111). The value of Γ

[4] This assumption is variously known, depending on discipline as unconfoundedness, conditional independence, exogeneity, and selection on observables.

associated with a p+ value >.05 indicates that the confidence interval for the treatment effect on the outcome of interest would include zero if an unobserved confounder caused the odds ratio of treatment assignment to differ between treatment and control groups by Γ, *and* if the confounder's effect on the outcome was so strong as to almost perfectly determine whether the outcome would be higher for the treatment over control case in each pair of matched cases in the data. If the confounding variable had a weaker effect on the outcome variable, the confidence interval for the outcome would not contain zero. To assess the magnitude of hidden bias expressed by specific levels of Γ that would cause us to question our findings of a causal effects of parental wealth on the outcomes of interest, we benchmark such magnitude in terms of the equivalent effects of observed covariates for which we know the impact on assignment to treatment from our propensity score model.

4. Results. Logit estimates for the prediction of parental wealth levels using all potential confounders confirm the substantial correlation between parental socioeconomic resources and treatment status. Table 2 shows that parents that are more advantaged in terms of education, occupational status, home ownership, and race are more likely to be wealthy. Models for couples include a complete set of socioeconomic indicators for both sets of parents. The model also shows a substantial association between wealth levels of both sets of parents, a finding consistent with the strong marital sorting prevalent in Brazil (Lam and Schoeni 1993). In spite of elevated colliniarity across parental variables, higher levels of wealth for both sets of parents are significantly associated with other indicators of socioeconomic advantage. Comparison across the three relevant contrasts – no parental wealth versus low wealth, low wealth versus high wealth, and no wealth versus high wealth – suggests, as expected, a monotonic increase in wealth level across other indicators of economic advantage. Table 2 indicates that no-wealth, low-wealth and high-wealth parental households are different from each other in terms of a battery of socioeconomic and demographic characteristics, which highlights the need to achieve covariate balance across groups to estimate causal effects.

Table 2 about here

Table 3a presents regression models to evaluate the effect of parental wealth on children's outcomes. These models provide benchmarks against which to assess causal estimates obtained from the propensity score matching approach, and provide information on the association between

other covariates of interest and socioeconomic outcomes in Brazil. Results for five outcomes are presented: educational attainment, school quality (private vs. public), occupational status (ISEI), consumption, and wealth holdings. The first model in table 3 displays the association between parental wealth (distinguishing three ordered categories with no wealth as baseline for comparison) and adult children's years of schooling. Accounting for observed covariates, individuals whose parents have low and high wealth are predicted to attain, respectively, .51 and .97 more years of schooling than those whose parents have no wealth. Given that the mean years of schooling in our sample is 8.49, this is a very large difference.

Table 3a about here

Other noteworthy findings emerge from the analysis. The association between age and educational attainment is quadratic, likely driven by a combination of age and cohort effects. It signals increase in attainment in early adulthood, perhaps driven by an upgrading of schooling beyond the normative school-completion age, and a decline among senior cohorts results from the substantial educational expansion in recent decades. Both parents' education is strongly correlated with children's educational attainment. Consistent with other research from the region (e.g. McEwan 2004, Ribeiro 2009), the magnitude for mother's education is much larger. Father's occupational status displays a positive association with offspring's educational attainment suggesting the relevance of economic in addition to educational household resources. Interestingly, mother's engagement in paid work when the respondent was growing up has a negative association with respondent's educational attainment. Given similar level of economic wellbeing, maternal paid work may result in time constraints detrimental for the child. Number of siblings is strongly negative, consistent with previous research in Brazil and most middle-income and industrialized countries (Psacharopolous and Arriagada 1989, Lu and Treiman 2008) and presumably driven by the dilution of limited parental resources. Parental home ownership displays an insignificant association with educational attainment, which is consistent with the fact that home ownership is not a marker of economic advantage in Brazil and, for a substantial proportion of homeowners; it is not associated with formal property rights. After controlling for socioeconomic factors, racial disparities remain. Whites have, on average, an advantage of about half a year of schooling compared with blacks, with no significant differences between blacks and browns.

Parental wealth affects also the access to private school, but this effect materializes only for the K-12 level, where high parental wealth results in an increase of 99% in the odds of attending private school. As indicated, in the Brazilian context public universities are not worse-quality (and may be, on average, better quality) than private ones so that a common strategy among wealthy families is to invest in private K-12 school so that children gain access to elite public institutions. Consistently, no effect of wealth is found among the selected population that attains post-secondary schooling. At the K-12 level, only high (but not low) levels of wealth have a significant impact on access to private school, probably a result of the high tuition costs of private institutions.

Parental wealth is also strongly related to adult children's occupational status. Accounting for the aforementioned controls, individuals with low and high parental wealth attain an occupation with a status level 3.08 and 1.58 points higher, respectively, than those whose parents did not have wealth (model 1). These magnitudes represent, respectively, 0.2 and 0.1 standard deviations of occupational status. The observed association between parental wealth and children's occupational attainment may be at least partly mediated by paternal investment in quantity or quality of schooling. To assess this hypothesis, model 2 adds these potential mediators to the model. The coefficients associated with low and high parental wealth remain statistically significant but decline by 54 and 65 percent, respectively, suggesting a powerful mediating role of children's formal human capital. The control by presumed mediators should be interpreted as suggestive only, however, given the difficulty of identifying a proper counterfactual when post-treatment variables are accounted for (Gelman and Hill 2007).

The analysis of children's consumption levels and wealth holdings considers married or cohabiting couples (Table 3b). Pronounced marital sorting will result in a strong correlation between wealth holdings of both sets of parents. Consequently, the coefficient for parental wealth of one member of the couple would be biased if the characteristics of the other member's parents are not accounted for. If, as it is likely, the association between partners' parental wealth is positive, the bias will result in overestimation of the effect of parental wealth. To address this issue we include a full set of parental characteristics for both sets of parents in the "couples" models. Our models include two specifications. Model 1 includes both partners' parental wealth terms and a full set of controls. Model 2 adds presumed mediators for the impact of parental wealth –educational

and occupational attainment of the respondents and of their partners—to ascertain the mechanisms for the beneficial impact of parental wealth.

Table 3b about here

Parental wealth displays a substantial association with consumption and wealth of adult offspring, even after a full set of controls for parental resources are included (model 1). Given that consumption and wealth indexes lack a concrete metric, we examine the effect of parental wealth in terms of standard deviation units. A strong association between parental wealth and the couple's consumption level emerges, with wealth holdings of both sets of parents relevant for the couple's wellbeing. Children's consumption increases by 0.23 standard deviations if husband's parents have low wealth compared to no wealth, and another 0.10 standard deviation if parents have high wealth. Comparable figures for the impact of wife's parental wealth are .23 and .17 additional standard deviations on offspring's consumption level. Parental wealth appears to be also critical for the couple's wealth holdings. If husband's parents had low as opposed to no wealth the couple enjoys an increase of .24 standard deviation in wealth holdings, while having parents with high wealth results in a .35 standard deviation increase compared to parents with no wealth. The comparable figures for wife's parental wealth are .11 and .33 standard deviation, with the former figure statistically insignificant.

The strong association between wealth of both sets of parents and children's wealth and consumption levels is impressive given the high level of correlation across parents. With the exception of the insignificant influence on children's wealth levels of low versus no wife's parents' wealth, the parental wealth coefficients are substantial. Evidence of gender asymmetry in the intergenerational transmission of advantage emerges, however, with the association between the male partner's wealth and the couple's consumption and wealth levels consistently stronger than the association for female partner's parents. Model 2 accounts for years of schooling and occupational status for both members of the couple (retaining wives not in the labor force by means of an indicator variable), factors likely mediating the impact of parental wealth. After accounting for these factors, the magnitude of the parental wealth coefficients is reduced substantially for wife's parents and only marginally for husband's parents. For the couple's consumption level, the coefficient associated with high and low husband's parental wealth drop only by 21 percent and 16 percent respectively and remain statistically significant. Comparable

declines for the wife's parental wealth coefficients are 45 percent and 44 percent respectively and only the difference between high and no wealth remains significant. A similar pattern is found for the prediction of the couple's wealth holdings. Parameter estimates for high and low husband's parents' wealth drop by 17 percent and 11 percent, staying highly significant, while the decline for wife's parental wealth turn the terms insignificant.

These results suggest different patterns for the influence of parental wealth in Brazil. Parental assets play a substantial role in the ability to retain children in school and to afford a higher-quality private education. Children's attainment of more and better education in turn, largely mediates the impact of high parental wealth on occupational status. The situation is different when it comes to children's consumption and wealth. In these domains, there is indication of gender asymmetry. The influence of husband's parents' wealth is stronger and more likely to be direct, unmediated by the children's educational and occupational attainment. This suggests that parents favor direct assistance to their male married/cohabiting children. This does not appear to be compensated by stronger payoff of wife's human capital in the labor market – as indicated in table 3b, the returns to schooling and occupational status are smaller for wives than for husbands.

The previous analysis refers to wealth influences, but we cannot rule out the unobserved selectivity of those with high-wealth parents. To move closer to an assessment of causality, we now turn to the propensity score matching specification. Given that the treatment has three ordered categories – high, low and no parental wealth – three pairwise comparisons are tested for every outcome: high versus low wealth, high versus no wealth and low versus no wealth (we remind the reader that high parental wealth refers to the top quintile, low wealth comprises the next quintile, while low wealth identifies the remaining three lower quintiles). This strategy allows us to test the effect of each contrast using an adequate counterfactual group. Table 4 evaluates covariate balance by presenting the mean for each preexisting covariates in the treatment and control group after matching, as well as the statistical significance of the difference in post-matching means across treatment groups. We present mean comparisons for the "all individuals" and "married/cohabiting couples" samples separately. In the latter sample, we examine covariate balance for two distinct treatments: husband's parents' wealth and wife's parents' wealth. Table 4 indicates that after the matching procedure, treatment and control samples are highly balanced, with minimal differences in the means of observed demographic and socioeconomic covariates.

Table 4 about here

Having produced balanced samples, Table 5 reports the propensity score estimates of the effects of parental wealth on adult children's socioeconomic attainment (full models are presented in appendix 2 [only exogenous predictors] and appendix 3 [exogenous predictors and presumed mediators]). Appendix tables 2 and 3 show that all outcome-specific matched samples have strong common support, ranging from 91.2 percent to 100 percent. This ensures that findings from this analysis apply to the entire population of treated individuals. Matching estimates show a strong positive effect of parental wealth on all outcomes considered. With respect to educational attainment, the matching estimates report a statistically significant effect of parental wealth, suggesting that those favored by high-wealth parents have 1.4 more years of schooling than their matched counterparts with no parental wealth, and the difference between having parents with low versus no wealth reaches .48 years of schooling.

Wealth also makes a difference in the access to K-12 private school. Having parents with high wealth vis-à-vis low wealth increases the proportion of K-12 private enrollment by a large 8.6 percent (from 11.5 percent to 20.4 percent, according to Appendix 2). No difference exists between low and no wealth, supporting the claim that substantial levels of assets are required to access expensive private school. Parental wealth does not affect access to private post-secondary education among high school graduates, however, consistent with the elite status of public universities. With respect to adult children's occupational status, those favored by high parental wealth attain an occupation with a status about 5 points higher than those with no wealth, while the difference between low- and no- parental wealth is 1.6 points. Model 2 suggests that this effect is entirely mediated by parental investment in offspring's human capital. Once controlling for years of schooling and private school, the influence turns statistically insignificant.

Table 5 about here

The story is different when we examine consumption and wealth holdings of adult children. The difference in consumption level between those whose parents had high and low levels of wealth is substantial, with the difference between high and low levels of wealth insignificant. For example, if the husband's parents have high versus no wealth, the couple can afford a level of consumption .36 (1.58/4.44) standard deviation higher, and if the wife's parents have high wealth, the increase is .40 standard deviation in consumption level. When potential mediators are

accounted for, the influence of parental wealth declines only marginally. For the comparison between high and no wealth the decline is 6% for husband's parents' wealth and 31% for wife's parents. The influence of parental wealth on children's asset holdings is stronger using the metric of the standard deviation. First, only the contrast between high and no wealth is significant. If the husband's parents have high wealth, the couple has on average .46 standard deviation higher wealth. A comparable .47 standard deviation increase is associated with high levels of wife's parents' wealth. The aforementioned gender asymmetry detected in the regression analysis emerges again. The influence of husband's parental wealth is stronger, and, more noticeable, the effect does not decline at all after controlling for mediators, indicating a direct pattern of influence. In contrast, the influence of wife's parental wealth appears to be largely mediated by parental investments in the daughter's human capital.

By creating groups of observationally similar individuals with different levels of parental wealth, the propensity score approach indicates that wealth has a substantial effect on children's outcomes. The influence is large for offspring's years of schooling and private school attendance. Such influence largely mediates the effect of parental wealth on children's occupational attainment. In contrast, the effect on offspring's consumption level and wealth holdings appears to have a large direct component, particularly for husbands' parents, signaling a preference for male children as recipients of transfers. Propensity score estimates are consistently somewhat smaller than regression estimates, suggesting a potential upwards bias emerging from imposing a linear model.

Sensitivity Analysis. The matching estimates presented here do not account for unobserved confounders in the association between parental wealth and children's socioeconomic attainment. These unobserved factors may include, for instance, cognitive ability, future orientation or entrepreneurial talent. In the likely event of a positive correlation between confounders and both, treatment status and outcomes of interest, the induced bias will result in an overestimation of the positive effect of parental wealth. We now evaluate the sensitivity of the findings to different levels of hidden bias using the Rosenbaum bounds for models with exogenous predictors only (Table 6) and models including presumed mediators (Table 7). We report the upper bound of the significance test (p+) for each level of hidden bias measured as the relationship between a potential unobserved confounder and the changes of treatment allocation expressed as odds-ratios (Γ). In order to provide information about the magnitude of likely confounding, we benchmark these levels of

hidden bias in terms of equivalent effects of observed covariates on treatment status, obtained from models predicting treatment status presented in table 2.

Tables 6 and 7 around here

Table 6 indicates that the effect of high parental wealth compared with no parental wealth is highly robust to the presence of hidden bias, for all outcomes considered. The effect of high compared to low parental wealth, and, particularly, the effect of low wealth when compared to no wealth are smaller and more susceptible to the existence of an unobserved confounder. For the effect on children's educational attainment, the critical level of Γ at which we would question the conclusion of a positive effect of high versus no parental wealth is 2. That is, an unobserved covariate should increase the odds ratio of receiving the treatment by 100 percent ([2-1]*100) in order to question our inference of a causal effect of parental wealth. Using the effect of other predictors as benchmark, we find that for an unobserved confounder to reverse our conclusion, its effect should be as strong as 7 years of mother's schooling, 17 fewer siblings, 20 points (1.5 standard deviation) of parental ISEI, or being white versus being black. This is almost an insurmountable gap. Seven years of schooling is the difference in adult mean education between Sweden and Lesotho, and 20 ISEI points captures is the difference between a psychologist and a dental assistant, or between a street food vendor and a police officer. This substantial difference suggests that wealth has a true effect on children's educational attainment. The influence of parental wealth on primary and secondary private school attendance appears equally strong. For an unobserved covariate to alter the conclusion of a causal effect of high versus no parental wealth, it should be as strong as 5 additional years of mother's schooling, 12 fewer siblings or 14 extra points (a full standard deviation) of father's occupational status. The effect of parental wealth on children's occupational status (ISEI) is somewhat more sensitive to hidden bias – it would take an unobserved confounder equivalent to 4 years of mother's schooling, 10 fewer siblings, or 12 additional points in father's occupational status to question a causal effect of high versus no parental wealth. Even if less robust, this effect is likely not driven by omitted variable bias.

The effect on children's education and occupational status of having high versus low wealth and, particularly, low versus no wealth is more sensitive to hidden bias. For the effect of low versus no parental wealth on children's educational attainment, the critical level Γ= 1.15 which would question the interpretation of a causal effect if the unobserved confounder was equivalent to 2.25

more years of mother's education, 5 fewer siblings, or almost 7 points in parental occupational status. The effect of low versus no parental wealth on children's occupational status is slightly less robust, becoming insignificant at Γ=1.1. This is equivalent to 1 additional year of maternal schooling, 2 fewer siblings or an increase of 3 points in father's occupational status.

We present separate analysis for the influence of husband's and wife's wealth. As it is the case for offspring's education and occupational status, the high versus no parental wealth comparison is most robust to the presence of hidden bias. The critical value of Γ at which we would question the inference about a causal effect of high parental wealth is 1.8 for husband's parents and 1.9 for wives' parents. These effects are equivalent to about 7 years of maternal schooling, or 16 additional points of father's occupational status. The effect of parental wealth on consumption is somewhat more susceptible to hidden bias. In order to question the positive effect of having husband's parents with high versus no wealth, the effect of the unobserved confounder should be equivalent to 5 years of mother's schooling and 11 points of father's status. Comparable figures for wife's parents are 6 years of mother's schooling and 17 points of father's status.

The effect of high versus low, and of low versus no parental wealth are, as it is the case for children's education and occupational status, more sensitive to hidden bias. For this comparison, casting doubts on the effect of husband's parents wealth on consumption would require a variable as strong as almost 4 years of maternal schooling or 5 points in parental ISEI. To annul effect of husband's parents on the couple's wealth, it would take 5 years of mother's schooling or 5 points in father's occupational status. The sensitivity of the effect of wife's parents is comparable. In this case, a variable with an association to parental wealth similar to 3.5 years of mother's schooling or 11 points in father's status will annul the effect on consumption, and a variable comparable in magnitude to 2 years of education or 6 ISEI points will annul the effect on wealth.

Turning now to the effect of parental wealth on consumption and wealth net of children's educational and occupational attainment (table 7), we learn that the net effects that remain significant (high levels of wealth of both parents on the couple's consumption and husband's parental wealth on the couple's wealth holdings) are as robust to hidden bias as the total effects, further proof that these influences are largely unmediated by children's labor market resources and rewards.

Overall, the sizeable magnitude of hidden bias required to question the beneficial effect of high parental wealth (versus no wealth) on every outcome suggests that the effect of wealth on children's socioeconomic attainment is not driven by unobserved covariates. Two additional factors are consistent with this interpretation. First, in order for an unobserved covariate to induce bias, it should be uncorrelated to all covariates already included in the model. To the extent that potential sources of omitted variable bias such as cognitive ability and entrepreneurial orientation are correlated with observed factors such as parental education, home ownership, or family structure, confounding bias will be reduced. Secondly, the bounds herein calculated depict a "worst case scenario" (DiPrete and Gangl 2004) in the sense that they assume a nearly perfect association between the confounder and the outcome of interest. Given the high implausibility of this assumption, the sensitivity analysis provides in fact upper bounds for the potential influence of hidden bias.

5. Conclusions. These analyses address a central but scarcely explored question in stratification research, particularly in the developing world: Does parental wealth, as distinct from income, education, and other socioeconomic resources, affect children's socioeconomic attainment and wellbeing? The question involves two challenges: Distinguishing wealth from other indicators of economic attainment, and separating the effect of wealth from its correlates and determinants. The former challenge is particularly difficult in the developing world, where data on value of the assets is virtually non-existent. We address this issue by constructing a quasi-continuous index combining several stores and indicators of wealth. The latter challenge is more difficult to address. Lacking experimental data or natural experiments resulting in random allocation of wealth holdings among a definite population, we resort to a propensity score matching approach for observational data. In order to address the robustness of our causal estimates in face of hidden bias, we implement a sensitivity analysis, which gauges how strong the effect of an unobserved confounder should be to invalidate our findings.

The findings are straightforward. Parental wealth has a substantial effect on offspring's years of schooling, private school attendance at the K-12 (but not the postsecondary) level, occupational status; and among married and cohabiting children, on their consumption level and wealth holdings. In all cases we observe a monotonic influence so that those with high levels of parental wealth do better than low-wealth parents, which in turn do better than those with no

parental wealth. This is consistent with previous findings in Latin America and with expectations for a society with limited access to credit, a weak safety net, and substantial economic volatility. The fact that parental wealth is in all cases highly consequential – as much or more than traditional indicators of socioeconomic status – suggests that wealth is a central component of the household permanent income, and that excluding it from stratification models routinely results in overestimating the influence of other dimensions of advantage.

The influence of parental wealth on children's educational attainment likely includes a large number of mechanisms, from retaining them in school and reducing the pressure to enter the labor market in case of economic shocks to paying for educational support such as private tutoring and school materials. We cannot directly address these mechanisms with the data at hand, but indirect evidence is consistent with a crucial influence of wealth in reducing the opportunity cost of studying. In fact, our data indicates that the odds of working while studying decline by 24% for parents with high (versus no) parental wealth, net of other parental resources. Furthermore, home ownership does not have a significant association with educational attainment, suggesting that factors such as residential stability, quality of the home environment and neighborhood or unobserved dispositions usually associated with home-ownership by the literature in industrialized countries (Green and White 1999, Haurin et al. 2002) do not emerge from homeownership in the Brazilian context, or that these factors do not contribute to children's schooling. In contrast, actual assets with market value make a difference in keeping children in school and affording private education.

In terms of occupational status, the findings suggest that the effect is largely mediated by parental investments in more and better education for children. A small part seems to be direct, suggesting factors such as parental ability to invest in extra-school sources of human capital, support to open a business or, simply, the availability of a source of income during the job-search period. Ancillary analysis suggests that these mechanisms may be important. High parental wealth results in 43% higher odds of starting independent work, net of other parental resources, and it is also associated with 129% increase in the odds of taking examinations required to take coveted public servant jobs in Brazil when compared to parents who do not own wealth, net of covariates.

Parental wealth contributes also to consumption levels and wealth holdings of married and cohabiting children. Two findings emerging from this analysis are noteworthy. The contributions of

both sets of parents are substantial but husband's parental wealth has a stronger effect, suggesting a gender-asymmetric process of intergenerational transmission of advantage, in which parents favor male offspring. Secondly, when accounting for potential mediators for the parental influence –educational and occupational attainment of both members of the couple—the coefficients associated with husband's parental wealth decline only marginally, suggesting the direct transfer of economic resources. This finding departs from comparable research in Chile and Mexico, which shows that the influence of parental wealth on the couple's consumption level was largely indirect. It suggests that the ability to attain a comfortable standard, as the ability to accumulate assets, strongly depends on direct parental transfers.

Finally, the sensitivity analysis indicates that the effect of high levels of wealth is very robust to bias emerging from the influence of an unobserved confounder. The impact of low levels of parental wealth is –expectedly—smaller and more vulnerable to hidden bias. However, the benchmarking exercise indicates that it would take an effect equivalent to extremely large changes in observed covariates to annul the effect of even modest levels of wealth. Altogether, we interpret these findings as suggesting that wealth is a distinct, important, dimension of intergenerational stratification in Brazil, and that it substantially contributes to the intergenerational reproduction of advantage.

This analysis describes contextual conditions experienced by individuals who are currently 25-64 years of age, i.e. who transitioned to adulthood between the 1960s and the 2000s. The country has changed dramatically during this period and, in particular, it has enjoyed substantial growth, reduction of inequality, and expansion of social insurance systems and the social safety net in the last decade. These transformations suggest that for the youngest cohorts as well as cohorts that will come of age in the near future, the influence of parental wealth may be less critical. Only more research will address this important question about the structural and institutional context of stratification processes in Brazil. Furthermore, many challenges remain in the understanding of the influence of parental wealth in Brazil in particular, and the developing world in general. In addition to the inability to rule out the bias emerging from unobserved factors, we rely on retrospective information about parental assets. To the extent that respondent bias results in a fictitious correlation between own and parental wealth, we may be overestimating its effects. The fact that findings are identical regardless of whether the head or his spouse responded to the questionnaire

(ancillary analysis available from the authors) provides some reassurance that this source of bias is not major, but still data are not ideal. Finally, our analysis is restricted to number of assets rather than values, and it has not included household debt. Although the principal component strategy used to combine asset types should adjust the weight of assets according to their relative scarcity, further studies collecting detailed information on items' worth will go a long way in finding more precise effects and capturing potentially different effects across the wealth distribution. We hope to have provided a necessary initial evaluation of the substantial role that wealth plays in the reproduction of advantage across generations in Brazil.

Table 1 - Distribution of Asset Ownership by Income Group, Brazil, Chile, Mexico and the United States

	Financial assets				Real estate						Residential property				Business				Vehicle				Primary Residence			
	Brazil	Chile	Mexico	U.S.	Brazil land	Brazil other	Chile	Mexico land	Mexico other	U.S.	Brazil	Chile	Mexico	U.S.	Brazil	Chile	Mexico	U.S.	Brazil	Chile	Mexico	U.S.	Brazil	Chile	Mexico	US
Percentiles of income																										
Less than 20	1.1	0.1	1.2	11.5	6.3	2.1	3.4	28.3	0.6	2.7	2.5	4.5	0.1	3.6	2.8	8	7.3	3.7	18.2	11.3	20.5	65	67.7	65.0	72.2	39.8
20-39.9	0.7	1.9	0.9	26.3	7.4	2.4	3.1	17.2	1	3.8	3.3	4.3	0.3	6.9	3.0	11	11.8	6.7	33.1	16	33.9	85.3	66.1	68.2	68.0	55.4
40-59.9	1.1	1.9	0.7	39.4	5.5	5.2	3.4	13.8	1.3	7.6	3.9	7	0.1	10	3.4	13.8	11.9	9.5	43.6	25.6	42.3	91.6	66.7	67.3	65.6	68.0
60-79.9	2.0	2.7	1.9	51.6	7.3	6.5	6.5	15.8	1.8	10.6	5.5	13	0.7	14	7.1	18.6	15.7	12	51.1	45.3	57.7	95.3	69.2	68.4	69.7	79.2
80-89.9	7.3	7.1	2.3	64.2	12.7	11.5	9.1	18	3.3	12.8	11.2	17	3.7	19.3	15.3	32.2	18.1	16	64.1	72.1	72.6	95.9	68.4	70.5	73.0	88.4
90-100	10.1	22.0	7.8	82.2	19.6	15.5	25	22.1	13.4	20.8	20.5	42.5	8.8	37.2	17.0	39.5	27	34.7	77.4	91.9	87.1	93.1	74.7	75.0	78.2	93.0
All households	3.4	3.6	1.8	40	8.8	6.3	6.4	19.7	2.4	8.3	6.6	11	1.4	12.5	8.4	17	13.3	11.5	38.5	35	44.5	86.3	70.2	67.5	70.3	66.3

Source: 2008 Pesquisa Dimensões Sociais das Desigualdades, Brasil (PDSD). Survey of Intergenerational Financial Linkages in Chile, 2003. 2006 Mexican Social Mobility Survey. Survey of Consumer Finances 2004 for the United Sates (reported in Buck et al. 2006). All surveys were weighted to be nationally representative.

Table 2. Logit model predicting treatment status (pairwise comparison between no, low, and high level of parental wealth). Brazilians 25-64 and Brazilian married/cohabiting couples in which the male partner is 25-64 years of age. 2008[1].

	Parental wealth, all individuals						Male partner's parental wealth, couples						Female partner's parental wealth, couples					
	High vs. low wealth		High vs no wealth		Low vs no wealth		High vs. low wealth		High vs no wealth		Low vs no wealth		High vs. low wealth		High vs no wealth		Low vs no wealth	
Male	0.063	(0.088)	0.149	(0.083)	0.147*	(0.069)												
Age	-0.0002	(0.033)	-0.107***	(0.032)	-0.065*	(0.027)	-0.103	(0.0828)	-0.053	(0.080)	0.077	(0.071)	-0.080	(0.086)	-0.130	(0.083)	0.042	(0.069)
Age^2	0.000	(0.000)	0.001**	(0.0004)	0.001*	(0.0003)	0.001	(0.001)	0.0002	(0.001)	-0.001	(0.001)	0.001	(0.001)	0.001	(0.001)	0.000	(0.001)
F's occ. status	0.024***	(0.004)	0.034***	(0.004)	0.007*	(0.003)	0.031***	(0.007)	0.037***	(0.007)	0.005	(0.007)	0.003	(0.007)	-0.007	(0.008)	-0.001	(0.007)
Mother worked	-0.277**	(0.095)	-0.294***	(0.089)	0.040	(0.071)	-0.310	(0.187)	-0.171	(0.181)	0.187	(0.145)	0.150	(0.184)	0.396*	(0.181)	0.332*	(0.149)
M's occ. status	0.021***	(0.005)	0.046***	(0.006)	0.025***	(0.005)	0.007	(0.009)	0.050***	(0.012)	0.038***	(0.010)	-0.006	(0.008)	-0.006	(0.010)	0.005	(0.009)
F's education	0.059***	(0.014)	0.095***	(0.013)	0.044***	(0.012)	0.035	(0.027)	0.046	(0.026)	0.021	(0.023)	-0.007	(0.027)	0.021	(0.028)	0.020	(0.023)
M's education	0.052***	(0.014)	0.099***	(0.013)	0.054***	(0.012)	0.053*	(0.027)	0.080**	(0.026)	0.048*	(0.024)	0.018	(0.027)	0.001	(0.029)	-0.021	(0.024)
Family structure	0.294**	(0.105)	0.629***	(0.099)	0.335***	(0.077)	0.262	(0.205)	0.499*	(0.198)	0.38*	(0.157)	-0.048	(0.203)	0.195	(0.196)	0.198	(0.161)
Number siblings	-0.025	(0.013)	-0.041**	(0.013)	-0.005	(0.010)	-0.014	(0.027)	-0.007	(0.026)	0.015	(0.021)	-0.022	(0.028)	-0.033	(0.026)	-0.010	(0.021)
White	0.457**	(0.154)	0.730***	(0.144)	0.345**	(0.110)	0.678*	(0.287)	0.704*	(0.284)	0.067	(0.212)	-0.020	(0.297)	0.310	(0.272)	0.295	(0.222)
Brown	0.095	(0.158)	0.101	(0.148)	0.074	(0.110)	0.405	(0.289)	0.473	(0.284)	-0.052	(0.204)	-0.122	(0.293)	-0.114	(0.270)	-0.068	(0.220)
Parental home own.	0.760***	(0.123)	1.249***	(0.114)	0.628***	(0.082)	0.999***	(0.230)	1.200***	(0.224)	0.388*	(0.158)	-0.407*	(0.199)	-0.510*	(0.197)	-0.097	(0.169)
Low wealth S							0.373	(0.210)	0.946***	(0.203)	0.642***	(0.167)	-0.059	(0.213)	0.667***	(0.208)	0.643***	(0.165)
High wealth S							0.876***	(0.229)	1.416***	(0.228)	0.645***	(0.198)	0.453*	(0.222)	1.391***	(0.226)	1.045***	(0.195)
Age S							-0.04	(0.064)	-0.095	(0.060)	-0.022	(0.053)	0.120	(0.071)	0.080	(0.068)	-0.050	(0.051)
Age^2 S							0.000	(0.001)	0.001	(0.001)	0.001	(0.001)	-0.001	(0.001)	-0.001	(0.001)	0.001	(0.001)
F's occ. status S							0.004	(0.007)	0.008	(0.007)	0.000	(0.006)	0.016*	(0.007)	0.038***	(0.008)	0.016*	(0.007)
Mother worked S							-0.080	(0.180)	0.238	(0.174)	0.248*	(0.140)	-0.132	(0.185)	-0.370*	(0.178)	-0.017	(0.143)
M's occ.status S							0.001	(0.009)	-0.001	(0.01)	-0.002	(0.009)	0.014	(0.009)	0.039***	(0.010)	0.028***	(0.010)
F's education S							0.021	(0.028)	0.005	(0.027)	-0.015	(0.023)	0.055*	(0.026)	0.101***	(0.027)	0.024	(0.024)
M's education S							0.001	(0.029)	0.033	(0.027)	0.024	(0.024)	0.078**	(0.027)	0.115***	(0.027)	0.052*	(0.024)
Family structure S							-0.334	(0.192)	-0.419*	(0.184)	-0.154	(0.155)	0.497*	(0.209)	0.760***	(0.205)	0.347*	(0.160)
Number siblings S							-0.018	(0.028)	-0.059*	(0.028)	-0.012	(0.021)	0.007	(0.028)	-0.035	(0.027)	-0.020	(0.022)
White S							-0.198	(0.308)	-0.126	(0.299)	0.155	(0.235)	0.076	(0.318)	0.279	(0.299)	0.185	(0.246)
Brown S							-0.047	(0.310)	-0.407	(0.299)	-0.219	(0.233)	-0.100	(0.320)	-0.140	(0.300)	0.073	(0.244)
Parental home own. S							-0.26	(0.210)	-0.039	(0.199)	0.272	(0.165)	0.773***	(0.235)	1.280***	(0.225)	0.709***	(0.165)
Constant	-3.178***	(0.728)	-3.508***	(0.705)	-1.466*	(0.595)	-0.439	(1.417)	-2.953*	(1.418)	-4.025***	(1.235)	-3.092*	(1.429)	-4.693***	(1.471)	-3.894**	(1.246)
N	2553		4261		4380		740		1139		1157		711		1158		1167	
R^2	0.1653		0.3671		0.0773		0.1809		0.3806		0.1122		0.1859		0.4423		0.1347	

[1] Suffix S identifies characteristics of respondent's spouse or partner. *<.05, **<.01, ***<.001

Table 3a. OLS regression predicting years of schooling and occupational status. Brazilians aged 25-64.

	Years of schooling	Private School Attendance		Occupational status	
		Primary/Secondary	Post-Secondary	Model 1	Model 2
No parental wealth (omitted)					
Low parental wealth	0.849*** (0.140)	0.248 (0.154)	-0.312 (0.271)	2.276*** (0.588)	1.004* (0.526)
High parental wealth	1.632*** (0.153)	0.689*** (0.155)	0.019 (0.261)	4.479*** (0.731)	1.556* (0.676)
Male	-0.086 (0.110)	-0.140 (0.119)	-0.129 (0.18)	1.403** (0.481)	1.969*** (0.442)
Age	0.163*** (0.043)	0.138*** (0.036)	0.114* (0.056)	0.504** (0.185)	0.241 (0.169)
Age^2	-0.002*** (0.000)	-0.001** (0.0004)	-0.001* (0.001)	-0.005* (0.002)	-0.001 (0.002)
F's occ. status	0.032*** (0.005)	0.003 (0.005)	-0.012 (0.006)	0.167*** (0.024)	0.112*** (0.022)
Mother worked	-0.411*** (0.115)	-0.263* (0.127)	-0.301 (0.213)	-1.019* (0.492)	-0.301 (0.452)
M's occ. status	0.006 (0.007)	0.008 (0.006)	0.003 (0.008)	0.060 (0.032)	0.045 (0.028)
F's education	0.144*** (0.018)	0.084*** (0.018)	0.003 (0.027)	0.474*** (0.084)	0.220** (0.079)
M's education	0.226*** (0.019)	0.058** (0.021)	-0.014 (0.026)	0.557*** (0.091)	0.193* (0.084)
Family structure	0.914*** (0.126)	0.265 (0.142)	0.270 (0.234)	1.474** (0.534)	-0.009 (0.494)
Number siblings	-0.147*** (0.019)	-0.087*** (0.02)	-0.007 (0.035)	-0.266*** (0.074)	-0.007 (0.065)
Black (omitted)					
White	0.487** (0.180)	0.117 (0.215)	0.062 (0.412)	1.802* (0.799)	0.991 (0.733)
Brown	0.157 (0.181)	0.159 (0.215)	0.261 (0.429)	1.194 (0.784)	0.914 (0.721)
Parental home own.	0.227 (0.131)	0.104 (0.143)	-0.077 (0.249)	1.123* (0.555)	0.775 (0.508)
Schooling					1.481*** (0.07)
Private School					3.761*** (0.689)
Constant	2.321* (0.923)	-6.814*** (0.772)	-0.648 (1.31)	9.822* (4.092)	6.648 (3.766)
N	5597	5065	860	4883	4883
R^2 / Pseudo R^2	0.336	.097	.024	0.224	.345

[1] Linear regression models for years of schooling and occupational status (ISEI). Dichotomous logit models for primary school, dependent variable is coded 1 if last school attended was private, 0 if public. Analysis of years of schooling includes all individuals, analysis of private school attendance includes individuals who attained any K-12 schooling (primary-secondary), and any post-secondary education (post-secondary). Analysis of educational status includes all individuals who have ever held a full-time job. Occupational status refers to current/last job. Model 1 includes only exogenous variables, Model 2 adds presumed mediators. All samples restricted to respondents 25-64 years of age.

*<.05, **<.01, ***<.001

Table 3b. OLS regression consumption and wealth[1].

	Consumption, married/cohabiting Rs				Wealth, married/cohabiting Rs			
	Model 1		Model 2		Model 1		Model 2	
No parental wealth (omitted)								
Low parental wealth	1.023**	(0.296)	0.796**	(0.271)	0.549**	(0.173)	0.453**	(0.169)
High parental wealth	1.425***	(0.314)	1.201***	(0.280)	0.809***	(0.183)	0.719***	(0.177)
Male								
Age	0.089	(0.110)	0.149	(0.098)	0.060	(0.064)	0.079	(0.061)
Age^2	-0.0003	(0.001)	-0.001	(0.001)	-0.0002	(0.001)	-0.0005	(0.001)
F's occ. status	0.028**	(0.010)	0.008	(0.008)	0.004	(0.007)	-0.004	(0.007)
Mother worked	-0.379	(0.243)	-0.304	(0.219)	-0.014	(0.127)	0.013	(0.121)
M's occ. status	-0.006	(0.013)	-0.013	(0.011)	0.015	(0.009)	0.013	(0.009)
F's education	0.067	(0.039)	-0.006	(0.034)	0.019	(0.024)	-0.012	(0.023)
M's education	0.123**	(0.038)	0.045	(0.035)	0.050*	(0.021)	0.021	(0.020)
Family structure	0.689**	(0.252)	0.340	(0.235)	0.307*	(0.140)	0.181	(0.137)
Number siblings	-0.062	(0.038)	-0.028	(0.030)	-0.051*	(0.022)	-0.037	(0.020)
Black (omitted)								
White	1.169**	(0.374)	1.021**	(0.337)	0.276	(0.204)	0.222	(0.195)
Brown	0.411	(0.360)	0.213	(0.320)	-0.097	(0.193)	-0.193	(0.182)
Parental home own.	0.342	(0.280)	0.190	(0.247)	0.090	(0.140)	0.020	(0.134)
No parental wealth S (omitted)								
Low parental wealth S	1.001**	(0.303)	0.552	(0.266)	0.255	(0.167)	0.099	(0.159)
High parental wealth S	1.759***	(0.328)	0.982**	(0.304)	0.763***	(0.201)	0.475*	(0.195)
Age S	0.339***	(0.083)	0.147	(0.078)	0.015	(0.056)	-0.053	(0.057)
Age^2 S	-0.004***	(0.001)	-0.001	(0.001)	0 .000	(0.001)	0.001	(0.001)
F's occ. status S	0.024*	(0.010)	0.012	(0.009)	0.010	(0.006)	0.006	(0.006)
Mother worked S	0.282	(0.237)	0.013	(0.009)	-0.106	(0.130)	-0.100	(0.125)
M's occ. status S	0.019	(0.011)	0.294	(0.216)	0.029*	(0.012)	0.026*	(0.011)
F's education S	0.024	(0.037)	0.005	(0.034)	-0.020	(0.023)	-0.025	(0.021)
M's education S	0.062	(0.040)	-0.008	(0.036)	0.031	(0.023)	0.009	(0.023)
Family structure S	0.519*	(0.252)	0.021	(0.227)	0.321*	(0.144)	0.127	(0.141)
Number siblings S	-0.084*	(0.035)	-0.037	(0.032)	-0.022	(0.020)	-0.004	(0.019)
Black S (omitted)								
White S	0.794	(0.425)	0.672	(0.371)	0.107	(0.219)	0.065	(0.211)
Brown S	-0.097	(0.418)	-0.052	(0.364)	0.006	(0.217)	0.025	(0.210)
Parental home own. S	-0.170	(0.258)	-0.130	(0.231)	0.186	(0.144)	0.210	(0.141)
Schooling			0.251***	(0.038)			0.086***	(0.021)
Schooling S			0.195***	(0.036)			0.074**	(0.026)
Occ. Status			0.039***	(0.008)			0.023***	(0.005)
Private school								
Spouse Works			1.088***	(0.263)			0.320	(0.143)
Occ. Status S			0.007	(0.008)			-0.004	(0.005)
Constant	-15.80***	(1.885)	-16.257***	(1.700)	-5.167***	(1.176)	-5.319***	(1.134)
N	1518		1518		1518		1518	
R^2	0.4025		0.4992		0.2560		0.3199	

[1] Linear regression models for consumption and wealth holdings. Suffix S indicates that variable pertains to the head of household's spouse (a female by definition). Model 1 includes only exogenous variables, Model 2 adds presumed mediators. *<.05, **<.01, ***<.001

Table 4. Covariate Balance Check and Bias Reduction: Matched Sample[1]

	All individuals									Husband's parents wealth									Wife's parents wealth					
	High vs Low Wealth			High vs No Wealth			Low vs No Wealth			High vs Low Wealth			High vs No Wealth			Low vs No Wealth			High vs Low Wealth			High vs No Wealth			Low vs No Wealth		
	$\bar{T}$	$\bar{C}$	Sig.	$\bar{T}$	$\bar{C}$	Sig.	$\bar{T}$	$\bar{C}$	Sig.	$\bar{T}$	$\bar{C}$	Sig.	$\bar{T}$	$\bar{C}$	Sig.	$\bar{T}$	$\bar{C}$	Sig.	$\bar{T}$	$\bar{C}$	Sig.	$\bar{T}$	$\bar{C}$	Sig.	$\bar{T}$	$\bar{C}$	Sig.
Male	0.45	0.41	*	0.45	0.45		0.43	0.44																		
Age	41.69	41.51		41.58	41.62		42.36	42.48		40.06	38.78		40.13	40.31		41.12	41.15		40.98	40.47		40.84	41.07		42.15	41.88	
Age^2	1858.5	1852.1		1850.3	1859.3		1912.8	1927.3		1723.0	1636.4		1728.3	1769.8		1791.6	1790.3		1792.7	1757.5		1782.3	1827.8		1894.4	1862.5	
Father's status	42.62	42.97		42.98	42.16		34.26	34.60		41.83	41.89		42.30	43.55		33.96	34.70		38.72	38.18		38.96	41.56	*	35.75	36.02	
Mother worked	0.42	0.39		0.42	0.43		0.45	0.43		0.41	0.39		0.40	0.36		0.44	0.43		0.44	0.43		0.44	0.47		0.43	0.44	
Mother's status	33.01	32.92		33.44	34.39		29.26	28.98		32.69	34.70	*	32.48	31.75		29.16	28.57		31.12	30.79		31.26	32.21		30.09	29.50	
Father's education	6.80	6.77		6.89	6.85		4.42	4.52		6.60	6.15		6.71	6.86		4.52	4.70		5.93	5.89		6.05	6.32		4.83	5.02	
Mother's education	6.29	6.42		6.37	6.35		4.13	4.12		6.39	6.30		6.43	6.63		4.30	4.59		5.71	5.68		5.80	5.95		4.43	4.33	
Family structure	0.80	0.79		0.80	0.77		0.74	0.71		0.80	0.77		0.81	0.85		0.76	0.76		0.78	0.82		0.78	0.77		0.76	0.78	
Number siblings	4.12	4.08		4.09	4.18		5.08	5.13		3.86	3.83		3.83	3.95		4.88	5.03		3.89	3.66		3.84	3.96		4.64	4.44	
White	0.62	0.59		0.62	0.59		0.48	0.48		0.58	0.61		0.58	0.61		0.45	0.45		0.55	0.49		0.56	0.42	***	0.49	0.49	
Brown	0.31	0.32		0.31	0.30		0.40	0.42		0.34	0.32		0.33	0.29		0.40	0.42		0.34	0.40		0.33	0.50	***	0.38	0.36	
Home ownership	0.88	0.87		0.88	0.90		0.80	0.81		0.88	0.86		0.88	0.84		0.77	0.79		0.74	0.75		0.74	0.70		0.78	0.78	
Low wealth S										0.30	0.33		0.29	0.32		0.29	0.27		0.26	0.24		0.25	0.25		0.31	0.29	
High wealth S										0.41	0.32	*	0.42	0.38		0.23	0.20		0.43	0.39		0.44	0.47		0.29	0.31	
Age S										36.86	36.07		36.93	37.20		38.36	38.21		38.02	38.02		37.90	39.17		38.58	38.79	
Age^2 S										1482.6	1445.6		1488.9	1521.3		1583.7	1558.6		1560.3	1574.0		1550.1	1653.2		1616.4	1631.4	
Father's status, S										39.43	39.18		39.61	40.15		34.90	33.64		41.97	42.92		42.62	42.76		35.76	34.89	
Mother worked, S										0.47	0.42		0.46	0.48		0.48	0.49		0.43	0.42		0.44	0.48		0.45	0.50	
Mother's status S										31.76	32.88		31.71	31.78		28.90	28.63		32.51	32.62		33.16	34.61		29.57	29.71	
Father's ed, S										6.14	6.44		6.21	6.45		4.53	4.29		6.87	6.73		7.07	6.95		4.83	4.74	
Mother's ed, S										5.68	5.84		5.76	5.85		4.24	4.10		6.34	6.83		6.55	6.41		4.43	4.34	
Family structure S										0.72	0.68		0.72	0.73		0.72	0.70		0.81	0.77		0.82	0.84		0.74	0.72	
Siblings, S										3.93	3.55		3.89	4.29		4.88	5.18		3.94	4.07		3.88	4.49	*	4.71	5.04	
White, S										0.61	0.61		0.61	0.57		0.53	0.58		0.63	0.62		0.64	0.52	**	0.53	0.46	
Brown, S										0.31	0.34		0.31	0.35		0.36	0.34		0.29	0.32		0.28	0.38	**	0.38	0.43	
Home own. S										0.79	0.76		0.79	0.82		0.79	0.81		0.89	0.88		0.89	0.89		0.79	0.82	

[1] $\bar{T}$ and $\bar{C}$ identify, respectively, the variable mean in the treatment and matched control group. The column "sig." indicates whether the difference in means is statistically significant a p<.05.

Table 5. Propensity score estimates of parental wealth effect on children's socioeconomic covariates[1]

	High vs. Low Parental Wealth		High vs. No Parental Wealth		Low vs. No Parental Wealth	
	Model 1 (No mediators)	Model 2 (With mediators)	Model 1 (No mediators)	Model 2 (With mediators)	Model 1 (No mediators)	Model 2 (With mediators)
Years schooling	0.614* (0.242)	--	1.408*** (0.249)	--	0.476** (0.179)	--
Private school K-12	0.089*** (0.023)	--	0.086*** (0.022)	--	0.011 (0.014)	--
Private school post-secondary	0.101 (0.072)	--	0.035 (0.082)	--	0.023 (0.068)	--
Occupational status (ISEI)	2.504* (1.065)	-.087 (1.018)	4.741*** (1.084)	2.090 (1.231)	1.560* (0.696)	0.932 (0.722)
Couple's consumption level						
Husband's parental wealth	0.673 (0.529)	0.628 (0.519)	1.579** (0.590)	1.498** (0.569)	0.912* (0.390)	0.442 (0.372)
Wife's parental wealth	0.896 (0.512)	0.659 (0.531)	1.792** (0.622)	1.229* (0.671)	0.885* (0.387)	0.682 (0.408)
Couple's asset holdings						
Husband's parental wealth	0.768** (0.265)	0.831** (0.271)	1.088*** (0.309)	1.242*** (0.286)	0.409* (0.199)	0.430** (0.183)
Wife's parental wealth	0.738** (0.276)	0.462 (0.281)	1.113*** (0.331)	0.569 (0.357)	0.470* (0.199)	0.382 (0.215)

[1] All parameter estimates obtained from linear difference in outcome of interest between treatment and matched control groups. Detailed model outputs including full and matched sample means for different levels of parental wealth, sample sizes, and percent of sample with common support presented in Appendix 2 (Models with no mediators) and Appendix 3 (Models with mediators).

Table 6. Rosenbaum bounds for parental wealth treatment effects, exogenous predictors only. Contrast High versus Low parental wealth (panel 1), high versus no parental wealth (panel 2), and low versus no parental wealth (panel 3).

Panel 1. High versus Low Parent's Wealth

Effect of Parental Wealth			Hidden bias equivalents			
Gamma	Education	ISEI	Private School*	Mother's Education	Number Siblings	Father's Occ. status
1	<.0001	<.0001	.0001	0.00	0.00	0.00
1.05	0.0001	0.0004	.0004	0.49	1.19	1.44
1.1	0.001	0.004	.001	0.96	2.32	2.80
1.15	0.009	0.022	.002	1.41	3.41	4.11
1.2	0.038	0.079	.005	1.84	4.45	5.36
1.25	0.119		.011	2.25	5.44	6.56
1.3			.020	2.65	6.40	7.72
1.35			.035	3.03	7.32	8.83
1.4			.057	3.40	8.21	9.90

High versus Low Husband's Parents' Wealth

Effect of husband's Parents' Wealth			Hidden bias equivalents	
Gamma	Couple's Consumption	Couple's Wealth	Mother's education	Father's Occ. status
1	0.016	<.0001	0.00	0.00
1.05	0.041	0.0001	0.92	1.57
1.1	0.087	0.0004	1.80	3.07
1.15		0.001	2.64	4.51
1.2		0.004	3.44	5.88
1.25		0.01	4.21	7.20
1.3		0.023	4.95	8.46
1.35		0.044	5.66	9.68
1.4		0.078	6.35	10.85

High versus Low Wife's Parents' Wealth

Effect of wife's Parents' Wealth			Hidden bias equivalents	
Gamma	Couple's Consumption	Couple's Wealth	Mother's education	Father's Occ. status
1	0.003	0.0002	0.00	0.00
1.05	0.009	0.001	0.63	3.05
1.1	0.024	0.004	1.22	5.96
1.15	0.053	0.009	1.79	8.74
1.2		0.023	2.34	11.40
1.25		0.047	2.86	13.95
1.3		0.085	3.36	16.40
1.35			3.85	18.76
1.4			4.31	21.03

Panel 2. High versus No Parent's Wealth

Effect of parental wealth			Hidden bias equivalents			
Gamma	Education	ISEI	Private School*	Mother's Education	Number siblings	Father's Occ. status
1	0	<.0001	<.0001	0.00	0.00	0.00
1.1	0	<.0001	<.0001	0.96	2.32	2.80
1.2	<.0001	<.0001	.0002	1.84	4.45	5.36
1.3	<.0001	0.0008	.001	2.65	6.40	7.72
1.4	<.0001	0.017	.007	3.40	8.21	9.90
1.5	<.0001	0.126	.022	4.10	9.89	11.93
1.6	<.0001		.057	4.75	11.46	13.82
1.7	0.0005			5.36	12.94	15.61
1.8	0.007			5.94	14.34	17.29
1.9	0.042			6.48	15.65	18.88
2	0.151			7.00	16.91	20.39

High versus No Husband's Parents' Wealth

Effect of husband's Parents' Wealth			Hidden bias equivalents	
Gamma	Couples' Consumption	Couples' Wealth	Mother's education	Father's Occ. status
1	<.0001	<.0001	0.00	0.00
1.1	<.0001	<.0001	1.19	2.58
1.2	0.0006	<.0001	2.28	4.93
1.3	0.005	<.0001	3.28	7.09
1.4	0.022	0.0004	4.21	9.09
1.5	0.069	0.003	5.07	10.96
1.6		0.012	5.88	12.70
1.7		0.033	6.63	14.34
1.8		0.08	7.35	15.89
1.9				

High versus No Wife's Parents' Wealth

Effect of wife's Parents' Wealth			Hidden bias equivalents	
Gamma	Couple's Consumption	Couple's Wealth	Mother's education	Father's Occ. status
1	<.0001	NA	0.00	0.00
1.1	<.0001		0.83	2.51
1.2	<.0001		1.59	4.80
1.3	<.0001		2.28	6.90
1.4	<.0001		2.93	8.85
1.5	0.0006		3.53	10.67
1.6	0.003		4.09	12.37
1.7	0.01		4.61	13.96
1.8	0.029		5.11	15.47
1.9	0.069		5.58	16.89

Panel 3. Low versus No Parent's Wealth

Effect of parental wealth			Hidden bias equivalents			
Gamma	Educ	ISEI	Private School*	Mother's Education	Number siblings	Father's Occ. status
1	0.0004	0.007	.194	0.00	0.00	0.00
1.05	0.005	0.039		0.49	1.19	1.44
1.1	0.032	0.148		0.96	2.32	2.80
1.15	0.121			1.41	3.41	4.11
1.2				1.84	4.45	5.36
1.25				2.25	5.44	6.56
1.3				2.65	6.40	7.72

Low versus No Husband's Parents' Wealth

Effect of husband's Parents' Wealth			Hidden bias equivalents	
Gamma	Couple's Consumption	Couple's Wealth	Mother's education	Father's Occ. status
1	0.001	0.0001	0.00	0.00
1.05	0.005	0.0008	1.02	1.28
1.1	0.015	0.003	1.99	2.51
1.15	0.035	0.008	2.91	3.68
1.2	0.072	0.019	3.80	4.80
1.25		0.042	4.65	5.87
1.3		0.078	5.47	6.90

Low versus No Wife's Parents' Wealth

Effect of wife's Parents' Wealth			Hidden bias equivalents	
Gamma	Couple's Consumption	Couple's Wealth	Mother's education	Father's Occ. status
1	0.002	0.021	0.00	0.00
1.05	0.007	0.05	0.94	3.05
1.1	0.02	0.103	1.83	5.96
1.15	0.045		2.69	8.74
1.2	0.089		3.51	11.40

*** Identifies primary and secondary private school attendance.**

Table 7. Rosenbaum bounds for parental wealth treatment effects including presumed mediators. Contrast High versus Low parental wealth (panel 1), high versus no parental wealth (panel 2), and low versus no parental wealth (panel 3).

Panel 1. High versus Low Parent's Wealth

		Hidden bias equivalents		
Gamma	ISEI	Mother's Education	Number Siblings	Father's Occ. status
1	NA*			

High versus Low Husband's Parents' Wealth

	Husband's Parents' Wealth		Hidden bias equivalents	
Gamma	Couple's Consumption	Couple's Wealth	Mother's education	Father's Occ. status
1	NA*	<.0001	0.00	0.00
1.05		<.0001	0.92	1.57
1.1		0.0002	1.80	3.07
1.15		0.0007	2.64	4.51

High versus Low Wife's Parents' Wealth

	Wife's Parents' Wealth		Hidden bias equivalents	
Gamma	Couple's Consumption	Couple's Wealth	Mother's education	Father's Occ. status
1	NA*	NA*		
1.05				
1.1				
1.15				

Panel 2. High versus No Parent's Wealth

		Hidden bias equivalents		
Gamma	ISEI	Mother's Education	Number siblings	Father's Occ. status
1	NA*			

High versus No Husband's Parents' Wealth

	Husband's Parents' Wealth		Hidden bias equivalents	
Gamma	Couple's Consumption	Couple's Wealth	Mother's education	Father's Occ. status
1	<.0001	<.0001	0.00	0.00
1.1	<.0001	<.0001	1.19	2.58
1.2	0.0002	<.0001	2.28	4.93
1.3	0.002	<.0001	3.28	7.09
1.4	0.011	<.0001	4.21	9.09
1.5	0.04	0.0001	5.07	10.96
1.6	0.106	0.0005	5.88	12.70
1.7		0.002	6.63	14.34
1.8		0.007	7.35	15.89
1.9		0.021	8.02	17.35
2.0		0.048	8.66	18.73
2.1		0.095	9.27	20.05

High versus No Wife's Parents' Wealth

	Wife's Parents' Wealth		Hidden bias equivalents	
Gamma	Couple's Consumption	Couple's Wealth	Mother's education	Father's Occ. status
1	<.0001	<.0001	0.00	0.00
1.1	<.0001	0.001	0.83	2.51
1.2	0.0004	0.008	1.59	4.80
1.3	0.003	0.039	2.28	6.90
1.4	0.017	0.119	2.93	8.85
1.5	0.056		3.53	10.67

Panel 3. Low versus No Parent's Wealth

		Hidden bias equivalents		
Gamma	ISEI	Mother's Education	Number siblings	Father's Occ. status
1	NA*			

Low versus No Husband's Parents' Wealth

	Husband's Parents' Wealth		Hidden bias equivalents	
Gamma	Couple's Consumption	Couple's Wealth	Mother's education	Father's Occ. status
1	NA*	0.001	0.00	0.00
1.05		0.004	1.02	1.28
1.1		0.012	1.99	2.51
1.15		0.029	2.91	3.68
1.2		0.061	3.80	4.80

Low versus No Wife's Parents' Wealth

	Wife's Parents' Wealth		Hidden bias equivalents	
Gamma	Couple's Consumption	Couple's Wealth	Mother's education	Father's Occ. status
1	NA*	NA*	0.00	0.00
1.05			0.94	3.05
1.1			1.83	5.96
1.15			2.69	8.74
1.2			3.51	11.40

* NA identifies statistically insignificant parameter estimates.

Appendix 1. Descriptive Statistics[1].

	All individuals				Married/Cohabiting Couples			
	Mean	S.D.	Min	Max	Mean	S.D.	Min	Max
High parental wealth	0.22	0.42	0	1	0.25	0.43	0	1
Low parental wealth	0.24	0.43	0	1	0.24	0.43	0	1
No parental wealth	0.54	0.50	0	1	0.51	0.50	0	1
Age	43.23	10.76	25	64	42.57	10.67	25	64
Age^2	1984.9	950.7	625	4096	1926.4	933.3	625	4096
F's occ. status	34.62	13.37	18	88	35.08	13.27	18	88
Mother worked	0.43	0.50	0	1	0.40	0.49	0	1
M's occ. status	28.74	9.04	19	88	29.05	8.95	19	85
F's education	4.29	4.01	0	16	4.56	4.02	0	16
M's education	3.84	3.83	0	16	4.19	3.86	0	16
Family structure	0.72	0.45	0	1	0.74	0.44	0	1
Number siblings	4.94	3.50	0	35	4.60	3.42	0	26
White	0.50	0.50	0	1	0.50	0.50	0	1
Brown	0.38	0.48	0	1	0.37	0.48	0	1
Parental home own.	0.73	0.44	0	1	0.71	0.45	0	1
R's wealth	0.03	2.34	-7.2	19.8	0.49	2.37	-1.9	12.6
R's consumption	0.06	4.37	-13.2	30.0	0.94	4.44	-7.0	8.8
R's years schooling	8.50	4.09	0	16				
R's priv. school K-12	.11	.31	0	1				
R'2 priv. school post-sec.	.70	.46	0	1				
R's occ. Status	37.89	15.29	19	88				
High parental wealth S					0.2	0.4	0	1
Low parental wealth S					0.2	0.4	0	1
No parental wealth S					0.5	0.5	0	1
Age S					39.4	11.0	14	73
Age^2 S					1674.5	903.6	196	5329
F's occ. status S					35.1	13.5	18	88
Mother worked S					0.4	0.5	0	1
M's occ. status S					28.8	9.3	19	88
F's education S					4.6	4.0	0	16
M's education S					4.0	3.8	0	16
Family structure S					0.7	0.4	0	1
Number siblings S					4.7	3.3	0	22
White S					0.6	0.5	0	1
Brown S					0.3	0.5	0	1
Parental home own. S					0.7	0.4	0	1

1 Suffix S identifies spouse's/ partner's characteristics.

Appendix table 2. Propensity Score Matching Estimates of the Effect of Parental Wealth on Children's Socioeconomic Outcomes.

Effect of parental wealth on educational attainment

	High vs. Low Wealth		High vs. No Wealth		Low vs. No Wealth	
	Full sample	Matched sample	Full sample	Matched sample	Full sample	Matched sample
Control	8.800	10.417	7.380	9.647	7.380	8.323
Treatment	11.056	11.032	11.056	11.056	8.800	8.800
Dif (T-C)	2.256*** (0.145)	0.614* (0.242)	3.676*** (0.127)	1.408*** (0.249)	1.420*** (0.125)	0.476** (0.179)
N controls	1336	1336	3044	3044	3044	3044
N treated	1217	1205	1217	1217	1336	1336
% common support	99.0%		100.0%		100.0%	

Effect of parental wealth on private school (primary and secondary)

	High vs. Low Wealth		High vs. No Wealth		Low vs. No Wealth	
	Full sample	Matched sample	Full sample	Matched sample	Full sample	Matched sample
Control	.100	.115	.081	.122	.081	.090
Treatment	.208	.204	.208	.208	.100	.100
Dif (T-C)	.108*** (.016)	.089*** (.023)	.127*** (.013)	.086*** (.022)	.020* (.010)	.011 (.014)
N controls	1126	1126	2700	2700	2700	2700
N treated	779	774	779	779	1126	1126
% common support	99.3%		100.0%		100.0%	

Effect of parental wealth on private school (post-secondary)

	High vs. Low Wealth		High vs. No Wealth		Low vs. No Wealth	
	Full sample	Matched sample	Full sample	Matched sample	Full sample	Matched sample
Control	.689	.623	.684	.683	.684	.678
Treatment	.718	.724	.718	.718	.689	.702
Dif (T-C)	.028 (.041)	.101 (.072)	.033 (.039)	.035 (.082)	.005 (.048)	.023 (.068)
N controls	177	177	206	206	206	206
N treated	432	424	432	432	177	171
% common support	98.1%		100.0%		96.6%	

Effect of parental wealth on occupational status

	High vs. Low Wealth		High vs. No Wealth		Low vs. No Wealth	
	Full sample	Matched sample	Full sample	Matched sample	Full sample	Matched sample
Control	38.183	42.832	34.487	40.789	34.487	36.622
Treatment	45.530	45.335	45.530	45.530	38.183	38.183
Dif (T-C)	7.348*** (0.654)	2.504* (1.065)	11.044*** (0.522)	4.741*** (1.084)	3.696*** (0.481)	1.560* (0.696)
N controls	1192	1192	2590	2590	2590	2590
N treated	1101	1088	1101	1101	1192	1192
% common support	98.8%		100.0%		100.0%	

Effect of husband's parental wealth on consumption level, married/cohabiting individuals

Consumption	High vs. Low Wealth		High vs. No Wealth		Low vs. No Wealth	
	Full sample	Matched sample	Full sample	Matched sample	Full sample	Matched sample
Control	0.802	1.976	-0.646	1.102	-0.646	-0.098
Treatment	2.744	2.649	2.744	2.681	0.802	0.814
Dif (T-C)	1.942*** (0.315)	0.673 (0.529)	3.391*** (0.263)	1.579** (0.590)	1.448*** (0.259)	0.912* (0.390)
N controls	379	379	778	778	778	778
N treated	361	352	361	356	379	372
% common support	97.5%		98.6%		98.2%	

Appendix table 2, ctd.

Effect of wife's parental wealth on consumption level, married/cohabiting individuals.

Consumption (wife)	High vs. Low Wealth		High vs. No Wealth		Low vs. No Wealth	
	Full sample	Matched sample	Full sample	Matched sample	Full sample	Matched sample
Control	1.091	2.123	-0.850	1.299	-0.850	0.206
Treatment	3.091	3.019	3.091	3.091	1.091	1.091
Dif (T-C)	2.000*** (0.321)	0.896 (0.512)	3.941*** (0.254)	1.792** (0.622)	1.941*** (0.257)	0.885* (0.387)
N controls	360	360	807	807	807	807
N treated	351	342	351	351	360	360
% common support	97.4%		100.0%		100.0%	

Effect of husband's parental wealth on asset holdings, married/cohabiting couples.

	High vs. Low Wealth		High vs. No Wealth		Low vs. No Wealth	
	Full sample	Matched sample	Full sample	Matched sample	Full sample	Matched sample
Control	0.541	0.720	-0.215	0.411	-0.215	0.123
Treatment	1.535	1.488	1.535	1.499	0.541	0.532
Dif (T-C)	0.994*** (0.181)	0.768** (0.265)	1.750*** (0.145)	1.088*** (0.309)	0.756*** (0.129)	0.409* (0.199)
N controls	379	379	778	778	778	778
N treated	361	352	361	356	379	372
% common support	97.5%		98.6%		98.2%	

Effect of wife's parental wealth on asset holdings, married/cohabiting couples.

	High vs. Low Wealth		High vs. No Wealth		Low vs. No Wealth	
	Full sample	Matched sample	Full sample	Matched sample	Full sample	Matched sample
Control	0.625	0.791	-0.218	0.433	-0.218	0.155
Treatment	1.546	1.529	1.546	1.546	0.625	0.625
Dif (T-C)	0.921*** (0.193)	0.738** (0.276)	1.764*** (0.138)	1.113*** (0.331)	0.843*** (0.133)	0.470* (0.199)
N controls	360	360	807	807	807	807
N treated	351	342	351	351	360	360
% common support	97.4%		100.0%		100.0%	

Appendix table 3. Propensity Score Matching Estimates of the Effect of Parental Wealth on Children's Socioeconomic Outcomes Including Mediators.

Effect of parental wealth on occupational status including presumed mediators.

	High vs. Low Wealth		High vs. No Wealth		Low vs. No Wealth	
	Full sample	Matched sample	Full sample	Matched sample	Full sample	Matched sample
Control	38.183	45.549	34.487	43.441	34.487	37.251
Treatment	45.530	45.463	45.530	45.530	38.183	38.183
Dif (T-C)	7.348*** (.654)	-.087 (1.018)	11.044*** (.522)	2.090 (1.231)	3.696*** (.480)	.932 (.722)
N controls	1192	1192	2590	2590	2590	2590
N treated	1101	1096	1101	1101	1192	1192
% common support	99.5%		100.0%		100.0%	

Effect of husband's parental wealth on consumption level, married/cohabiting individuals including presumed mediators.

Consumption	High vs. Low Wealth		High vs. No Wealth		Low vs. No Wealth	
	Full sample	Matched sample	Full sample	Matched sample	Full sample	Matched sample
Control	0.802	2.070	-0.646	1.148	-0.646	0.379
Treatment	2.744	2.697	2.744	2.646	0.802	0.821
Dif (T-C)	1.942*** (0.315)	0.628 (0.519)	3.391*** (0.263)	1.498** (0.569)	1.449*** (0.259)	0.442 (0.372)
N controls	379	379	778	778	778	778
N treated	361	355	361	347	379	375
% common support	98.3%		96.1%		98.9%	

Effect of wife's parental wealth on consumption level, married/cohabiting individuals including presumed mediators.

Consumption (wife)	High vs. Low Wealth		High vs. No Wealth		Low vs. No Wealth	
	Full sample	Matched sample	Full sample	Matched sample	Full sample	Matched sample
Control	1.091	2.371	-0.850	1.934	-0.850	0.409
Treatment	3.091	3.030	3.091	3.063	1.091	1.091
Dif (T-C)	2.000*** (0.321)	0.659 (0.531)	3.941*** (0.254)	1.229* (0.671)	1.941*** (0.257)	0.682 (0.408)
N controls	360	360	807	807	807	807
N treated	351	344	351	344	360	360
% common support	98.0%		98.0%		100.0%	

Effect of husband's parental wealth on asset holdings, married/cohabiting couples including presumed mediators.

	High vs. Low Wealth		High vs. No Wealth		Low vs. No Wealth	
	Full sample	Matched sample	Full sample	Matched sample	Full sample	Matched sample
Control	0.541	0.697	-0.215	0.236	-0.215	0.115
Treatment	1.535	1.527	1.535	1.479	0.541	0.545
Dif (T-C)	0.994*** (0.181)	0.831** (0.271)	1.750*** (0.145)	1.242*** (0.286)	0.756*** (0.129)	0.430** (0.183)
N controls	379	379	778	778	778	778
N treated	361	355	361	347	379	375
% common support	98.3%		96.1%		98.9%	

Effect of wife's parental wealth on asset holdings, married/cohabiting couples including presumed mediators.

	High vs. Low Wealth		High vs. No Wealth		Low vs. No Wealth	
	Full sample	Matched sample	Full sample	Matched sample	Full sample	Matched sample
Control	0.625	1.068	-0.218	0.977	-0.218	0.243
Treatment	1.546	1.530	1.546	1.546	0.625	0.625
Dif (T-C)	0.921*** (0.193)	0.462 (0.281)	1.764*** (0.138)	0.569 (0.357)	0.843*** (0.133)	0.382 (0.215)
N controls	360	360	807	807	807	807
N treated	351	343	351	351	360	360
% common support	97.7%		100.0%		100.0%	

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