Bargaining over Risk

The Impact of Decision Power on Household Portfolios

Tomas Thörnqvist* and Arna Vardardottir†‡

December 7, 2014

Preliminary draft
- please do not cite

Abstract

This paper investigates the internal financial decision-making process of households by employing a unique panel dataset containing the disaggregated wealth of the entire Swedish population over seven years. We directly estimate the outside options of spouses that determine their decision power and utilize a source of exogenous variation in sex-specific labor demand to show that its distribution among spouses is a driving force in the aggregation of spouses' preferences in financial decision making. As the decision power of female spouses grows, participation in the equity market decreases, participation in other risky asset markets increases, the share of wealth allocated to risky investments decreases, the riskiness of the portfolio decreases, and idiosyncratic risk decreases. We also study the effect of underdiversification on household welfare and find that women exert the influence of their decision power to reduce the cost of underdiversification.

JEL classifications: G02, G11, D10, D14,

*Department of Finance, Stockholm School of Economics, SE-113 83 Stockholm, Sweden. E-mail: tomas.thornqvist@hhs.se.

†Department of Economics, Copenhagen Business School, 2000 Frederiksberg, Denmark. E-mail: ava.eco@cbs.dk.

‡This paper was written as part of our PhD theses and partially accomplished during Arna's visiting years at the University of California, Berkeley. We owe special thanks to our advisors David Card, Juanna Schrøter Joensen, Magnus Johannesson, and Paolo Sodini for their ongoing support and valuable comments. We also appreciate the helpful comments and suggestions from Anna Dreber Almenberg, Louis-Philippe Beland, Laurent E. Calvet, Stefano DellaVigna, Sebastian Findeisen, Hilary Hoynes, Erik Lindqvist, Enrico Moretti, Michaela Pagel, Krishna Pendakur, Jesse Rothstein, Herdis Steingrimsdottir, Andreas Steinhauer and the participants in the Arne Ryde Workshop in Financial Econonomics (Lund 2012), the Nordic Finance Network (NFN) Research Workshop in Finance (Oslo 2012), the 24th Annual Conference of the European Association of Labour Economists - EALE (Bonn 2012), the Spring School in Behavioral Economics (San Diego, 2013), the Annual Meeting of the Population Association of America - PAA (New Orleans 2013), the All-California Labor Economics Conference (San Diego 2013), the ZEW Workshop on Family Economics and Family Policy (Mannheim, Germany, 2013), the Society of Labor Economists (SOLE) Annual Meeting (Arlington, 2014), the FINET-HCEO-CEAR-IFS Workshop on Risk and Family Economics (London, 2014) and the seminar participants at SIFR, Stockholm School of Economics, IFAU, UC Berkeley, University of Alberta, Ryerson University, Simon Fraser University, Dartmouth College, University of Pittsburgh, Copenhagen Business School, Norwegian School of Economics (NHH), Uppsala University, the Melbourne Institute, and IIES (Stockholm University). Financial support from the Jan Wallander and Tom Hedelius Foundation is gratefully acknowledged.

1 Introduction

Financial decisions are typically among the most important decisions made within households. This paper addresses the ways in which these decisions are made, i.e., how individual preferences regarding household portfolio composition are aggregated at the household level.

There is limited research on intra-household financial decision making. Papers that examine this concept focus primarily on the consumption-savings choice. Browning (2000), Mazzocco (2004), and Lundberg et al. (2003), for example, find that the distribution of decision power within the household affects the consumption-savings decision when spouses differ in their preferences. Many questions remain, and one major riddle remaining to be solved is how couples choose to invest their financial wealth. Understanding what determines whether households participate in risky asset markets and – if they do – what share of wealth they allocate to risky assets and how well diversified they are is of fundamental importance to the fields of both economics and finance. Although interest in this topic is widespread, research remains scant.

A simple comparison of the financial portfolios of single men, single women, and couples provides prima facie evidence of how financial decisions are made at the household level. On average, single men hold riskier and less diversified portfolios and incur higher costs from underdiversification than single women. There may be various reasons for these differences, but it is important to note that this gender difference concerning financial investments remains even after we control for most conceivable factors. Furthermore, previous findings show that marriage affects the financial decisions of heterosexual individuals, whereas individual portfolios remain unaffected by the marital transitions of homosexual investors (Christiansen et al., 2013), which suggests that gender differences in preferences within couples regarding household portfolio composition are driven by gender rather than by other considerations, such as assortative mating, for example. In this paper, we go one step further and analyze how the weights on spouses' financial investment preferences are determined.

We investigate the questions raised here in a comprehensive, high-quality panel of household finances that provides a unique opportunity to assess how the preferences of spouses enter the financial decision-making process of households. The richness and size of the data allows us to measure the decision power of spouses directly because we can match each spouse with "identical" single individuals and thus observe their outside option, which thereby demonstrates their influence within the household. We then exploit an exogenous source of variation in sex-specific labor demand to capture the effect that the relative decision power of spouses has on the weight accorded their preferences when various portfolio characteristics are determined. First, we investigate the participation of households in equity and other risky asset markets. Second, we consider how the share of risky assets in the financial portfolios of households is determined. Third, we investigate how the amount of risk in the risky part of household portfolios is determined and how well diversified it is. Fourth, we show how the distribution of decision power within households affects their economic wellbeing. To the best of our knowledge, we are the first in the household financial decision-making literature to causally estimate how the preferences of spouses are aggregated at the household level when making decisions regarding the composition and characteristics of households' financial portfolios and how this affects household welfare.[1]

[1] A few empirical studies investigate household stock investments using survey data (Friedberg and Webb, 2006; Jianakoplos and Bernasek, 2008; Yilmazer and Lyons, 2010; Yilmazer and Lich, 2013).

A collective bargaining model with distribution factors[2] assumes that spouses have individual preferences regarding the composition of the household's financial portfolio that can be represented by individual utility functions and that all differences are resolved through a bargaining process where each spouse's bargaining position is influenced by various factors that are typically not considered relevant when modeling financial decisions. In this paper, we empirically estimate the effects of distribution factors on the financial behavior of households. The underlying intuition is simple. Whenever the distribution factor under consideration – in this case, labor market conditions – is favorable to one spouse and presumably increases that spouse's bargaining position within the household, the respective weights in the financial decision-making process will be shifted in such spouse's favor.

The testable implication from this framework that we bring to the data is that favorable shifts in the labor market conditions of female spouses allow them to exert their preferences to a greater extent, which implies that the household portfolio more closely resembles the portfolio that such female spouses would have opted for. A spouse's decision power is determined by their threat points, or the levels of utility each spouse might expect to obtain in the event of a separation. This threat point can be proxied by a spouse's fall-back income, which is defined as the expected earnings of an individual with his or her demographic information. A spouse's decision power is then measured as the share of his or her fall-back income to the total fall-back income of the couple, and we focus on how this measure affects financial decision making in households. To take account of the potential endogeneity problem of this measure, we instrument it with a source of exogenous variation. The instrument used is a measure of prevailing female and male wages that reflects the exogenous sex-specific demand for labor (see, e.g., Bartik, 1991; Aizer, 2010). Furthermore, this measure does not reflect underlying worker characteristics at the county level, which might be correlated with the risk level of household portfolios.

Our analysis is based on register data that are systematically compiled by financial institutions and corporations. We observe detailed information regarding demographic characteristics, income, and, most importantly, wealth portfolios. The portfolio data are highly disaggregated and provide information on the universe of assets owned by each resident at the end of a tax year. All financial assets held outside of retirement accounts are reported, including bank accounts, mutual funds, and stocks.

These data have significant advantages relative to those data used in previous studies on household financial decision making. Most papers rely on surveys, such as the Health and Retirement Survey (HRS).[3] The HRS dataset only provides information about financial wealth for individuals above the age of 50 by broad asset categories and is subject to misreporting. By contrast, our data provide information on individual financial assets, they are collected by financial institutions, and they are confirmed by their owners when they file their taxes, where inaccurate reporting is minimized as a result of legal penalties for misreporting.

We first show that the data reveal characteristics that are consistent with the proposition that women are less willing to take risks in financial matters (see, e.g., Dohmen et al., 2011). More specifically, when comparing single men and single women, conditional on background characteristics, single

[2]Here and throughout the paper, a distribution factor is a variable that affects the intra-household allocation of resources and does not affect the budget constraint nor preferences. Distribution factors therefore do not enter demand equations within the unitary framework of the household.

[3]See, e.g., Mazzocco (2004), Lundberg et al. (2003), Friedberg and Webb (2006), Babiarz et al. (2012) and Yilmazer and Lich (2013).

men on average hold riskier portfolios, have higher participation rates in equity markets, and are less diversified. We then proceed to our main research question regarding how the distribution of decision power between spouses affects household portfolios. Our results imply that female decision power has a sizable and significant impact on the composition of household portfolios. More specifically, our results show that decision power plays a role in household financial decision making and that the traditional assumption of a unitary household is not supported by the data. Enhancing the decision power of married women reduces households' propensity to participate in equity markets but increases their participation in other risky asset markets, while it reduces the risky share of those households that do participate and reduces the total risk of the risky part of household portfolios; it is notable that most of this reduction is caused by a reduction in the amount of idiosyncratic risk. Most importantly, however, the welfare cost of underdiversification is reduced as the decision power of women increases.

The results are robust to various sensitivity analyses. Most importantly, we show that our main results remain robust when (i) including household-fixed effects; (ii) running regressions on group aggregates; and (iii) controlling for financial education, industry, and the area of residence of spouses.

The rest of the paper is organized as follows. In Section 2, we provide some background information on the riskiness of household portfolios and how spouses make decisions concerning the collective financial portfolio of the household. Section 3 describes the dataset. In section 4, we explain the institutional background. In section 5, we explain our identification approach. In section 6, we report our main results, while section 7 presents concluding remarks.

2 Spousal Bargaining and Financial Investments

The previous empirical literature reveals some information regarding household financial behavior. For instance, previous studies show that household portfolios are quite heterogenous in their composition and that this can partly be accounted for by differences in demographics. Calvet et al. (2007b) find that poorer, less educated, retired, and unemployed households are less diversified. Conversely, studies also show that the risky share of household portfolios increases with wealth (see, e.g., Bertaut and Starr-McCluer, 2000; Calvet et al., 2009; Guiso and Sodini, 2013).

However, although previous studies offer some descriptive analyses of household portfolios and financial risk taking, it remains largely silent regarding what happens within households when determining the composition of household portfolios. To understand these decision processes, intra-household dynamics must be investigated with respect to how they affect household outcomes. The considerable heterogeneity across household portfolios that cannot be accounted for by demographics alone might potentially be explained by gender differences and heterogeneity in intra-household bargaining distribution.

The literature on intra-household dynamics has its roots in the work of Becker (1991), who treated the household as a single decision-making unit with one utility function and pooled income. A limitation of this approach is that it cannot be used to analyze the influence of individual household members on the decision-making unit with different preferences for household decision making.

However, influential empirical evidence casts doubt on the soundness of the unitary model (Schultz, 1990; Thomas, 1990, 1994; Hoddinott and Haddad, 1995; Lundberg et al., 1997; Browning and Chiappori, 1998), which has given way to the cooperative bargaining models first proposed by Manser and Brown (1980) and McElroy and Horney (1981) and the collective models introduced by Chiap-

pori (1988, 1992). These studies explicitly consider that households consist of a number of different members with heterogenous preferences.

However, despite the growing number of models of household decision making that have been supported by data in recent years, household financial decision making has not been thoroughly analyzed within this framework. Economic models of portfolio investments typically examine the optimal behavior of a single household and fail to account for the fact that many households are comprised of couples whose decisions are the outcome of a joint decision-making process that reflects the preferences of both spouses. Conversely, bargaining models imply that multiple factors that are not typically considered important when financial investments decisions are modeled determine the distribution of decision power within households and thereby the financial decisions made by households.

As noted above, a collective bargaining alternative to the unitary model explicitly considers that a husband and wife have separate utility functions that allow the couple to "bargain" over the investment path taken by the household. All that is assumed about how the conflicts are resolved is that outcomes are efficient regardless of how the decisions are made. These two assumptions of the collective bargaining model are referred to as collective rationality in the literature and clearly demonstrate that outcomes depend upon preferences, income, and prices. The collective model also allows for distribution factors – i.e., variables that affect the bargaining position of household members and thereby intra-household decision-making processes – but not household members' preferences or budget constraints. Couples then maximize a weighted sum of each spouse's utilities subject to a pooled budget constraint in which the weighting depends upon the relative decision power of couples as influenced by distribution factors. Distribution factors appearing in the literature include relative non-labor income, relative age, local sex ratio, targeted transfers, abortion legality, alimony, child benefits, the availability of birth control, and divorce laws (Browning et al., 1994; Lundberg et al., 1997; Chiappori et al., 2002; Angrist, 2002; Chiappori and Oreffice, 2008; Attanasio and Lechene, 2014). If spouses have different preferences regarding any decision that has to be made within the household, the general implication of these bargaining models is that these distribution factors will affect the outcome under consideration because they determine the bargaining position of individuals within the household. The household decisions of interest to this paper revolve around the composition of the collective financial portfolio of the household. As empirical findings show that spouses have divergent preferences concerning this composition, we can use a test of independence of household portfolio composition from distribution factors to assess whether these differences are resolved through a bargaining process or whether household portfolio decisions can be described with a unitary model.

The collective model does not provide information regarding the distribution factors that influence each spouse's decision power. Bargaining theory, on the other hand, suggests that the expected utility in case bargaining fails determines the distribution of decision power within a marriage. An important way in which bargaining models differ, however, is how they characterize these threat points in a marriage. Most researchers adhere to one of two major hypotheses regarding this concept. Divorce threat models (Manser and Brown, 1980; McElroy and Horney, 1981) take divorce as the ultimate threat when spouses do not reach an agreement, and the bargaining position of spouses is therefore determined by their expected utilities outside the marriage. Alternatively, the separate spheres model (Lundberg and Pollak, 1993) hypothesizes that noncooperative marriage is a more plausible threat

to ordinary household matters than resolution in the case of a marital dispute. In this case, the bargaining position of spouses is determined by their expected utility in the case of non-cooperation.

However, regardless of which strategy spouses turn to when negotiating with each other on the composition of the financial portfolio of the household, earnings potential outside of marriage seems to be a good proxy for the decision power of the spouses (Pollak, 2003; Aizer, 2010; Cherchye et al., 2012; Majlesi, 2014). The distribution factor we focus on is the local labor market opportunities of spouses to determine how well off spouses would be in the case of a divorce and hypothesize that better outside options for women will translate into different portfolio compositions for heterosexual couples. Favorable shifts in the labor market conditions of one spouse are presumed to increase that spouse's bargaining position, which is also expected to translate into a greater say in the financial decision-making process of the household. A simple reduced-form collective model allows us to bring this hypothesis to real data.

3 Data

Our dataset contains highly disaggregated data on the entire Swedish population for the 2000-2006 period. Statistics Sweden, a government agency, has a mandate to collect extensive data on all individuals that either live in Sweden, are Swedish citizens, or own assets in Sweden. By virtue of the fact that the data were collected by one central agency together with the fact that these data are used for tax purposes, we believe that our dataset is of unusually high quality.

The dataset consists of four distinct parts that are used together throughout the paper. The first of these parts is demographic data. These data contain information about age, education, location of residence, family ties, and also other information such as income and real estate wealth. The second part includes data on securities holdings that detail the financial portfolios held by individuals. The third part is a dataset that lists all securities sales and the price at which each individual security was sold. Finally, we complement this with data from third-party vendors, such as Datastream and Morningstar.

The securities in both the portfolio data and the transaction data are identified by their respective International Security Identification Number (ISIN). By merging these datasets with third-party data, we are able to accurately price the assets and determine which category the assets fall into (bonds, derivatives, stocks, funds etc.), and we are able to obtain historical return series for the securities, which we use to calculate measures of volatility.

Our proxy of a spouse's threat points is obtained by matching spouses with single individuals on six individual characteristics. More specifically, this proxy is constructed as the average annual income for singles – defined as non-married and non-cohabiting people with children – conditional on their age, gender, whether they have children, their location of residence, as well as the field and level of their highest level of completed education.

This definition implies five restrictions on the data that are important to note. First, because fall-back income is undefined for individuals that are too young to enter the labor force or individuals that have retired, we consider only those individuals between the ages of 16 and 65. Second, we drop a small number of married individuals that have very unusual profiles because there are no single individuals with matching profiles on which the conditional average income can be calculated. Third, information about education is missing for some individuals, which means that these individuals are dropped.

Fourth, we only consider individuals that are living in Sweden: Swedish citizens living abroad and foreign citizens with asset holdings in Sweden are dropped from our sample. Finally, because we are only interested in married couples in which both spouses have defined fall-back incomes, we drop the spouses of individuals that are excluded due to any of the data restrictions listed above.

Throughout the paper, we refer to married opposite-sex couples as couples and individuals who are living alone or with someone but without a common child as singles. Ideally, we would not want to define those living together but without a common child as singles, but it is impossible to distinguish them from truly single people in the data. We can identify cohabiting people in the data if they have a common child, but because we are not able to identify all cohabiting individuals, we consider couples to be only those who are married. To be clear, henceforth, whenever we refer to couples or spouses, we mean married people.

Between the years 2000 and 2005, banks were required to report their customers' bank account balances only if these accounts had accrued interest payments in excess of 100 SEK. Unfortunately, this means that we do not have bank account information for approximately half of our sample. In 2006, this reporting requirement was changed so that all accounts with balances exceeding 10,000 SEK had to be reported. This increased our bank account coverage somewhat, but we still miss bank account balances for a large part of the sample. Missing bank account data can distort our estimates of the household share of financial wealth held in risky assets, but these missing data do not affect our estimates of risk held in the the risky part of portfolios nor its diversification. We address this problem by imputing the balances on the accounts missing from the dataset. The Swedish central bank has information about the total sum of all money deposited in bank accounts. By subtracting the deposits that are accounted for in our data from the total sum of all deposits, we arrive at a residual that we allocate equally over all the individuals with missing bank accounts. This method is in line with the method used by Calvet et al. (2007b,a).[4]

In Tables A.1 and A.2, we report the aggregate wealth statistics of Swedish households and its breakdown into main asset categories by the end of each year under consideration. The tables also include the official wealth statistics published by Statistics Sweden (SCB). A few details are notable. Our values match the official values quite well. Discrepancies can be explained by slight differences in the classifications of funds. The numbers show that our dataset has good aggregation properties, confirming that it is both reliable and accurate. Table 1 provides summary statistics for financial assets and other household characteristics for married individuals, single males, and single females.

Table A.3 provides information regarding intra-household income distribution for Swedish households. The first column shows that in approximately 67% of marriages, the man has higher actual income than the woman and more than 70% of the total household income in about 31% of the cases, whereas women earn more than 70% of the household income in approximately 14% of the cases. When we consider fall-back income, the proportion of marriages in which men have a higher fall-back income than women is similar to the cases that consider actual income. In about 12% of the cases, men have more than 70% of the total household fall-back income, while women have more than 70% of the household fall-back income in less than 5% of the cases.

Table A.4 provides information regarding intra-household age and education distribution for Swedish

[4]Calvet et al. (2007b,a) employed three different imputation methods to address this problem – one of which was the constant balance method – and found that their results were not sensitive to the method used. Therefore, we only consider the method we find most appealing and do not repeat our calculations using the other methods.

households, which reveals that the man is more than five years older than the woman in approximately 18% of marriages and that the woman is more than five years older than the man in approximately 2% of the cases. With respect to education, the man has a higher level of education than the woman in approximately 21% of married relationships, and the woman has a higher level of education than the man in approximately 32% of households.

4 Institutional Setup

The composition of the financial wealth of Swedish households requires clarification before going further. This is important to understanding which part of the financial wealth we are analyzing and how its size compares with pension savings and the entire financial wealth of households. An explanation of how a household's financial portfolio is treated in the event of a divorce is also necessary before laying out the identification strategy.

4.1 Pension system

The Swedish pension system consists of five separate parts. These parts can be classified into three groups depending on whether the funds come from the government through taxes, from the employer or from the individual themselves. The public pension system differs depending on whether the retiree was born before or after 1938. The system for people born before 1938 consists only of defined benefits, whereas the system for people born during or after 1938 consists of both defined benefits and defined contribution components. With respect to the latter system, 16% of earnings go to the defined benefit plan, whereas 2.5% go to the defined contribution plan. The defined contribution plan, PPM, allows the individual to decide where he or she wants to invest his or her pension money from a menu of funds with different risk and return characteristics.

Employer-provided pensions are widespread in Sweden, with approximately 90% of employees receiving some sort of pension benefits as part of their employment package, according to the Swedish Pensions Agency. The amount put into these employer-provided schemes averages to be approximately 4.5% of an employee's earnings.

In addition to the public pension and the employer-provided pension, individuals are allowed and encouraged to engage in private pension savings and investments. The Swedish tax system allows for tax deductions for some forms of pension savings. It also allows the individual to decide whether he or she wants to be taxed 30% on realized profits or whether he or she wants to pay an annual flat tax of approximately 0.75% of the value of his or her investments.

Although we do not observe the value of households' defined contribution pension savings[5], our dataset contains the majority of household financial wealth (approximately 85%). We refer the reader to Calvet et al. (2007b, 2009) for a detailed presentation of the information on the different categories of household financial wealth in the dataset and its coverage.

4.2 Divorce laws

According to Swedish law, a spouse always has the right to obtain a decree for a divorce and is not required to base such a decree on any special grounds. In the absence of a prenuptial agreement,

[5]These include assets in private pension plans and in publicly defined contribution accounts.

all assets are split equally among the spouses at the time of divorce. The couple is encouraged to divide their assets privately, but the couple can apply to the district court for the appointment of a marital property administrator in the event of a disagreement. Such an administrator will then make a decision regarding what should be included in the division, how their assets should be valued and how they should be divided. The general principle is one of equal sharing and ignoring who earned the most or brought the most into the relationship.[6] Which spouse is at fault for the dissolution of the marriage is also irrelevant with respect to the division of assets. When the divorce is final, the spouses are responsible for their own provision. According to Statistics Sweden, approximately 50% of all marriages end in divorce, and approximately 12% of all marriages come with a prenuptial agreement (Agell and Brattström, 2011). Cohabiting non-married couples are also subject to a weaker version of the divorce laws unless they signed a contract prior to moving in together. Ending a cohabitation does not affect the financial portfolios of either party.

The fundamental idea behind Swedish divorce law is that all forms of economic relations between spouses are effectively cut. Each spouse is therefore individually responsible for his or her own financial support after the divorce. Therefore, both the equal division of assets and individual responsibility for financial support after divorce make it clear that earnings outside marriage is a well-suited measure of the outside options of spouses in the context of this paper.

5 Empirical Methodology

Our identification approach utilizes the segregated nature of the labor market for women versus men in Sweden. More specifically, we exploit the plausibly exogenous variation in sex-specific labor demand across counties. This measure of local sex-specific labor demand is derived by interacting cross-sectional differences in industrial composition with countrywide industry wages. In this section, we begin by explaining how decision power has been measured in the literature and the corresponding problems associated with such measurement. Next, we explain how we circumvent these problems and how we are able to capture the causal effect of decision power on household outcomes. Finally, we discuss our empirical approach in more detail and the outcome variables under consideration.

5.1 Measures of Decision Power

Several measures of decision power have been used in the literature to show how its distribution affects household decision making.[7] However, endogeneity is a potential problem associated with many of these studies and prevents causal interpretation. In most cases, decision power measures are based on the assumption that the degree to which spouses are able to exert their preferences in household decision making is determined by the respective resources the spouses contribute to the household (Blood and Wolfe, 1960).[8]

[6] However, if the result is unreasonably unfair, due to a short relationship, for example, the court has the ability to modify the division to ensure fairness.

[7] Most papers have used the differences in spousal characteristics as a measure of relative decision power, e.g., differences in education, labor income, non-labor income, age differences, assets brought to the marriage, current assets, etc.

[8] Doss (1996) proposes an alternative view wherein a wife's lack of a wage income may simply reflect her good bargaining position within the household, i.e., she may exert her decision power to choose not to work in the labor market and to let other household members support her.

Non-labor income is one of the measures of decision power that has been used to study its effect on various household outcomes (e.g. Thomas, 1990; Schultz, 1990). However, non-labor income suffers from potential endogeneity because it is a characteristic of past savings behavior and/or the receipt of funds that are also influenced by spouses' power, such as inheritance, pension or benefits. Many papers use the relative earnings or relative income of the wife as a measure of decision power (e.g., Browning et al., 1994; Euwals et al., 2004; Gibson et al., 2006; Lundberg and Ward-Batts, 2000). However, treating earnings or income as an indicator of decision power typically involves the erroneous assumption that earnings observed while married is a good proxy for earnings at the unobserved threat point. Furthermore, income depends on labor force participation and time allocation decisions, which are also influenced by spouses' relative decision power.

There are many examples of other measures used in the literature that might also be subject to endogeneity. The central task of empirical studies of this kind is therefore to identify sources of female power that vary exogenously. Furthermore, any measure of couples' relative power that does not involve an exogenous shift in their utility at the threat point must be instrumented properly. In particular, an instrument is required that is strongly correlated with female decision power but not directly correlated with household decision making.

A spouse's decision power is determined by her or his utility at the threat point. An increase in wellbeing at a spouse's threat point would thereby also increase her or his relative decision power. Any exogenous shift in a spouse's utility at the threat point can therefore be used to capture the causal effect of relative spousal decision power. Rangel (2006), e.g., uses a regulatory change in alimony rights in Brazil as a proxy for an exogenous increase in the relative decision power of women and finds that this affects the level of investment in the schooling of children.

The direct control of monetary resources is another factor that can contribute to a relative increase in intra-household decision power. For example, Lundberg et al. (1997) find that an exogenous change in public transfers to the wife causes a substantial and significant increase in expenditures on children's clothing relative to men's clothing and on women's clothing relative to men's clothing through the increased decision power of women. Preferable characteristics such as higher education can also increase wellbeing at the threat point and decision power within the household. Strauss and Thomas (1991), e.g., find that the education of Brazilian mothers can increase children's height via their mother's access to information as measured by certain indicators, such as newspaper reading, TV watching, and radio listening.

As discussed by Pollak (2005, 2011), fall-back income, not actual income, determines wellbeing at the threat point and hence decision power. In other words, earnings are endogenous, while the expected wage rate is exogenous. For example, consider a highly educated married woman in a household in which the household tasks are divided such that she stays at home with the children and takes care of the household. Her earnings are affected by the very fact that she is married; she earns nothing even though she would have high income should the couple divorce and she were to begin working. A spouse whose earnings are low because she or he chooses to allocate working hours to household production instead of market work does not have less decision power. However, a spouse whose fall-back income is low does have less decision power.

We use the earnings that married individuals could expect to earn relative to the couple's combined expected earnings should they divorce as our proxy of the spouse's relative utility at the threat point

and thus also his or her decision power. To estimate earnings outside marriage, we calculate the average earnings of individuals of the same gender and age, with the same education, living in the same region, and that either do or do not have children. However, as our decision power measure is based on many choice variables that are likely to be correlated with unobservables relegated to the error term, it is prone to endogeneity. Ordinary least squares estimates based on this measure could thus be biased, and we therefore require an exogenous source of variation to instrument it.

5.2 IV measures

To address the potential endogeneity of the fall-back income measure and to establish a causal relationship between the decision power of spouses and the composition of household portfolios, we require an exogenous variation in the relative threat points of the spouses to instrument our measure of decision power. This approach considers that fall-back income, not actual income, determines wellbeing at the threat point and solves the potential endogeneity problem of the fall-back income. One measure that is correlated with a spouse's threat point is labor demand. Increased demand for an individual's skills enhances options outside the partnership, independently of whether this person is working or not. This type of labor demand might manifest through channels such as increasing earnings, decreasing the expected duration of unemployment, and increasing employment stability.

We employ an instrumental variables approach pioneered by Bartik (1991) and Aizer (2010) that considers that variation in wages reflects both demand and supply effects. More specifically, based on the gender segregation among industries, the industry composition of counties and industry-wide wage changes at the country level, we can isolate the sex-specific variation in local wages that is driven solely by aggregate labor demand, which is presumably uncorrelated with worker characteristics in the local labor market under consideration. This allows us to create a measure of prevailing female and male wages that reflects only the exogenous sex-specific labor demand. Using this to instrument the decision power measure based on the relative fall-back income circumvents the associated endogeneity problem. The instrument is based on a measure of average annual wages that are calculated by gender and education level in each county as follows:

$$\bar{w}_{gcey} = \sum_{j} \alpha_{gcej} w_{-ceyj} \tag{1}$$

where α_{gcej} is the proportion of workers of gender g in county c with education e that are working in industry j[9], and w_{-ceyj} is the annual wage of workers with education e in industry j in year y in all counties except for county c . The proportion α_{gcej} is fixed over the entire period such that selective sorting across industries is not reflected in this wage measure. Our data contain 88 different industries, 21 different counties and 3 different education levels.

The reason for excluding the county under consideration when measuring wages over counties is to prevent endogeneity associated with local labor force characteristics, i.e., by doing this, we remove from the measure any changes in wages that might be caused by changes in local labor force characteristics. This addresses the concern that the observed change in countrywide wage growth is driven by the concentration of an industry in the county under consideration.

[9] $\alpha_{gcej} = N_{gcej}/N_{gce}$, and therefore, $\sum_{j} \alpha_{gcej} = 1$.

The prevailing share of female earnings in household earnings increased by 1.1 percentage points (from 0.466 to 0.471) between 2000 and 2006. At the same time, the true labor income ratio for couples increased by 0.3 percentage points, from 0.413 to 0.414. These numbers can be found in Table A.5. Furthermore, figure 1 shows the actual and fall-back income ratio for each county on maps of Sweden, which illustrates both the variation between counties and the divergence between actual and fall-back wages.

Our identification approach relies on two assumptions that merit further discussion. First, there is imperfect substitution between gender groups within occupations. Historically, men and women have tended to choose different occupations. Women are, for instance, overrepresented in health care and social services, whereas most workers in construction are men. Second, labor market demand and supply are only partially adjusted in the short run due to mobility costs (Blau et al., 2000; Katz and Murphy, 1992). This assumption allows panel data approaches to exploit short-term fluctuations in labor market conditions to evaluate the effects of shifts in decision power among households, while individuals will be able to adjust to new conditions over the long run by changing either their industry or their geographic location, preventing any causal inference.

If these assumptions hold, countrywide wage growth within industries would influence individuals differently depending on the significance of the occupation under consideration in their county of residence and within their education level and the gender ratios within that industry and education level. This allows a sex-specific measure of the prevailing local wages for individuals to be created based on the occupational structure of the county and the countrywide wage growth in occupations. This measure is independent of underlying worker characteristics in the county, which might be correlated with decisions made within households and would thereby bias the results.

Data for Sweden show that the assumption regarding gender segregation among industries holds in this paper. In 2006, e.g., 77.2% of employers in health care, social services and veterinary services were women, and 92.0% of construction employees were men. We exploit the segregated nature of the labor market for women versus men within the Swedish labor market, where increases in demand in some sectors result in exogenous increases in the relative earnings of females and males. Using the industrial structure of the county under consideration and the countrywide wage growth within industries, we can therefore create sex-specific measures of prevailing local wages.

Identification comes from the construction of the wage measure because it makes it clear that counties with higher concentrations of female-dominant industries that experience high countrywide wage growth will experience more narrowing in the gender wage gap. For instance, let us assume that there are only two counties, Stockholm and Gotland, and three industries, manufacturing, service and farming. The shares of each industry in Stockholm and Gotland are 0.2, 0.7, 0.1 and 0.3, 0.2, 0.5, respectively. Now, if there is a higher countrywide wage growth in services than in the other industries, Stockholm will experience a decrease in the gender wage gap while Gotland will not, which will cause an upward shift in the relative decision power of women in Stockholm.

5.3 Empirical Approach

We explore the determination of several features of household financial portfolios. First, we begin by analyzing the participation of households in equity holdings and other risky assets. Among those households that do participate, we investigate two different measures of how much the household

has allocated to risky assets: the direct equity share and the risky share. We proceed by analyzing the amount of idiosyncratic and systematic risk in households' portfolios of risky assets. Finally, we consider the return loss of households, the difference between the mean expected return of households' portfolios and the maximum expected return level attained by the global index[10] at a given level of risk.

Given a global index, G, the capital asset pricing model (CAPM) asserts that the relationship between the excess return of asset i and the excess return of the global index is given by

$$r_{i,t} = \beta_i r_{G,t} + \epsilon_{i,t} \tag{2}$$

where the residuals measure the idiosyncratic risk of asset i. If we now consider a portfolio of n risky assets, then the volatility matrix of the assets' returns that is due to idiosyncratic risks is given by the covariance matrix of the portfolios' idiosyncratic risks, Σ.[11] Let a_h denote the portfolio allocation vector of household h, where $a_{h,i}$ represents the fraction of financial wealth invested in risky asset i. The idiosyncratic risk of the risky portfolio of household h is then given by

$$\sigma^2_{\epsilon,h} = a'_h \Sigma a_h, \tag{3}$$

and the systematic risk of the risky portfolio of household h is given by:

$$\sigma^2_{G,h} = \beta^2_h \sigma^2_G \tag{4}$$

where $\beta_h = a'_h \beta$. The total risk of the household portfolio, σ^2_h, therefore consists of systematic risk, $\sigma^2_{G,h}$, and idiosyncratic risk, $\sigma^2_{\epsilon,h}$. These measures capture the contribution of systematic and idiosyncratic risk to the volatility of returns of the risky portfolios of households, respectively.

We have now laid the necessary foundations to examine the outcomes of interest to us: market participation, asset allocation, risk taking and diversification, and return loss. Our measures of participation are equity participation, which takes the value of one if the household holds equity directly and zero otherwise, and risky participation, which takes the value of one if the household holds either equity or risky funds and zero otherwise. Our measures of the asset allocation of household h are the equity share (ϕ_h) and the risky share (θ_h), the share of financial wealth invested in equity and equity or risky funds.[12]. The total risk of household h (σ^2_h) is measured as the volatility of the risky part of

[10] Because Sweden is a small and open economy, we opt for a comparison to a diversified portfolio of global stocks. For this purpose, we follow Calvet et al. (2007b,a) and use the All Country World Index (henceforth the "global index") compiled by Morgan Stanley Capital International (MSCI) in U.S. dollars.

[11] The structure of the matrix can be illustrated as follows:

$$\Sigma = \begin{pmatrix} \sigma^2_1 & \sigma_{1,2} & \cdots & \sigma_{1,n} \\ \sigma_{2,1} & \sigma^2_2 & \cdots & \sigma_{2,n} \\ \vdots & \vdots & \ddots & \vdots \\ \sigma_{n,1} & \sigma_{n,2} & \cdots & \sigma^2_n \end{pmatrix}$$

where $\sigma^2_i = var(\epsilon_i)$ and $\sigma_{m,n} = cov(\epsilon_m, \epsilon_n)$.

[12] i.e. $\phi_h = \frac{\sum_{j \in E} Q_{h,j} P_j}{\sum_{j \in A} Q_{h,j} P_j}$ and $\theta_h = \frac{\sum_{j \in E \cup F} Q_{h,j} P_j}{\sum_{j \in A} Q_{h,j} P_j}$, where E stands for equity, F for risky funds, A for all financial assets, $Q_{h,j}$ is the number of shares of asset j owned by household h and P_j is the price of asset j. We define equity funds, hedge funds and mixed funds as risky funds.

the portfolio, i.e., the annualized standard deviation of the return of the risky part of the portfolio. The idiosyncratic risk of household h ($\sigma^2_{\epsilon,h}$) is that part of total risk that does not stem from systematic market movements. More precisely, it's the annualized standard deviation of the residuals (ϵ) in the CAPM regression in equation (2). Return loss (RL) is the average return a household loses by choosing the household portfolio rather than a position combining the benchmark portfolio with cash to achieve the same risk level. We consider the following regression:

$$Y_h = \alpha_0 + \alpha_1 DP_h + \alpha_2 INC_h + X_h\alpha_3 + \gamma_t + \mu_c + \varepsilon_h \tag{5}$$

where Y_h is the outcome variable under consideration of household h, DP_h is our measure of the distribution of decision power in household h, i.e., $DP_h = \frac{z_{h2}}{z_{h1}+z_{h2}}$ where z_{h1} and z_{h2} are fall-back incomes for the husband and the wife in household h, respectively. INC_h is the natural log of the household's total fall-back income, included so that the impact of the relative decision power of spouses can be identified separately from the impact of household income potentials.[13] County fixed effects are included to control for any unobserved fixed differences among counties. The year fixed effects will control for countrywide policy changes. ε_h is an unobserved component that captures everything else that influences the outcome variable under consideration. X_h is a vector of additional control variables that is added in order to pick up background factors.

If female decision power was randomly assigned across relationships, we could give OLS estimates of the above specification a causal interpretation. However, female decision power is unlikely to be randomly assigned, and it is possible that we are subject to selection on observables or unobservables. The coefficient on fall-back income, α_1, is therefore likely to give biased estimates of women's decision power regarding household financial portfolios.

To overcome this endogeneity problem, we must isolate a source of variation in female decision power that is exogenous to household portfolio outcomes. We employ the measure defined in equation (1) and use the fact that certain industries have traditionally been dominated by women and others by men to create sex-specific measures of prevailing local wages that are based on the county's industrial structure and on the countrywide wage growth in those industries that are dominant in each county. This measure reflects sex-specific labor demand (see Bartik, 1991; Aizer, 2010) without being affected by underlying worker characteristics in the county, which might be correlated with the riskiness of household portfolios. The instrument for the distribution of decision power in household h, DP_h, is

$$WR_h = \frac{w_{h2}}{w_{h1} + w_{h2}} \tag{6}$$

where w_{h1} and w_{h2} are the local wages of the husband and the wife, respectively, in household h from equation (1).

Our hypothesis is that households that live in counties that experience an increase in the relative labor demand for women will also experience an increase in women's influence within households through an increase in their relative decision power. These women will then renegotiate the composition of the financial portfolio held by their households. We expect this to lead to less risky and

[13] The main concern here is that households would be expected to respond to declining income potentials by reducing their financial risk taking. If labor market conditions of men declined during this period while the labor market remained similar, then relative decision power of women would go up while the income potentials of the household would fall and we cannot distinguish the impacts from these two changes from each other.

better diversified household portfolios. Table A.6 reports the results of a regression of the endogenous variable, DP_h, on the exogenous instruments in our sample of couples. These results show that the first-stage coefficients are large and highly statistically significant, where female spouses who experience a relative increase in their prevailing wages also experience an increase in their relative decision power, which validates the first stage of our IV analysis. Furthermore, the F-values obtained from the first stage – which are above $1,000$ for all outcomes – show that the instrument has substantial power.

As Staiger and Stock (1997) show, the weak instruments problem can arise even when the first-stage F-tests (based on R-squared) are significant at conventional levels in a large sample. Bound et al. (1995) and others have promoted the use of the partial R-squared statistic to assess whether a weak instrument problem is present despite a high F-statistic. This statistic is not much lower than R-squared, which alleviates concerns that weak instruments will bias our estimates.

6 Results

6.1 Descriptive statistics

We begin by showing that the financial portfolios of Swedish individuals and couples display the same characteristics as those generally found in the literature. Figure 2 provides graphical illustrations of how single men and single women differ from one another and from couples in their financial decision making. We control for the wealth and liabilities of agents, their age,[14] whether they have ever been married, whether they have children,[15] and their level of education.[16]

The difference in the participation of single men and single women in the risky asset market depends on which measure of participation we consider. Direct equity participation is consistently higher among single males than among single females. Conversely, there does not seem to be any consistent difference between the participation of single men and single women when we also consider participation in other risky asset markets. Furthermore, the figures reveal that couples show higher participation in risky asset markets than among singles.

We next compare the asset allocation decisions of single males and single females by looking at the direct equity share and risky asset share for these groups. Conditional on participation, single males invest a higher fraction of their financial wealth in equity than single females. The same behavior holds when we also consider other risky assets. However, the difference between single males and single females is much smaller when using the share of wealth allocated to risky assets than when comparing their direct equity shares, which implies that single males might be more likely to take idiosyncratic risks. The graph also reveals that couples have a lower direct equity share and a lower risky share than singles.

Conditional on participation, both the total and idiosyncratic risk of single males are higher than that of single females. The total risk of couples lies between the total risk of single males and single

[14] When controlling for the age of a couple, we use their average age.

[15] We control for the number of children under the age of 3, the number of children between ages 4 and 10 and the number of children between ages 10 and 17.

[16] We undertake the totality of these controls by running regressions for the outcome variables of interest to us with wealth, liabilities, age, a dummy for whether the person has ever been married, the number of children in each age category, dummies for different levels of education as controls and dummies for whether the person is a part of a couple, a single man or a single woman. We use the estimates obtained from these regression to obtain the predicted values for each group under consideration, where the values for the controls are the sample-wide averages of households for the controls.

females, and the idiosyncratic risk of couples falls between the idiosyncratic risk of single males and single females.

Figure 3 presents graphical illustrations of the gender differences in the return loss and its constituents compared with the return loss of couples. The return loss of couples is a convex combination of the return losses made by single men and single women, while this is not the case for its constituents. The risky share of couples is lower than that of single individuals, while the riskiness of their portfolios (captured by the beta coefficient) is almost the same as among single men.

To summarize, the figures present strong evidence of a clear gender difference in financial investment preferences and compares the decisions made by single individuals to those made by couples. However, the graphs do not say anything about what determines how the preferences of spouses are weighted when making decisions on the household level. These graphs can only be taken as descriptive evidence of household behavior, and we must turn to formal statistical tests to pursue the question of whether financial decision making of households is determined by the relative decision power of spouses.

6.2 Regression results

Table 2 reports the coefficients on the gender dummy for single individuals using OLS estimations, the OLS- and IV-estimated coefficients on decision power for the financial decisions of interest, and the first-stage coefficients.

The following subsections provide separate discussions of our results for market participation, asset allocation, and risk taking and diversification for both single individuals and households.

6.2.1 Comparison of single males and females

The conclusions drawn from comparing the risky asset market participation of single males and single females are different depending on which participation measure we use. When we look at direct equity participation, we find that single males participate more than single women. More specifically, single women are 6.6 percentage points less likely to participate in equity markets, all else equal, which indicates that direct equity participation is 33.5% lower among single women than among single men. When we consider risky asset market participation, on the other hand, single females participate more than single males. Risky asset market participation is 1.5 percentage points higher among single females than among single males, implying that risky asset market participation is 3.5% higher for single women than for single men.

As suggested by the descriptive statistics, the results for the direct equity share and the risky market share for single males and females are more consistent with one another than the participation results, i.e., the difference between men and women goes in the same direction. Of those singles who participate in equity markets, single males place a higher proportion of their financial wealth in equity. More specifically, the direct equity share for single women is 4.8 percentage points lower than that of single males, all else equal, which indicates that the direct equity share for single women is 17.0% lower than that of single men.

Looking at the risky share, for those who participate, single males have a higher risky share than single women, which indicates that even though risky market participation is greater among single women than among single men, single men that do participate invest a higher proportion of their

financial wealth in risky assets. The risky share for single women is 1.5 percentage points lower than that for single males, all else equal, implying that the risky share is 3.5% lower for single females than for single males.

Our comparison of single males and single females also reveals that single females hold less risk in the risky part of their financial portfolios, i.e., the volatility of the return of the risky part of the financial portfolios of single women is 5.2 percentage points (20.7%) lower than among single males. Furthermore, single females also hold less idiosyncratic risk in their financial portfolios, i.e., idiosyncratic risk is 3.7 percentage points (24.4%) lower among single women than among single men. We therefore conclude that single females hold less risk in their portfolios when compared with single males, and single females' portfolios are better diversified.

Previous studies suggest that the gender differences in risky asset market participation might be attributed to gender differences in risk appetite (see, e.g., Halko et al., 2012). However, these studies generally define risky assets as stocks. In this paper, we also consider other types of risky assets. This more comprehensive measure of risky asset market participation shows that the gender difference in participation in risky asset markets is much smaller than measuring stock market participation alone implies. This suggests that the gender difference in risky asset market participation cannot be fully explained by differences in the risk appetite between men and women; it is rather consistent with the notion that men and women have different preferences regarding how to take risk. A comparison of the gender difference in equity shares and the gender difference in risky shares reveals the same finding. The more comprehensive risk measure suggests that there is a much smaller gap between men and women than the equity share suggests.

6.2.2 Couples

Considering market participation, we find that a household's participation in the risky asset markets increases as a married woman's decision power increases. More specifically, one standard deviation increase in the relative decision power of a married woman implies that household participation in risky asset markets is increased by 0.08 standard deviations, which implies a 5.8% increase from mean participation. This could be explained by either increased participation in equity holdings or other risky markets. When we consider the decision to participate in equity markets, we find that participation is hardly effected by this shift in decision power, it decreases by 0.01 standard deviations as a result of this, which implies a 0.5% decrease from mean participation in the equity market. Increased participation in risky asset markets by households that experience a favorable shift in the bargaining power of wives is therefore the result of increased holdings of risky funds but not equity.

Our risky asset market estimate implies that a one standard deviation shift in the relative bargaining power of women would move participation from 0.68 to 0.73, i.e., it would increase participation in risky asset markets by 5 percentage points. With an equity premium of 8%, this would increase the return of those households that, as a result of this shift, are now participating and hold the average value of risky assets ($27,601) by about $2,200.

Among households who participate in equity markets, greater decision power of women implies a lower equity share, meaning that they place a lower proportion of their financial wealth in equity. More specifically, the direct equity share drops by 0.08 standard deviations when the decision power of women increases by one standard deviation. Similarly, an increase in women's decision power in

households that participate in either equity or in other risky asset markets results in a lower risky share, meaning that the household places a lower proportion of their financial wealth in equity or other risky assets. A one standard deviation increase in the decision power of women in households reduces the risky share by 0.03 standard deviations, which implies an 8.8% and a 1.8% decrease from the mean share of equity and other risky asset markets in the financial wealth of households, respectively.

Finally, we consider the risk taking and diversification decisions of households and find that greater decision power for women reduces the former and increases the latter. More specifically, our results show that a one standard deviation increase in the decision power of married women decreases the total risk in the household's financial portfolio, i.e., the volatility of the return of the risky part of the financial portfolio of the household, by 0.10 standard deviations. This also reduces the idiosyncratic risk in the household's financial portfolio by 0.10 standard deviations, which implies a 6.1% and 4.8% reduction from the mean idiosyncratic and total risk held in the financial portfolios of households, respectively.

Idiosyncratic and total risk measure the level of risk in the risky portfolios of households. However, these measures do not capture the risk of the total financial portfolios. One might worry that our findings would not hold if our risk measures are weighted by the shares of financial wealth invested in equity and risky assets, which captures the level of idiosyncratic risk and total risk held in the total financial portfolios. We therefore run regressions using weighted risk measures and find that these results are consistent with our results from the unweighted regressions and that the greater decision power of wives reduces the amount of idiosyncratic and total risk held in the financial portfolios of households. These results are available upon request.

Finally, we find that the relative bargaining position of spouses affects household welfare. One standard deviation increase in the relative decision power of female spouses reduces the return loss of the household by 0.08 standard deviations, which is a 7.0% reduction from the mean return loss of households.

One potential criticism of our IV approach is that households can migrate from one region to another. People are attracted to booming markets while they are inclined to leave markets that are declining (see, e.g., Blanchard and Katz, 1992) and because migration is likely to be selective, it may not be legitimate to draw inferences from our estimated effect of the relative bargaining power within households on the financial decision making of households. If in-migrants moving into counties experiencing a relative improvement in labor market conditions for women were more risk averse than the natives of those counties, this composition effect would be reflected in our estimates. We therefore need to test for population shifts in response to shocks in relative wages of men and women.

We can test this directly because we observe if individuals move between counties. In Table A.7, we display the 2SLS results from a regression of an indicator of whether a couple moved regressed on their relative bargaining power. This regression is identical to our main specification shown in Table 2 aside from the dependent variable. The results show that couples do not respond to shifts in relative earnings potentials by moving between counties.

6.3 Additional Specifications

In this section, we present the results of a number of alternative specifications that verify the robustness of our results and hence their causal interpretation.

Financial education is known to be important for stock market participation decisions (Christiansen et al., 2008), which implies that financial education should be given special attention in an analysis such as ours. As economists have acquired knowledge about financial markets and risk-return trade-offs by means of formal education, an indicator of a degree in economics[17] should capture the effect that financial education has on financial decision making. Among single individuals, stock market participation and risky asset market participation are positively influenced by holding a degree in financial fields of study. The same holds for the equity share, the risky share, idiosyncratic risk, and total risk. However, controlling for financial education does not change the significant and sizable gender difference in financial decision making that we find in this study.

Next, we use a specification with household fixed effects to address any fixed unobserved determinants of decision-making power at the household level. The empirical analysis of most studies on household financial decision making is mainly conducted across observations (see, e.g., Yilmazer and Lich, 2013), and it might be proposed that our findings are only driven by variation across observations. However, our data allow us to isolate the effect of shifts in decision power within households over time on the financial decision making of the household by re-conducting our analysis using household fixed effects. Our estimates verify that a shift in the decision power from one spouse to another does in fact affect the financial decision making of the household. These results can be found in Table 3.

In addition, we estimate our main specification using group aggregates, i.e., we run regressions that are limited to municipality-husband's education level-wife's education level-year cells. A cell can therefore be considered as a type of a couple at a point in time where the type is defined as a couple living in a specific municipality and where each spouse has a certain levels of education. This leaves us with approximately 2,600 types of couples and more than 18,000 observations. The results of this analysis are consistent with the results obtained for individual households. For these types of couples, there are adjustments made when women experience a relative increase in their bargaining position, i.e., the equity participation of these household portfolios does not change but their participation in other risky asset markets grows; in addition, both the equity and risky shares in these portfolios decreases, which leads to a decrease in the riskiness of these portfolios, and these households become better diversified. These results can be found in Table 4.

Our results regarding the effects of decision power on the portfolio composition of households are also robust to the inclusion of an indicator for economic education. Thus, this allows us to say something about how the financial education of male and female spouses affects financial decision making in households and about the relative importance of these variables. We find that the financial education of both male and female spouses has a positive effect on all of our outcome variables except that female economists do not affect the equity share and the return loss of their households. Furthermore, the effect of male spouses is much larger than that of female spouses. These results can be found in Table 5.

Couples in which both spouses hold degrees in financial fields of study present notable findings. High bargaining power among female spouses does not have as much of an impact on household portfolios as in other couples. Household participation in equity and other risky asset markets is not affected by increases in the relative decision power of these women. The equity share and risky share are reduced but not by as much as they are for couples in general, and the same holds for idiosyncratic

[17] We also include related fields, such as finance and business administration.

and total risk. These results can be found in Table 6.

The true gender wage gap can generally be considered as consisting of a within-fields of education component and a between-fields of education component. Due to assortative mating, our measure of the relative decision power of spouses therefore captures the relative within-field education wage gap in many cases. If it is the case that spouses in the same field and with the same level of education are also likely to work in the same industry, then individuals working within specific industries are likely to experience the same type of shifts in their relative decision power. We might then worry that couples in certain industries drive the results. We therefore run regressions in which we control for the industries of spouses to make sure that the relative bargaining position of spouses rather than background risk drives our findings. Our results are robust to these regressions, as can be seen in Table A.8.

Next, we show that our results are not sensitive to how the difference in the threat points of spouses is defined. In Table **??**, we use an alternative measure of the fall-back income gap, the linear difference in the fall-back income of the spouses. The coefficient estimates are smaller than those when we define the fall-back income gap to be the proportion of female fall-back income and the total fall-back income of the couple, but this is due to the scale of the gap when defined in this manner. The implied effects, however, are similar to those obtained in our baseline specification.

We also derive an instrument for decision power using countrywide employment growth in the industries in each county as the measure of demand. This instrument is similar to the measure used in our baseline specification, but using this alternative instrument shows that our findings are not limited to the wage growth instrument used in our baseline specification. The results obtained using this instrument can be found in Table **??**. The estimates are similar to those we obtained in our baseline specification.

In addition, we utilize changes in the industrial composition of counties over time as an alternative source of identifying variation. For this instrument, we hold industry wages at the county level fixed at the base year (1999) and create a time-varying measure of the share of women working in each industry. Our findings hold when using this instrument and are presented in Table **??**.[18]

In our main specification, we have chosen to cluster standard errors at the municipality level because it is reasonable to expect that the error terms for individuals in the same municipality are not independent. However, our results are robust to alternative clustering schemes. One concern is that labor market shocks will induce correlations between individuals within years. We therefore run our regressions in which the standard errors are clustered at the year level, and this does not affect the significance of our results. Another concern is that we have correlated standard errors in two cluster dimensions, i.e., that our disturbances are both correlated within municipalities (autocorrelated) and correlated within years (common). It is therefore important to check whether our results are robust to allowing for arbitrary within-cluster correlation in these two cluster dimensions. We run this check, and this does not change our previous findings.

Another concern is that, although the standard errors are correlated at the municipality level, they could also be correlated at the county level; therefore, we have nested two-way clustering. In order to address this concern, we perform estimations in which we cluster the standard errors at

[18] As noted by Angrist and Pischke (2008), standard over-identification tests such as the Sargan test are invalid for instruments with heterogeneous treatment effects. This explains why we do not report over-identification tests even though our two-stage system is over-identified.

the highest level of aggregation (Cameron et al., 2011), namely, the county level, and the results remain robust, although the standard errors increase somewhat. We also perform within-county year clustering because the industrial composition of the country indicates that industry-related labor shocks are likely to cause correlations between the year and the county. This, too, does not lessen the statistical significance of our results. The results for alternative clustering schemes other than our main specification are available upon request.

Another way to verify that autocorrelation in our yearly labor demand shocks does not drive the results is to consider shifts in labor demand over several years. More specifically, we use the change in the relative fall-back options over four and five years with different beginning and ending years. Table **??** shows the results obtained by estimating the effect of the shift between 2000 and 2005.[19] We found that this changed our results very little.

6.4 Risk decomposition

High idiosyncratic risk in household portfolios can result in welfare loss. Calvet et al. (2007b) calculate the cost of under-diversification in Sweden and find that the median investor experienced an annual return loss from underdiversification of 2.9% on a risky portfolio, which equals 0.5% of household disposable income. However, there is substantial heterogeneity in these costs, and for every one in ten investors, it amounts to more than 4.7% of disposable income.

As shown above, a married woman with greater decision power increases the diversification of the household portfolio. However, we have not been able to say anything about the effect of such increased diversification on household welfare. A good way of determining the welfare losses of suboptimal financial portfolios is to look at the return loss of household portfolios, or the average cost of choosing a suboptimal portfolio. More specifically, the return loss measures the loss in the potential return for a given level of risk, so it captures the overall efficiency loss in the portfolio. The return loss of household h is calculated as

$$RL_h = r_m \times \theta_h \times \beta_h \times \frac{RSRL_h}{1 - RSRL_h}$$

where r_m is the market risk premium (in our case, it is proxied by the historical average excess return of the MSCI World Index), θ_h is the risky share of the portfolio, β_h is the beta of the portfolio, and $RSRL_h$ is the relative Sharpe ratio loss of the portfolio. The relative Sharpe ratio loss measures the diversification loss in the risky asset portion of the portfolio and is defined in the following manner:

$$RSRL_h = \frac{S_G - S_h}{S_G}$$

where S_G and S_h are the Sharpe ratios of the benchmark and the household portfolio, respectively. A relative Sharpe ratio loss of 20% indicates that the portfolio's Sharpe ratio is 20% below that of the MSCI World Index. In order to determine the relative importance of the individual constituents of the return loss, we divide the relative return loss of household h by the average return loss for households

[19] The results for the other periods were almost identical.

and log-linearize the expression. Noting that $\bar{r}_m = r_m$ for all h, we obtain the following:

$$(\ln RL_h - \ln RL) = (\ln \theta_h - \ln \theta) + (\ln \beta_h - \ln \beta) + (\ln \frac{RSRL_h}{1 - RSRL_h} - \ln \frac{RSRL}{1 - RSRL})$$

By estimating a separate identical regression for each term in the expression above, the regression coefficients on the left-hand side of the expression must necessarily equal the sum of the respective regression coefficients on the right-hand side, which will allow us to determine the relative importance of the different components of the return loss.

We begin by decomposing the return loss of single individuals such that we can compare the results for married individuals to that of these single individuals. This allows us to assess how marriage and intra-household bargaining affects household financial decision making. We find that single women have a lower return loss than single men and that this is to a great extent the result of superior diversification. A comparison to couples reveals interesting findings. As the results for single individuals might suggest, the increased bargaining power of married women indeed reduces the return loss of household portfolios. However, the propagation mechanism is different. The return loss reduction for household portfolios is rather driven by a better diversified risky portfolio, while the return loss difference between single men and single women is mainly due to a lower beta coefficient among women. These results can be found in Table **??**.

6.5 Interpretation of Results and the Distribution of Effects

The IV estimates represent the average marginal change from an increase in women's share of fall-back income (FB_h) for the subgroup affected by the female labor demand share instrument (DP_h). This subgroup consists of couples whose financial decisions are affected by small shifts in sex-specific labor demand. These estimates cannot be generalized to the larger population without additional assumptions, such as a constant marginal change in financial decision making across households as a result of a change in the distribution of household decision power. However, the fact that Sweden is one of the most egalitarian countries in the world (EIGE, 2013) may suggest that the results offer a lower bound for global effects.

Comparing the results from the OLS and IV regressions, we find that the coefficients from the IV regressions are much larger for all outcomes except for participation. However, the standard errors of the IV estimates are also much larger than those of the OLS estimates, and the wider confidence interval is the price we pay to obtain a consistent estimator of the effect that the distribution of decision power within households has on the composition of portfolios. Part of the difference might therefore be due to this effect. However, although the IV estimates are imprecise, the range of the point estimates is well above the corresponding OLS estimates for all outcome variables except for equity participation.

A potential explanation of the difference between the estimates of the IV model and those from the OLS specifications is the endogeneity of the fall-back income measure. As discussed above, the relative outside options of couples may reflect unobserved characteristics, which would imply that our measure of the relative decision power of couples suffers from endogeneity; therefore, the OLS estimates will be biased. For instance, women with very likable personalities, better social networks or who are physically attractive may be more successful in exerting their preferences such that their

household portfolios are more similar to their preferred portfolios than those of women with disagreeable personalities, poor social networks or who are physically unattractive. We will then obtain biased OLS estimates if any of these attributes is also correlated with our measure of decision power. [20] Furthermore, our estimation of the outside option is measured with error, which might be another source of endogeneity.

Another explanation for the disparity between the IV and the OLS estimates is heterogenous treatment effects. It is likely that a substantial fraction of those affected by the changes in labor market opportunities may be households in which women are on the margin of being able to exert their preferences. Therefore, the local average treatment effects identified in the IV specifications may not be very informative with regard to the overall effect of a shift in sex-specific labor demand on household portfolios, although it captures the effect for households in which women are on the verge of being able to have an impact on the financial decisions within their households.

6.6 The effect of divorce

In this paper, we have chosen to use an IV approach to identification rather than an event study; the main reason for this decision is that an event study that looks at the effects of entering and exiting marriage would not capture what happens within marriages and would completely ignore those who remain married during the entire period. However, estimates from an event study can nonetheless be used to boost the credibility of our findings.

As noted above, in Sweden, all assets are split equally among spouses at the time of divorce in the absence of a prenuptial agreement. Couples divide their assets privately, but in the event of a disagreement, they can apply to the district court for the appointment of a marital property administrator, who is then responsible for fairly splitting their assets. In general, people therefore divide all their assets by themselves at the time of divorce, including their financial assets. Splitting assets gives couples a good opportunity to update their financial portfolios. If it is really the case that women prefer to hold a lower share of risky assets in their portfolios than men and the intra-household distribution of decision power stands in their way of holding their preferred share of risky assets in their financial portfolios, we should observe that women decrease the shares of risky assets in their financial portfolios when they divorce and that men increase their shares of risky assets.

In order to test whether marriage actually changes the financial decision making of individuals, we employ a difference-in-difference (DD) estimation strategy. The outcome variables, the equity share and the risky share, for individual i at time t is denoted Y_{it}. We consider only individuals who were married 1999-2001 and let $T = 1$ for those individuals that were divorced in 2002 and remained so during the sample period, while $T = 0$ for those who remained married during the period. We are interested in estimating the average effect on the equity share and the risky share for individuals who divorce:

$$E[Y_{1i} - Y_{0i}|T = 1] \tag{7}$$

[20] e.g., Boulier and Rosenzweig (1984) find that less attractive women receive more schooling. This is supported by the findings of French et al. (2009) that physical attractiveness has a negative effect on school performance, after controlling for personality and grooming. If exogenously less attractive women obtain more education (all else equal) than more attractive women, the estimated effect of the decision power of women on household outcomes where both relative outside options and attractiveness affect the outcome under consideration would be biased downwards in a simple OLS analysis. Because educational attainment is among the main determinants of one's outside option, less attractiveness among better educated women would bias our OLS estimates downward.

where Y_{1i}^1 is the outcome of individual i when he has divorced, and Y_{0i}^0 is the outcome of individual i if he remains married. Because an individual's outcome cannot be observed both when he divorces and when he remains married, the main challenge when attempting to evaluate this effect is constructing counterfactuals.

The simple DD estimator compares the change in the outcome variable for an individual who is married in the first part of the sample period but divorced in 2002 with the change in the outcome variable for an individual that remained married throughout the sample period. The implicit identifying assumption is that if no couples had divorced, the change in the outcome variable would have been the same for both groups of investors, i.e, formally:

$$E[Y_{0i,t\geq 2002} - Y_{0i,t<2002}|T=1] = E[Y_{0i,t\geq 2002} - Y_{0i,t<2002}|T=0], \tag{8}$$

The unconditional DD estimator is then calculated as:

$$E[Y_{1i,t\geq 2002} - Y_{0i,t<2002}|T=1] - E[Y_{0i,t\geq 2002} - Y_{0i,t<2002}|T=0] \tag{9}$$

We also control for additional background variables using a regression framework to generalize specification (9). Let $after = \mathbb{I}(t \geq 2002)$ denote the indicator of whether the observation occurs after the year of divorce we chose to consider. The DD estimator of the effect of the divorce is the estimated coefficient γ_{DD} to $after \times T$ in the following OLS regression of the outcome variables Y_i on T, $after \times T$ and various control variables:

$$Y_{it} = \gamma_0 + \gamma_1 T + \gamma_{DD}[after \times T] + X_{it}\delta + \epsilon_{it}, \tag{10}$$

where X_{it} is the vector of additional control variables and $\epsilon_{it} \sim N(0, \sigma^2)$ is the unobserved idiosyncratic variation in outcomes across individuals and treatment groups.

We find that couples split their assets at the point of divorce such that both the equity share and the risky share of women decrease, while both of these shares increase for men, which suggests that women take relatively less risky assets than men out of the financial portfolio of the household during the process of cherry picking the assets under the requirements of the divorce law when couples opt out of marriage. These findings show that marriage does affect the share of risk that men and women hold in their portfolios and is consistent with the findings of Christiansen et al. (2013), who investigates how changes in marital status affect financial risk taking. Table **??** reports our results.

7 Conclusion

In this paper, we use a unique dataset to show that the household cannot be treated as one unit when analyzing its financial decisions, and we make several contributions to the literature. First, we show that distribution factors that presumably determine the bargaining position of spouses are an important factor when modeling households' financial decision making. The distribution factor we use to carry out this empirical test is the labor market potential of spouses, which we measure directly by matching married individuals with "identical" single individuals. This factor captures the utility of spouses at their threat points. To address endogeneity concerns, we employ a source of exogenous variation as an instrument for this measure. We find that the portfolios of couples in which the

decision power of the woman is relatively high exhibit lower levels of risk compared with the portfolios of couples in which the decision power of the woman is relatively low. More specifically, as the decision power of a married woman increases, direct equity participation decreases, while participation in other risky asset markets (i.e., risky funds) increases; given that the household participates in risky asset markets, the share of wealth invested in risky assets decreases; the riskiness of the household portfolio decreases; and the diversification increases. Second, we show that household welfare is affected by the distribution of decision power among couples. Relatively higher decision power of married women reduces the costs associated with underdiversified portfolios. This indicates that women exert their decision power to reduce the costs incurred as a result of holding sub-optimal portfolios.

We have managed to look inside the black box of how couples make financial decisions and are able to determine that the bargaining position of spouses affects the composition of the financial portfolios of households. There may be various reasons why men and women have different preferences concerning financial decisions, and it is not the goal of this paper to investigate the reasons for these gender differences. The important finding in the context of this paper is that men and women have different preferences, regardless of the reasons for them, and that distribution factors determine how these preferences are aggregated at the household level.

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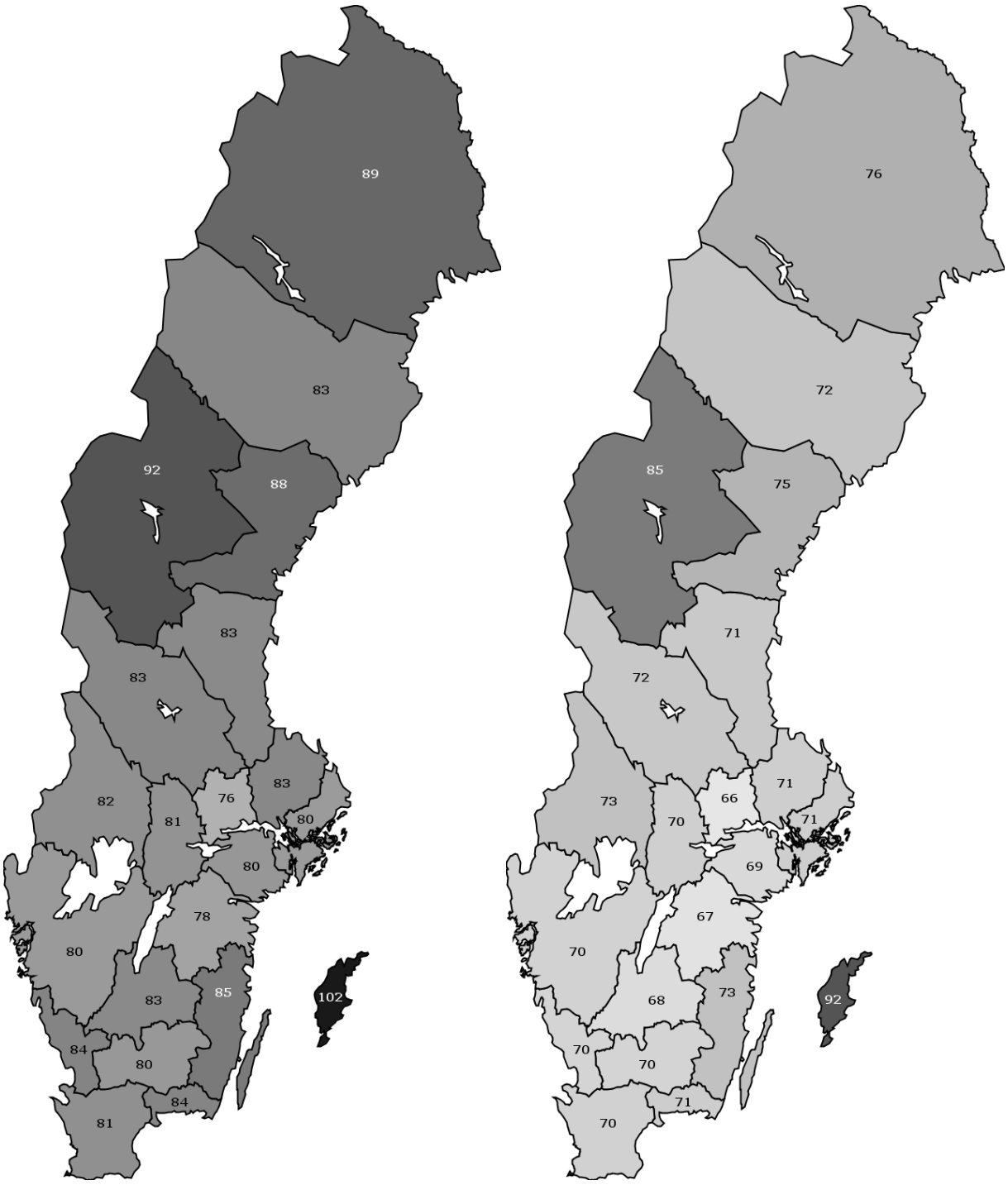

Figure 1: Fall-back and actual income ratios by counties

The graph to the left shows the average fall-back income ratios of households in each county in Sweden. A darker color means that the fall-back incomes of spouses are more similar in the county under consideration. The graph to the right shows the average actual income ratios of households in each county in Sweden. A darker color means that the actual incomes of spouses are more similar in the county under consideration. The numbers displayed are percentages for the year 2006.

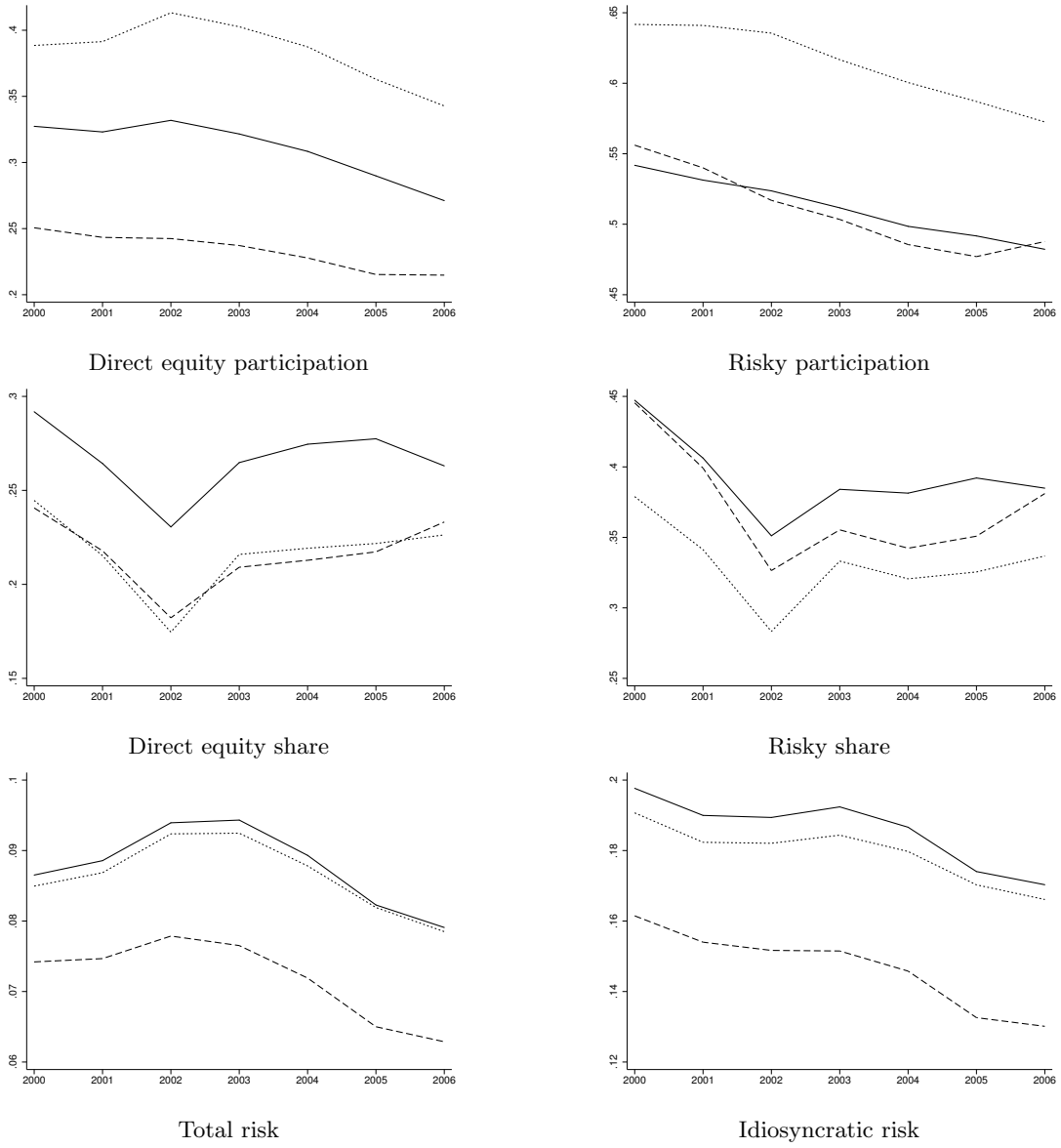

Figure 2: The solid line represents single men, the dashed line represents single women, and the dotted line represents couples. We control for wealth, liabilities, age, whether individuals have ever been married, whether they have children, and their level of education. The values used for the controls are the subgroup averages.

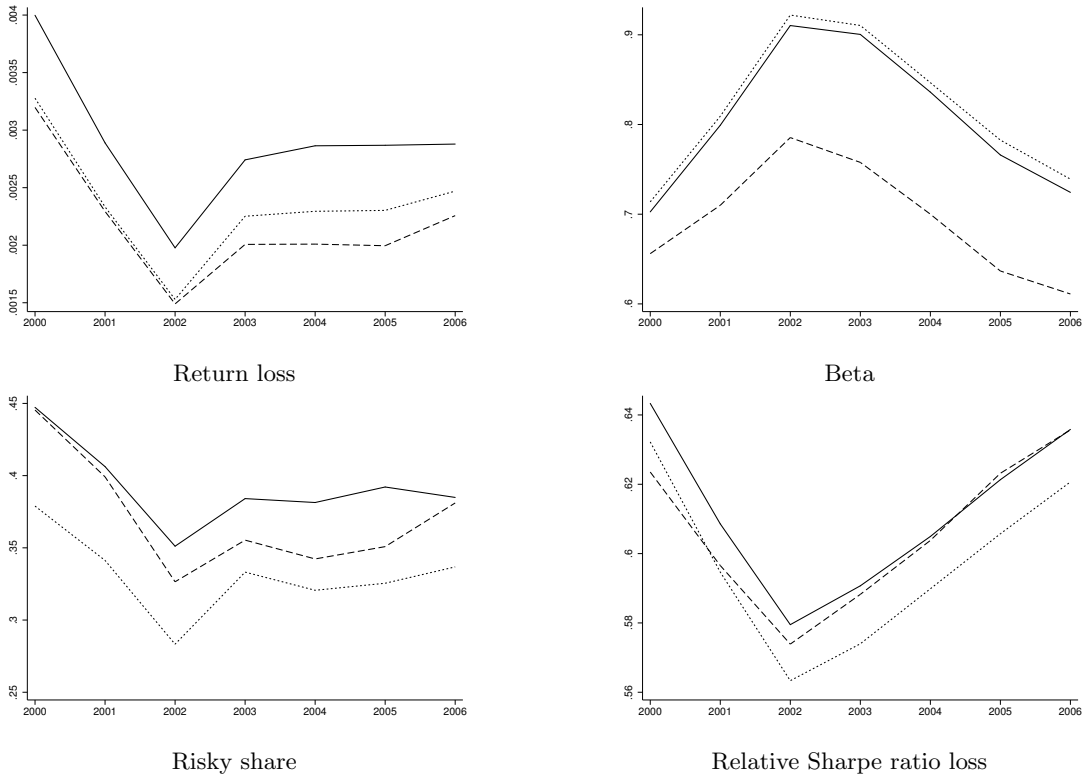

Figure 3: The solid line represents single men, the dashed line represents single women, and the dotted line represents couples. We control for wealth, liabilities, age, whether individuals have ever been married, whether they have children, and their level of education. The values used for the controls are the subgroup averages.

Table 1: Summary Statistics

	Married Individuals			Single Males			Single Females		
	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation	Mean	Median	Standard Deviation
Portfolio characteristics:									
Financial wealth ($)	46,451	10,997	776,312	29,585	3,635	498,440	21,865	3,255	464,817
Direct equity ($)	19,645	0	765,981	8,899	0	467,181	4,839	0	438,555
Direct equity share	0.23	0.13	0.24	0.3	0.2	0.28	0.26	0.16	0.26
Direct equity participation	0.45	0	0.5	0.23	0	0.42	0.17	0	0.37
Risky assets ($)	27,601	1,491	769,109	14,890	0	479,544	9,719	0	441,501
Risky share	0.39	0.36	0.28	0.44	0.42	0.31	0.42	0.4	0.29
Risky participation	0.68	1	0.47	0.44	0	0.5	0.43	0	0.5
Total risk	0.27	0.26	0.15	0.28	0.27	0.16	0.23	0.23	0.14
Idiosyncratic risk	0.16	0.14	0.11	0.17	0.15	0.12	0.13	0.12	0.09
Financial characteristics:									
Disposable income ($)	33,128	29,443	113,016	26,041	24,849	103,504	23,800	23,412	24,419
Salary income ($)	35,005	33,693	27,997	27,127	27,321	28,758	21,989	20,504	21,112
Real estate wealth ($)	287,533	196,836	790,645	76,216	0	375,991	64,561	0	195,420
Total liabilities ($)	63,708	40,993	181,162	39,639	11,859	122,740	32,256	10,325	85,124
Demographic characteristics:									
Unemployment dummy	0.17	0	0.37	0.13	0	0.34	0.15	0	0.36
Entrepreneur dummy	0.2	0	0.4	0.1	0	0.29	0.05	0	0.22
Student dummy	0.04	0	0.2	0.14	0	0.35	0.19	0	0.39
Age	47.69	48.5	10.11	38.15	36	13.66	38.74	38	14.31
Household size	3.2	3	1.19	1.28	1	0.7	1.55	1	0.91
High school dummy	0.92	1	0.27	0.77	1	0.42	0.81	1	0.39
Post-high school dummy	0.46	0	0.5	0.28	0	0.45	0.36	0	0.48
Immigrant dummy	0.22	0	0.41	0.14	0	0.34	0.15	0	0.36

Note: The table reports the summary statistics of the main financial and demographic characteristics of Swedish households at the end of 2006. We convert all financial variables into U.S. dollars using the exchange rate at the end of 2006 (1 SEK = $ 0.1463). The computations are based on all individuals between the ages of 16 and 65 considered throughout the empirical analysis. Missing bank balances are imputed using the constant imputation method discussed in the data section. All logarithms are computed in the natural base. We consider couples to be a man and a woman who are married and singles to be those who are living alone or are living with someone but without a common child. The reported numbers for married individuals are the numbers for them and their spouses divided by two.

Table 2: The Impact of the female's decision power on household financial portfolios

	(1) Direct Equity Participation	(2) Risky Participation	(3) Direct Equity Share	(4) Risky Share	(5) Idiosyncratic Risk	(6) Total Risk	(7) Return Loss
Panel A: Singles							
Female dummy	-0.0685	0.0120	-0.0472	-0.0149	-0.0373	-0.0523	-0.0007
	(0.0024)	(0.0029)	(0.0012)	(0.0012)	(0.0009)	(0.0011)	(0.0000)
Compared to male mean	-18.7%	2.1%	-14.3%	-3.2%	-19.1%	-16.7%	-17.1%
R^2	0.2094	0.2399	0.0279	0.0945	0.0609	0.0635	0.0897
Observations	16,621,352	16,621,352	3,770,588	7,696,315	8,217,888	8,217,888	7,628,162
Individuals	2,425,143	2,425,143	577,476	1,145,492	1,197,370	1,197,370	1,132,664
Panel B: Couples							
DP - OLS	-0,0271	0,1783	-0,1133	-0,0375	-0,0551	-0,0728	-0,0011
	(0.0084)	(0.0082)	(0.0051)	(0.0053)	(0.0022)	(0.0031)	(0.0000)
R^2	0,2721	0,2826	0,0752	0,1783	0,0393	0,0414	0,1463
DP - IV	-0.0373	0.2456	-0.1352	-0.0459	-0.0676	-0.0893	-0.0013
	(0.0118)	(0.0103)	(0.0062)	(0.0065)	(0.0028)	(0.0039)	(0.0001)
SD*	-0.01	0.09	-0.09	-0.03	-0.11	-0.10	-0.08
R^2	0,2718	0,2826	0,0730	0,1777	0,0355	0,0374	0,1441
$Fstatistic$	2,374	2,374	20,780	21,697	21,153	21,153	21,506
Observations	6,061,153	6,061,153	2,951,707	4,335,198	4,472,023	4,472,023	4,307,594
Households	904,335	904,335	446,018	669,472	663,177	663,177	655,825

Notes: Standard errors are clustered at the municipality level and are within parentheses. Each entry is a separate regression. In the IV model, the fall-back wage ratio is instrumented using the prevailing local wage ratio. The direct equity share is defined as the value of stocks divided by total financial wealth. The risky share is defined as stocks, equity funds, hedge funds and mixed funds divided by total financial wealth. Direct equity (risky) participation is equal to one for those whose direct equity (risky) share is positive and zero otherwise. Total risk is defined as the volatility of the risky part of the portfolio, measured as the annualized standard deviation of the return of the risky part of the portfolio. Idiosyncratic risk is the part of total risk that does not stem from systematic market movements.
SD effect* refers to the effect on the outcome of interest from a 1 sd increase in the bargaining power ratio of couples, measured in the sd of the outcome variable. For singles, it refers to the effect on the outcome of interest of being female.

Table 3: Impact of the female's decision power on household financial portfolios - couple-fixed effects

	(1) Direct Equity Participation	(2) Risky Participation	(3) Direct Equity Share	(4) Risky Share	(5) Idiosyncratic Risk	(6) Total Risk	(7) Return Loss
BP							
DP - IV	0.0054	0.3817	-0.2157	-0.2152	-0.0533	-0.0808	-0.0033
	(0.0707)	(0.0697)	(0.1066)	(0.0785)	(0.0251)	(0.0356)	(0.0008)
SD*	0.00	0.14	-0.15	-0.13	-0.08	-0.09	-0.20
Observations	3,694,852	3,694,852	1,543,024	2,442,930	2,459,842	2,459,842	2,386,790
Households	527,836	527,836	220,432	348,990	351,406	351,406	340,970

Notes: These regressions include only couples who are together during the whole sample period (7 years). Standard errors are clustered at the municipality level and are within parentheses. Each entry is a separate regression. In the IV model, the fall-back wage difference is instrumented using the prevailing local wage difference, i.e., female fall-back income minus male fall-back income. The direct equity share is defined as the value of stocks divided by total financial wealth. The risky share is defined as stocks, equity funds, hedge funds and mixed funds divided by the total financial wealth. Direct equity (risky) participation is equal to one for those whose direct equity (risky) share is positive and zero otherwise. Total risk is defined as the volatility of the risky part of the portfolio, measured as the annualized standard deviation of the return of the risky part of the portfolio. Idiosyncratic risk is the part of total risk that does not stem from systematic market movements. SD effect* refers to the effect on the outcome of interest from a 1 sd increase in the bargaining power ratio of couples, measured in sd of the outcome variable.

Table 4: Impact of the female's decision power on household financial portfolios - Cell Regressions

	(1) Direct Equity Participation	(2) Risky Participation	(3) Direct Equity Share	(4) Risky Share	(5) Idiosyncratic Risk	(6) Total Risk	(7) Return Loss
BP							
DP - OLS	0.0608	0.2954	-0.2035	-0.1901	-0.0429	-0.0535	-0.0020
	(0.0295)	(0.0253)	(0.0138)	(0.0157)	(0.0073)	(0.0107)	(0.0001)
R^2	0.7390	0.7718	0.5725	0.7568	0.3466	0.4139	0.8292
DP - IV	-0.0210	0.2466	-0.2171	-0.2033	-0.0626	-0.0856	-0.0023
	(0.0252)	(0.0257)	(0.0156)	(0.0174)	(0.0070)	(0.0102)	(0.0002)
SD effect*	0.00	0.09	-0.14	-0.11	-0.11	-0.11	-0.12
R^2	0.7378	0.7714	0.5723	0.7567	0.3442	0.4112	0.8289
$Fstatistic$	4,131	4,131	4,131	4,131	4,131	4,131	4,131
Observations	12,488	12,488	12,488	12,488	12,488	12,488	12,488
Cells	1,836	1,836	1,836	1,836	1,836	1,836	1,836

Notes: Standard errors are clustered at the municipality level. Each observation is a municipality-husband's education level-wife's education level-year cell. A cell can therefore be considered as a type of a couple, i.e., living in a specific municipality, where spouses have both certain levels of education. Each entry is a separate regression. In the IV model, the fall-back wage ratio is instrumented using the prevailing local wage ratio. The direct equity share is defined as the value of stocks divided by total financial wealth. The risky share is defined as stocks, equity funds, hedge funds and mixed funds divided by total financial wealth. Direct equity (risky) participation is equal to one for those whose direct equity (risky) share is positive and zero otherwise. Total risk is defined as the volatility of the risky part of the portfolio, measured as the annualized standard deviation of the return of the risky part of the portfolio. Idiosyncratic risk is the part of the total risk that does not stem from systematic market movements. SD effect* refers to the effect on the outcome of interest from a 1 sd increase in the bargaining power ratio of couples, measured in sd of the outcome variable.

Table 5: Impact of the female's decision power on household financial portfolios controlling for financial education

	(1) Direct Equity Participation	(2) Risky Participation	(3) Direct Equity Share	(4) Risky Share	(5) Idiosyncratic Risk	(6) Total Risk	(7) Return Loss
Panel A: Singles							
Female dummy	-0.0714	0.0095	-0.0483	-0.0157	-0.0379	-0.0532	-0.0007
	(0.0024)	(0.0030)	(0.0012)	(0.0011)	(0.0009)	(0.0011)	(0.0000)
SD effect*	-0.18	0.02	-0.17	-0.05	-0.35	-0.35	-0.22
Economist dummy	0.0804	0.0676	0.0228	0.0210	0.0146	0.0211	0.0004
	(0.0060)	(0.0024)	(0.0010)	(0.0010)	(0.0012)	(0.0016)	(0.0000)
SD effect*	0.40	0.15	0.08	0.05	0.10	0.08	0.12
R^2	0.2123	0.2414	0.0286	0.0950	0.0629	0.0656	0.0911
Observations	16,621,352	16,621,352	3,770,588	7,696,315	8,217,888	8,217,888	7,628,162
Individuals	2,425,143	2,425,143	577,476	1,145,492	1,197,370	1,197,370	1,132,664
Panel B: Couples							
DP - OLS	-0.0109	0.0676	-0.0590	-0.0237	-0.0257	-0.0333	-0.0005
	(0.0055)	(0.0053)	(0.0023)	(0.0022)	(0.0015)	(0.0021)	(0.0000)
Male economist	0.0515	0.0244	0.0348	0.0207	0.0129	0.0184	0.0003
	(0.0016)	(0.0024)	(0.0018)	(0.0013)	(0.0005)	(0.0007)	(0.0000)
Female economist	0.0403	0.0303	-0.0016	0.0037	0.0036	0.0060	0.0000
	(0.0015)	(0.0013)	(0.0012)	(0.0012)	(0.0003)	(0.0004)	(0.0000)
R^2	0.2650	0.2654	0.0665	0.1736	0.0275	0.0306	0.1393
DP - IV	-0.0001	0.2460	-0.1121	-0.0377	-0.0554	-0.0722	-0.0011
	(0.0144)	(0.0160)	(0.0073)	(0.0066)	(0.0028)	(0.0037)	(0.0001)
SD effect*	0.00	0.09	-0.08	-0.02	-0.09	-0.08	-0.06
R^2	0.2650	0.2625	0.0656	0.1735	0.0258	0.0290	0.1385
$F-statistic$	2,184	2,184	18,060	19,142	18,373	18,373	19,063
Observations	6,061,153	6,061,153	2,951,707	4,335,198	4,472,023	4,472,023	4,307,594
Households	904,335	904,335	446,018	669,472	663,177	663,177	655,825

Notes: Standard errors are clustered at the municipality level and are within parentheses. Each entry is a separate regression. In the IV model, the fall-back wage ratio is instrumented using the prevailing local wage ratio. The direct equity share is defined as the value of stocks divided by total financial wealth. The risky share is defined as stocks, equity funds, hedge funds and mixed funds divided by total financial wealth. Direct equity (risky) participation is equal to one for those whose direct equity (risky) share is positive and zero otherwise. Total risk is defined as the volatility of the risky part of the portfolio, measured as the annualized standard deviation of the return of the risky part of the portfolio. Idiosyncratic risk is the part of total risk that does not stem from systematic market movements. SD effect* refers to the effect on the outcome of interest from a 1 sd increase in the bargaining power ratio of couples, measured in sd of the outcome variable. For singles, it refers to the effect on the outcome of interest of being female or being an economist.

Table 6: Impact of the female's decision power on household financial portfolios when both spouses are economists

	(1) Direct Equity Participation	(2) Risky Participation	(3) Direct Equity Share	(4) Risky Share	(5) Idiosyncratic Risk	(6) Total Risk	(7) Return Loss
Panel A: Single economists							
Female dummy	-0.1109	0.0009	-0.0915	-0.0468	-0.0509	-0.0697	-0.0011
	(0.0044)	(0.0036)	(0.0024)	(0.0017)	(0.0009)	(0.0010)	(0.0000)
Compared to male mean	-30.2%	0.2%	-27.5%	-9.9%	-26.0%	-22.3%	-29.8%
R^2	0.2388	0.2545	0.0512	0.0880	0.0849	0.0891	0.1116
Observations	1,435,606	1,435,606	481,744	829,473	865,696	865,696	821,198
Individuals	207,956	207,956	74,350	125,952	128,659	128,659	124,977
Panel B: Couples							
DP - OLS	0.0338	0.0390	-0.0310	0.0020	-0.0220	-0.0273	-0.0003
	(0.0185)	(0.0137)	(0.0123)	(0.0132)	(0.0054)	(0.0078)	(0.0001)
R^2	0.2249	0.1746	0.0958	0.1412	0.0290	0.0342	0.1365
DP - IV	-0.0080	-0.0134	-0.0597	-0.0304	-0.0112	-0.0117	-0.0005
	(0.0658)	(0.0470)	(0.0553)	(0.0469)	(0.0165)	(0.0238)	(0.0004)
SD effect*	0.00	0.00	-0.04	-0.02	-0.02	-0.01	-0.03
R^2	0.2248	0.1743	0.0957	0.1411	0.0289	0.0340	0.1365
$Fstatistic$	892	892	618	697	728	728	699
Observations	107,254	107,254	74,447	92,491	93,215	93,215	91,882
Households	16,048	16,048	10,908	13,662	13,858	13,858	13,582

Notes: Standard errors are clustered at the municipality level and are within parentheses. Each entry is a separate regression. In the IV model, the fall-back wage ratio is instrumented using the prevailing local wage ratio. The direct equity share is defined as the value of stocks divided by total financial wealth. The risky share is defined as stocks, equity funds, hedge funds and mixed funds divided by total financial wealth. Direct equity (risky) participation is equal to one for those whose direct equity (risky) share is positive and zero otherwise. Total risk is defined as the volatility of the risky part of the portfolio, measured as the annualized standard deviation of the return of the risky part of the portfolio. Idiosyncratic risk is the part of total risk that does not stem from systematic market movements. SD effect* refers to the effect on the outcome of interest from a 1 sd increase in the bargaining power ratio of couples, measured in sd of the outcome variable.

Table A.1: Aggregate Wealth Statistics 2000-2003 (in billions of U.S. dollars)

	2000		2001		2002		2003	
	Micro Data (1)	Official Statistics (2)	Micro Data (3)	Official Statistics (4)	Micro Data (5)	Official Statistics (6)	Micro Data (7)	Official Statistics (8)
Financial assets:								
Bank accounts	44.6	42.2	44.0	41.6	51.6	49.1	69.9	66.5
Mutual funds	57.3	55.5	47.0	43.5	43.8	39.0	58.4	60.8
Stocks	57.3	55.7	42.0	40.9	32.9	31.8	50.8	47.6
Bonds and derivatives	8.2	9.2	6.9	7.6	8.4	9.3	10.0	11.0
Taxable insurance	16.6	16.3	14.1	13.9	13.3	13.3	17.1	17.0
Real estate:								
Residential	228.2	223.0	216.0	211.3	280.4	275.1	362.4	352.8
Non-residential	81.6	79.2	76.9	74.6	101.3	98.4	127.8	123.1
Total real estate	309.8	302.2	292.8	285.9	381.8	373.5	490.2	475.9
Total gross wealth	518.0	498.4	465.2	449.0	546.1	528.6	716.4	691.8
Total wealth	394.4	360.7	354.0	319.0	412.1	366.8	554.3	477.4
Households:								
Observations	4,817,135	4,817,135	4,843,010	4,843,010	4,869,448	4,869,448	4,893,661	4,893,661
Gross wealth	$107,538	$103,461	$96,062	$92,704	$112,141	$108,553	$146,400	141,364
Net wealth	$81,874	$74,875	$73,100	$65,877	$84,632	$75,322	$113,272	$97,546

Note: The table reports the aggregate wealth statistics for Swedish households on December 31 of the years 2000, 2001, 2002 and 2003. We convert all financial variables into billions of U.S. dollars using the exchange rate at the end of each year (2000: 1 SEK = $ 0.1060, 2001: 1 SEK = $ 0.0953, 2002: 1 SEK = $ 0.1148, 2003: 1 SEK = $ 0.1390). In columns 1, 3, 5 and 7, we aggregate the value of the asset holdings observed for all individuals in our micro dataset. Columns 2, 4, 6 and 8 report the corresponding official statistics published by Statistics Sweden.

Table A.2: Aggregate Wealth Statistics 2004-2006 (in billions of U.S. dollars)

	2004		2005		2006	
	Micro Data (1)	Official Statistics (2)	Micro Data (3)	Official Statistics (4)	Micro Data (5)	Official Statistics (6)
Financial assets:						
Bank accounts	67.6	64.2	58.5	55.7	106.1	101.0
Mutual funds	68.5	66.4	71.8	68.9	89.5	86.3
Stocks	66.3	62.2	71.2	66.7	97.8	90.4
Bonds and derivatives	12.5	12.2	12.2	12.0	16.6	14.8
Taxable insurance	18.7	18.6	15.4	15.4	17.6	17.9
Real estate:						
Residential	437.9	441.7	423.3	413.3	546.9	535.6
Non-residential	153.0	147.3	148.7	143.6	189.1	183.3
Total real estate	590.9	589.0	572.0	556.9	736.0	718.9
Total gross wealth	844.7	827.2	816.6	788.4	1,082.8	1,043.6
Total wealth	669.2	572.6	670.1	553.5	912.4	745.6
Households:						
Observations	4,915,190	4,915,190	4,945,947	4,945,947	4,989,488	4,989,488
Gross wealth	$171,859	$168,293	$165,113	$159,398	$217,019	$209,168
Net wealth	$136,146	$116,496	$135,479	$111,915	$182,855	$149,444

Note: The table reports the aggregate wealth statistics for Swedish households on December 31 of the years 2004, 2005 and 2006. We convert all financial variables into billions of U.S. dollars using the exchange rate at the end of each year (2004: 1 SEK = $ 0.1505, 2005: 1 SEK = $ 0.1257, 2006: 1 SEK = $ 0.1461. In columns 1, 3 and 5, we aggregate the value of the asset holdings observed for all individuals in our micro dataset. Columns 2, 4 and 6 report the corresponding official statistics published by Statistics Sweden.

Table A.3: Descriptives - Income

	(1)	(2)	(3)	(4)	(5)	(6)
	M > F	M > 0.7(M+F)	F > 0.7(M+F)	M > F	M > 0.7(M+F)	F > 0.7(M+F)
2000	68.3%	31.0%	14.4%	67.9%	12.0%	4.7%
2001	68.1%	30.9%	14.3%	67.7%	11.9%	4.6%
2002	67.7%	30.7%	14.5%	67.2%	11.3%	4.5%
2003	67.2%	30.6%	14.7%	66.8%	11.3%	4.5%
2004	66.8%	30.6%	14.7%	66.2%	11.5%	4.7%
2005	66.9%	30.9%	14.4%	66.5%	12.0%	4.5%
2006	66.9%	30.5%	14.1%	66.2%	11.8%	4.6%

(1)-(3): income, (4)-(6): fall-back income.

Table A.4: Descriptives - age and education

	(1)	(2)	(3)	(4)
	M age > F age + 5	F age > M age + 5	M edu > F edu	F edu > M edu
2000	17.5%	2.1%	22.7%	31.0%
2001	17.5%	2.2%	22.4%	31.2%
2002	17.5%	2.2%	22.2%	31.3%
2003	17.6%	2.2%	21.9%	31.6%
2004	17.7%	2.3%	21.7%	31.8%
2005	17.9%	2.3%	21.5%	31.8%
2006	18.1%	2.4%	21.2%	32.0%

(1) shows the proportion of couples in which the male is more than five years older, (2) shows the proportion of couples in which the female is more than five years older, (3) shows the proportion of couples in which the male has a higher level of education than the female and (4) shows the proportion of couples in which the female has a higher level of education than the male.

Table A.5: Comparison of IV measures of the female/male wage ratio and the actual ratio

	2000	2001	2002	2003	2004	2005	2006
IV	0.4662	0.4668	0.4703	0.4705	0.4715	0.4711	0.4714
Actual	0.4127	0.4136	0.4153	0.4162	0.4163	0.4139	0.4139

Actual earnings ratios are conditional on both spouses being employed.

Table A.6: The relationship between the decision power of female spouses and the share of the prevailing wage of female spouses in the total prevailing wage of couples (first stage)

Dependent variable: Decision power of female spouses

	(1) Direct Equity Participation	(2) Risky Participation	(3) Direct Equity Share	(4) Risky Share	(5) Idiosyncratic Risk	(6) Total Risk	(7) Return Loss
WR	0.7242	0.7242	0.8416	0.8199	0.8158	0.8158	0.8203
	(0.0002)	(0.0002)	(0.0003)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
lnWealth	-0.0012	-0.0012	-0.0036	-0.0034	-0.0034	-0.0034	-0.0035
	(0.0000)	(0.0000)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
#children < 3	-0.0042	-0.0042	-0.0016	-0.0011	-0.0013	-0.0013	-0.0011
	(0.0002)	(0.0002)	(0.0003)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
#children 4-10	-0.0015	-0.0015	-0.0014	-0.0012	-0.0013	-0.0013	-0.0012
	(0.0001)	(0.0001)	(0.0002)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
#children 11-17	-0.0062	-0.0062	-0.0066	-0.0066	-0.0066	-0.0066	-0.0066
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
lnDebt of female partner	0.0026	0.0026	0.0010	0.0011	0.0012	0.0012	0.0011
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
lnDebt of male partner	-0.0025	-0.0025	-0.0016	-0.0017	-0.0018	-0.0018	-0.0017
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Male age	0.0008	0.0008	0.0024	0.0021	0.0020	0.0020	0.0021
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Female age	0.0014	0.0014	0.0000	0.0003	0.0003	0.0003	0.0003
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Length of marriage	0.0020	0.0020	-0.0011	-0.0009	-0.0009	-0.0009	-0.0010
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
#marriages of male partner	-0.0173	-0.0173	-0.0148	-0.0138	-0.0136	-0.0136	-0.0137
	(0.0003)	(0.0003)	(0.0005)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
#marriages of female partner	0.0126	0.0126	0.0055	0.0057	0.0059	0.0059	0.0056
	(0.0003)	(0.0003)	(0.0004)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
R^2	0.1411	0.1411	0.1704	0.1663	0.1651	0.1651	0.1664
$Partial R^2$	0.1021	0.1021	0.1371	0.1330	0.1319	0.1319	0.1332
$F statistic$ 2,284	2,284	19,803	20,505	19,595	19,595	20,397	
Observations	6,061,153	6,061,153	2,951,707	4,335,198	4,472,023	4,472,023	4,307,594
Households	904,335	904,335	446,018	669,472	663,177	663,177	655,825

Table A.7: The Impact of the female's decision power on migration

	Moves between counties (IV)	Moves between counties (OLS)
Couples		
DP	-0.0012	-0.0009
	(0.0034)	(0.0027)
R^2	0.7239	0.7238
Observations	6,061,153	6,061,153
Households	904,335	904,335

Notes: Standard errors are clustered at the municipality level and are within parentheses. Each entry is a separate regression. In the IV model, the fall-back wage ratio is instrumented using the prevailing local wage ratio.

Table A.8: Impact of the female's decision power on household financial portfolios - Industry Controls

	(1) Direct Equity Participation	(2) Risky Participation	(3) Direct Equity Share	(4) Risky Share	(5) Idiosyncratic Risk	(6) Total Risk	(7) Return Loss
BP							
DP - OLS	-0.0120	0.0471	-0.0510	-0.0185	-0.0204	-0.0267	-0.0004
	(0.0042)	(0.0044)	(0.0020)	(0.0020)	(0.0013)	(0.0017)	(0.0000)
R^2	0.2744	0.2836	0.0767	0.1775	0.0431	0.0447	0.1466
DP - IV	0.0270	0.1936	-0.0740	-0.0209	-0.0343	-0.0449	-0.0007
	(0.0123)	(0.0138)	(0.0075)	(0.0068)	(0.0025)	(0.0034)	(0.0001)
SD*	0.01	0.07	-0.05	-0.01	-0.05	-0.05	-0.04
R^2	0.2742	0.2816	0.0765	0.1775	0.0427	0.0443	0.1462
Fstatistic	2,036	2,036	17,809	18,909	18,211	18,211	18,732
Observations	6,061,153	6,061,153	2,951,707	4,335,198	4,472,023	4,472,023	4,307,594
Households	904,335	904,335	446,018	669,472	663,177	663,177	655,825

Notes: Standard errors are clustered at the municipality level and are within parentheses. Each entry is a separate regression. In the IV model, the fall-back wage ratio is instrumented using the prevailing local wage ratio. The direct equity share is defined as the value of stocks divided by total financial wealth. The risky share is defined as stocks, equity funds, hedge funds and mixed funds divided by total financial wealth. Direct equity (risky) participation is equal to one for those whose direct equity (risky) share is positive and zero otherwise. Total risk is defined as the volatility of the risky part of the portfolio, measured as the annualized standard deviation of the return of the risky part of the portfolio. Idiosyncratic risk is the part of total risk that does not stem from systematic market movements. SD effect* refers to the effect on the outcome of interest from a 1 sd increase in the bargaining power ratio of couples, measured in sd of the outcome variable.

Table A.9: Impact of the female's decision power on household financial portfolios - alternative specification

	(1) Direct Equity Participation	(2) Risky Participation	(3) Direct Equity Share	(4) Risky Share	(5) Idiosyncratic Risk	(6) Total Risk	(7) Return Loss
DP measured as linear difference							
DP - OLS	-0.0104	-0.0008	-0.0084	-0.0056	-0.0037	-0.0050	-0.0001
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
R^2	0.2642	0.2645	0.0653	0.1736	0.0266	0.0296	0.1389
DP - IV	-0.0100	0.0163	-0.0147	-0.0091	-0.0067	-0.0091	-0.0001
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
SD*	-0.03	0.06	-0.09	-0.05	-0.09	-0.09	-0.08
$Fstatistic$	3,460	3,460	2,225	2,457	2,593	2,593	2,454
Observations	6,064,999	6,064,999	2,952,472	4,336,357	4,473,272	4,473,272	4,308,737
Households	904,847	904,847	446,117	669,641	663,344	663,344	655,989

Notes: The coefficients have been multiplied by 100,000. Standard errors are clustered at the municipality level and are within parentheses. Each entry is a separate regression. In the IV model, the fall-back wage ratio is instrumented using the prevailing local wage ratio. The direct equity share is defined as the value of stocks divided by total financial wealth. The risky share is defined as stocks, equity funds, hedge funds and mixed funds divided by total financial wealth. Direct equity (risky) participation is equal to one for those whose direct equity (risky) share is positive and zero otherwise. Total risk is defined as the volatility of the risky part of the portfolio, measured as the annualized standard deviation of the return of the risky part of the portfolio. Idiosyncratic risk is the part of total risk that does not stem from systematic market movements. SD effect* refers to the effect on the outcome of interest from a 1 sd increase in the bargaining power ratio of couples, measured in sd of the outcome variable.

Table A.10: Impact of the female's decision power on household financial portfolios - alternative instruments

	(1) Direct Equity Participation	(2) Risky Participation	(3) Direct Equity Share	(4) Risky Share	(5) Idiosyncratic Risk	(6) Total Risk	(7) Return Loss
Panel A: EMPLOYMENT IV							
DP	0.0357	0.5124	-0.2358	-0.0807	-0.1123	-0.1440	-0.0022
	(0.0161)	(0.0287)	(0.0184)	(0.0087)	(0.0089)	(0.0116)	(0.0002)
SD*	0.01	0.18	-0.16	-0.05	-0.18	-0.16	-0.13
Fstatistic	3,964	3,964	6,279	6,948	7,009	7,009	6,939
Panel B: INDUSTRY IV							
DP	-0.2048	0.0836	-0.1996	-0.1783	-0.0765	-0.1098	-0.0021
	(0.0206)	(0.0243)	(0.0092)	(0.0090)	(0.0032)	(0.0044)	(0.0001)
SD*	-0.07	0.03	-0.14	-0.11	-0.12	-0.12	-0.13
Fstatistic	3,446	3,446	11,691	13,161	13,749	13,749	13,044
Observations	6,061,153	6,061,153	2,951,707	4,335,198	4,472,023	4,472,023	4,307,594
Households	904,335	904,335	446,018	669,472	663,177	663,177	655,825

Notes: Standard errors are clustered at the municipality level and are within parentheses. Each entry is a separate regression. In panel A, we instrument the fall-back wage ratio using countrywide growth in employment by industry weighted by the county-specific shares in these industries. In panel B, we instrument the fall-back wage ratio using countrywide growth in the male/female share weighted by the county-specific wages in these industries. The direct equity share is defined as the value of stocks divided by total financial wealth. The risky share is defined as stocks, equity funds, hedge funds and mixed funds divided by total financial wealth. Direct equity (risky) participation is equal to one for those whose direct equity (risky) share is positive and zero otherwise. Total risk is defined as the volatility of the risky part of the portfolio, measured as the annualized standard deviation of the return of the risky part of the portfolio. Idiosyncratic risk is the part of total risk that does not stem from systematic market movements.
SD effect* refers to the effect on the outcome of interest from a 1 sd increase in the bargaining power ratio of couples, measured in sd of the outcome variable.

Table A.11: Impact of changes in female's decision power over 5 years on household financial portfolios

	(1) Direct Equity Participation	(2) Risky Participation	(3) Direct Equity Share	(4) Risky Share	(5) Idiosyncratic Risk	(6) Total Risk	(7) Return Loss
BP							
DP - OLS	-0.0115	0.0750	-0.0712	-0.0198	-0.0274	-0.0336	-0.0007
	(0.0054)	(0.0051)	(0.0028)	(0.0028)	(0.0019)	(0.0024)	(0.0000)
R^2	0.2772	0.2727	0.0733	0.2274	0.0290	0.0196	0.1609
DP - IV	-0.0143	0.2365	-0.1308	-0.0302	-0.0588	-0.0735	-0.0013
	(0.0148)	(0.0151)	(0.0096)	(0.0082)	(0.0028)	(0.0036)	(0.0001)
SD*	0.00	0.08	-0.09	-0.02	-0.09	-0.08	-0.08
R^2	0.2772	0.2702	0.0722	0.2274	0.0270	0.0177	0.1602
$Fstatistic$	2,379	2,379	18,381	19,329	18,681	18,681	19,092
Observations	1,747,823	1,747,823	840,522	1,255,422	1,280,543	1,280,543	1,239,728
Households	904,335	904,335	446,018	669,472	663,177	663,177	655,825

Notes: Standard errors are clustered at the municipality level and are within parentheses. Each entry is a separate regression. In the IV model, the fall-back wage ratio is instrumented using the prevailing local wage ratio. The direct equity share is defined as the value of stocks divided by total financial wealth. The risky share is defined as stocks, equity funds, hedge funds and mixed funds divided by total financial wealth. Direct equity (risky) participation is equal to one for those whose direct equity (risky) share is positive and zero otherwise. Total risk is defined as the volatility of the risky part of the portfolio, measured as the annualized standard deviation of the return of the risky part of the portfolio. Idiosyncratic risk is the part of total risk that does not stem from systematic market movements. SD effect* refers to the effect on the outcome of interest from a 1 sd increase in the bargaining power ratio of couples, measured in sd of the outcome variable.

Table A.12: Return loss decomposition

	Return Loss	Risky Share	Beta	Relative SR Loss
Panel B: Singles				
Female dummy	-0.1699	0.0202	-0.1171	-0.0730
	(0.0065)	(0.0039)	(0.0016)	(0.0019)
SD effect*	-0.17	-13%	69%	43%
Observations	7,672,612	7,672,612	7,672,612	7,672,612
Panel B: Couples				
DP - IV	-0.3578	0.0161	-0.1925	-0.1814
	(0.2111)	(0.1588)	(0.0371)	(0.0543)
SD effect*	-0.08	-5%	54%	51%
Observations	4,408,150	4,408,150	4,408,150	4,408,150

Notes: Standard errors are clustered at the municipality level and are within parentheses. Each entry is a separate regression. We instrument the fall-back wage ratio using countrywide growth in employment by industry weighted by the county-specific shares in these industries. SD effect* refers to the effect on the outcome of interest from a 1 sd increase in the bargaining power ratio of couples, measured in sd of the outcome variable.

Table A.13: The impact of a divorce on the financial portfolios of males and females

	Direct Equity Share	Risky Share
Panel A: Females		
after × T	-0.0170	-0.0327
	(0.0034)	(0.0029)
R^2	0.0208	0.0838
Observations	1,624,596	3,369,375
Panel B: Males		
after × T	0.0105	0.0031
	(0.0037)	(0.0031)
R^2	0.0227	0.0776
Observations	2,371,756	3,555,715

Notes: Standard errors are clustered at the municipality level and are within parentheses. Each entry is a separate regression.