Peer Effects, Personal Characteristics and Asset Allocation

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Abstract

We study the relative importance of personal characteristics; household, workplace, and neighborhood peer effects; and financial advice for asset allocation decisions. We use a unique database of over 40,000 individual accounts of representative investors. Household peer effects explain most of the variation in asset allocation decisions (15.5%), followed by personal characteristics (9.7%). Workplace peer effects, neighborhood effects, and financial advice also influence asset allocation choice, but to a lesser extent. All external effects combined explain twice the variation of personal characteristics alone in asset allocation choices.

Keywords: Asset allocations, behavioral finance, individual investors, mutual funds, household finance, personal characteristics, neighborhood, financial advice, peer effects.

JEL Classification: G02, G11, D12, D14

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We use a large and unique proprietary database to investigate the relative importance of factors that determine the asset allocation choices and fund switching decisions of individual investors. This database has information on which mutual funds investors hold, their personal characteristics, the households and neighborhoods they live in, the places they work, and whether or not they have received financial advice. We also have information on when investors switch funds. The database consists of over 40,000 individual investor accounts of investors living in 28,000 households in 450 different neighborhoods and working in 14,000 unique companies. Of these investors, almost 7,000 received financial advice. Since we know the asset allocations of the mutual funds in which these participants invest, this allows for a comprehensive study of the personal and environmental factors reported in the literature as being important in asset allocation decisions. We can also compare the importance of these factors relative to each other.

There is a vast literature that suggests personal characteristics and financial advice are important in financial decision making. There is also a growing literature on the possibility that neighbors and co-workers play a role, particularly with respect to stock market participation. However, to the best of our knowledge, no study considers all factors jointly or allows for the peer effects of investors who live in a same household in focusing on asset allocation decisions.[1] This, as Campbell (2006) points out, is likely due to the difficulty of obtaining data. Our data come from four large KiwiSaver providers in New Zealand. KiwiSaver is a voluntary, work-based savings initiative of the New Zealand government. Begun in 2007, KiwiSaver is a defined contribution pension scheme similar to the U.S. 401(k) scheme. In total, these four

[1] In this study we apply the term *peer effects* in the general sense of the word. We interpret *peer effects* to mean the effect that people may have on others with whom they are close to or closely connected to. We treat co-workers and people who live in the same household or neighborhood as peers. We are not strict in the sense of limiting the definition of *peer effects* to be the influence of a person of the same age, status, or ability as another.

providers hold one-quarter of the market share of the KiwiSaver fund market as measured by funds under management in a large number of different mutual funds.

We find that all factors are important in asset allocation decisions, but some factors are more so than others. Peer effects in households (people living at the same physical address, who may be family members or friends) dominate asset allocation decisions. When comparing investment fund choices between peer groups, we find that almost two-thirds (64%) of people hold the exact same investment fund—and therefore identical asset allocation—as the people they live within the same household, compared to a maximum of 25% of investors holding the same mutual fund in our overall sample. So, people in the same household are at least 2.5 times more likely to hold the same fund as others in their household. This household peer effect explains around 15% of the variation of asset allocation choices. This may be partially caused by what one might consider the ultimate peer effect, where one household member makes investment decisions for others.[2]

This household peer effect seems strong and may even be a greater influence on choice than an investor's personal characteristics. The personal characteristics we can identify explain 10% of total variation in asset allocation choices. Personal characteristics and household peer effects combined are the two most important sets of factors. However, the asset allocation decisions of individual investors are also positively related to those asset allocation choices of their co-workers (people employed by the same company). One-third (34%) of people hold the same investment funds as their co-workers do (which is also more than the maximum of 25%). So, people in the same company are at least 1.4 times more likely to hold the same fund as others in their workplace. These co-worker effects alone explain 5.1% of the variation in individual asset allocation choices.

[2] This result also confirms other findings on household peer effects.

Combining workplace, household, and personal effects substantially improves the explanatory power of models for asset allocation choices. Combined, these effects explain 25% of the variation in the asset allocation choices of individuals. After we take household and workplace peer effects into account, we still find that neighborhood peer effects play a role, although they are relatively marginal compared to other environmental factors. People in the same postal code area tend to invest similarly (even if we control for the fact that these people may have similar personal characteristics). Our results also confirm that investors who have received financial advice tend to hold significantly larger positions in equity. However, the contribution to the R^2 of these two factors combined seems relatively marginal, since the explained variation only increases by 1.8%, to 26.8%, if we add these factors to the other effects.

Our results suggest that omitting peer effects or personal characteristics when investigating asset allocation leads to an omitted variable problem and can thus bias estimates. The explained variation of all peer effects combined is 19.8%, versus 9.7% for personal characteristics. However, our study confirms most of the signs and magnitudes of factors in many previous studies focusing on subsets of these factors.[3] This result suggests that this bias may not be too severe, although our results indicate that not controlling for personal characteristics when looking at household effects can cause a serious omitted variable bias.

In robustness tests, we find similar results for the mean squared errors in so-called "hold out" tests (where we predict a random subset of 20% of the sample based on the other 80%). If anything, these tests suggest that personal characteristics matter even less compared to the peer effects we consider. Wald tests confirm most of our results, with the exception of the neighborhood tests: a joint Wald test on all neighborhood factors finds no added value.

[3] Barber and Odean (2001), Agnew, Balduzzi and Sunden (2003), Bodie (2003), Hong, Kubick, and Stein (2004), and Brown et al. (2008).

Switching behavior seems to confirm further the importance of household and workplace peer effects. Investors are likely to switch funds if peers switch funds. On average, investors switch funds only 1% of the time. The probability of an investor switching funds if a household or workplace peer switches within the previous six-month period is 10% or 2.1%, respectively, if we look at switches within the same six-month period. While fund switching by both household members and co-workers increases the likelihood of individuals switching funds, fund switches by household members occur two to three times more often.

This study contributes to the literature in several ways. As we noted earlier, it is the first to include a comprehensive list of personal and environmental factors (and specifically household peer effects) jointly, which allows us to study the relative importance of these factors in relation to each other. In addition, our study focuses on investors who are representative of the total population and we look at the asset allocation implicit in their mutual fund selection. Most other peer effect studies tend to focus on stock market participation or stock market trading. Our study indicates that peer effects are important not only in active investing (Heimer, 2014) but also in passive investment decisions. Moreover, we can are able follow investors over time and look at the changes they make, which allows us to verify some of our findings on peer effects for their asset allocations holdings. If we combine these features, our study fills an important gap, since it fulfills many of the criteria of an ideal dataset to study household finance, as put forward in Campbell's (2006) presidential address. Furthermore, our study is the first to add financial advice to the mix.

Our database allows us, to a large extent, to merge three different strands of the literature, relating to personal characteristics, peer effects, and financial advice. The impact of personal characteristics on financial decisions has been studied by many papers. There are also a number of papers on peer effects, the main difference with our study being that these studies only consider subsets of all the factors we combine here.

There is considerable evidence that a number of personal characteristics affect asset allocation decisions. Ackert, Church, and Englis (2002) find age influences investors' choice of risky assets. There are several possible reasons for this. First, Cocco (2005) suggests investment in housing by younger investors results in limited ability to invest in stocks. Second, as individuals reach retirement age, they likely look to reduce risk by decreasing the stock–bond ratio. Gender is another important determinant. Women appear to take a more conservative approach to investing. As Jacobsen, Lee, Marquering and Zhang (2014) show, based on international data, this can be due to either women being more risk averse or less optimistic or their perceiving stock markets as being riskier than men do. While, as Barber and Odean (2001) document, less overconfidence can have such benefits as reducing wealth destruction due to excessive portfolio turnover, high risk aversion can also have disadvantages, such as lower allocation to stocks and less benefit from the equity premium, as highlighted by Sunden and Surette (1998). Love (2010) finds that changes in family status also affect asset allocation. For instance, divorce leads women to move to safer asset allocations and men to move to riskier allocations. Agnew and Szykman (2005) show financial literacy is related to education and income and these factors influence asset allocation. Finally, Barnea, Cronqvist, and Siegel (2010) use Swedish data on identical and fraternal twins to prove that genetics play an important role in asset allocation. Our study differs because we also include peer effects in our analysis.

There is a growing literature on peer effects. Hong, Kubik, and Stein (2004) find that more social households that interact more with their neighbors or attend church are more likely to participate in the stock market. Brown, Ivković, Smith and Weisbenner (2008) show, based on zip codes, a causal relation between stock ownership and the average stock market participation of an individual's community. Heimer (2014) finds that social interaction is more prevalent among active rather than passive investors. Ng and Wu (2012) find that Chinese

investors at the same branch of a brokerage firm tend to make similar trading decisions. Kaustia and Knüpfer (2012) look at Finnish data and add that this effect might be caused by peer performance rather than valuable information exchange. Whether peer effects exist in the workplace is less clear. Hvide and Östberg (2013) show that the stock market investment decisions of Norwegian investors are positively correlated with those of their co-workers.[4] Little is known about household peer effects and asset allocation decisions, although earlier research suggests its importance. For instance, Barber and Odean (2001) show that the largest differences in trading behavior are between single men and single women rather than between married men and married women. More closely related to our study, a survey by Gilbert, Hyde, Tourani-rad and Le (2013) finds that 42% of KiwiSaver investors at a New Zealand university were the primary financial decision maker, 46% shared the responsibility, and 7% abdicated the responsibility (i.e. to a financial advisor). This gives some indication of the number of people who might be making decisions for the entire household, compared with otherwise. Our results show that these household peer effects are important even when compared to personal characteristics. Lu (2011) finds that 401(k) plans are influenced by those of co-workers, but Beshears, Choi, Laibson, Madrian and Milkman (2011) show that providing coworkers' savings information decreases savings in 401(k) plan enrolment. Our study differs from these studies because we focus on the relative importance of many different peer effects and personal characteristics. Additionally, as mentioned before, we consider the asset allocation decisions of individuals rather than stock market participation or stock market trading.

Further, there is a growing literature that examines the role of financial advice in investor behavior. Using the same database of New Zealand investors, Zhang (2014) finds female investors, relatively older investors, and investors with more funds under management

[4] They include family members as a control variable but include not only household members (spouses and children), but also parents, grandparents, grandchildren, siblings, uncles, aunts cousins, nieces, and nephews not living in the same household.

are more likely to receive financial advice. The difference between the samples is that Zhang uses a KiwiSaver sample of 400,000 investors, while we use a smaller subset of that sample (40,000), with peer group information as well as financial advice information. In addition, Zhang finds that investors who receive advice hold riskier assets than non-advised investors do and that the differences in portfolio performance between advised and non-advised investors are marginal. These findings support the results of Mullainathan, Nöth, and Schoar (2012), who conduct an audit study of the market for advice in the greater Cambridge and Boston area in the United States and find that asset allocation is positively related to equity exposure. In contrast, however, using a database from the Netherlands, Kramer (2012) finds that advised portfolios contain significantly less equity. Meanwhile, the effect of financial advice on performance is also mixed. Bergstresser, Chalmers, and Tufano (2009) and Hackethal, Haliassos, and Jappelli (2012), using data from a German brokerage firm, find that the returns of advised portfolios are lower than those of unadvised accounts, mainly due to higher trading costs. However, Bhattacharya, Hackethal, Kaesler, Loos, and Meyer (2012), also using German brokerage firm data, find that taking advice is associated with an improvement in portfolio performance, but only a fraction of investors are willing to accept and follow advice.

I. Data

To study the asset allocation of individual investors, we obtain data from four large KiwiSaver providers in New Zealand. In total, they hold one-quarter of the market share of the KiwiSaver fund under management market share. The data contain personal, demographic, geographic, and employment information. KiwiSaver is a voluntary, work-based savings initiative of the New Zealand government. Started in 2007, KiwiSaver is a defined contribution pension scheme similar to the U.S. 401(k) scheme. In total, 13 investment funds are available

for investors to choose from within each fund family.[5] The data are cross-sectional and report information as of June 30, 2011, with the exception of fund switches, whose switching dates we can observe. Information on fund switching is available if investors made changes to their asset allocation or switched investment funds between July 1, 2007 (the commencement date of KiwiSaver), and June 30, 2011. The variables we use are individual investor age, gender, funds under management, tax rate, investment fund choice, the asset allocation of funds, the name and location of the company where the investor works, the household residence, neighborhood information, information on whether the investor received financial advice, the investor's enrolment method into KiwiSaver, and whether the investor switched investment funds (made asset allocation changes). We try to use the same/similar variables as are commonly adopted in the literature to proxy for an investor's personal characteristics, for instance, age, gender, and wealth. We do not have a direct measure of wealth, so we use the log of funds under management invested by the investor as our proxy. We use tax rate as a proxy for investor income and default enrolment as our measure of the level of investor inertia (Madrian & Shea, 2001). A socioeconomic variable that we cannot directly control for is the level of education. Here, we rely on the unobserved correlation between education and other investor demographic characteristics, such as age, gender, wealth, and tax rate, to indirectly account for education. Strong evidence in the economics literature suggests education and earnings are highly correlated (e.g., Kennickell & Sunden, 1997; Qian, 1998; Jianakolpos & Bajtelsmit, 2002). Massa and Simonov (2011), who investigate whether college is a focal point of an investor's life, adopt a similar approach by building additional education controls in their study, using parental income and geographic and gender distribution. Further, since we also have information on the personal characteristics of household, workplace, and neighborhood

[5] The funds are cash, conservative, conservative–balanced, balanced, balanced–growth, growth, domestic (Australasian) bonds, international bonds, domestic property, international property, domestic equity, international equity, and socially responsible.

peer group members, we can construct measures of peer group control to account for potential differences in average peer effects across demographic groups.

We form household peer groups by matching identical residential street addresses and co-worker peer groups by matching company names and locations. We also generate neighborhoods by grouping individuals by their postal code. To identify the exact geographic locations where people live, we match individuals together using information on their unit number, house number, street, suburb, city, and postal code. We remove all post office box (PO Box) addresses from our sample due to the difficulty of determining whether people with the same PO Box reside in the same physical household. Co-workers consist of groups of two persons or more working in the same company in the same office. Similar to earlier studies that observe peer effects between co-workers, we may potentially underestimate the true peer effects because co-workers may have never met. As a safety measure, we also match postal codes against company codes to verify that the geographic location we identify is where an individual works, since some companies operate under the same name but in multiple locations. Please note we use the word *company* as a blanket term to cover a multitude of business enterprises and structures that may exist in the workplace.

The composition of households and companies sizes in our sample is representative of New Zealand households and companies, respectively. Table I shows the distribution of household and company sizes contained in the sample. Of the 28,380 households contained in the final sample, 66% of individuals live in a house with two people. This result is in line with the census showing "households containing just one or two usual residents made up over half of New Zealand households, at 56.6%" (New Zealand, 2002, p15). Of the 14,392 companies in the sample, 94% of all individuals work in a firm with two to 25 co-workers. The distribution of company sizes in our sample is in line with the average firm size of New Zealand companies. Mills and Timmins (2004) show 91% of firms in New Zealand have fewer than 20 employees.

It is also worth noting that the size and distribution of enterprises in New Zealand are analogous to those in a number of other Organization for Economic Co-operation and Development (OECD) countries. As such, this result may provide ways to assess the comparability of findings from studies undertaken in different countries and also help contextualize the results presented in this paper. For example, the proportion of small firms (with fewer than 20 employees) in New Zealand is similar to that in Denmark, Finland, Germany, and Italy. The proportion of people employed in firms with fewer than 20 employees is also close to that in Australia, Denmark, Finland, the Netherlands, and Portugal (Mills & Timmins, 2004, p.9-10).

[Insert Table I]

We draw 42,187 investors from a pool of 405,107 KiwiSaver accounts to compose our dataset. We remove individuals belonging to households and companies with fewer than two persons because peer groups cannot be established. Single-person households and companies, however, are still reported in later sections for comparative purposes.[6] In total our samples contains 14,392 unique companies, 28,380 households, and 462 neighborhoods.[7] We create a number of new variables to capture potential household and company effects that may influence investor asset allocation. If birds of a feather do indeed flock together then it would be interesting to see the relation between individual asset choice and the demographic effects of people in their peer group. For instance, if an investor has older co-workers or co-workers with relatively high sums invested in their account compared to the investor's, how might this

[6] Single-person households, on average, hold more cash and bonds and less property and equity than multi-person households do and hold relatively more in equity, property, and cash assets and less in bond than multi-person companies do. On average, single-person households hold a conservative–balanced fund, while multi-person households tend to hold a balanced fund, which is riskier. Single-person companies, on average, hold a balanced fund and companies with two or more individuals, on average, hold conservative–balanced funds, which are less risky. See the descriptive statistics in Appendix A.

[7] The reduction in sample size results from having to remove observations that do not contain information on both household *and* company information. The membership in KiwiSaver of households and of employed members is in line with KiwiSaver individual investor surveys (Colmar Brunton, 2010). The survey reports that it is more common in households with couples for just one partner to be a KiwiSaver member than it is for both partners to be KiwiSaver members (19% compared to 13%, respectively).

impact the investor's personal investment choice(s)? The household, company, and neighborhood variables we use are average age, the proportion of females, average funds under management, the average tax rate, household size, company size, the number of neighbors, and, most importantly, the average asset allocations of household members, co-workers, and neighbors. We generate these control variables because the literature suggests that the composition of the household and workplace can influence financial decisions with regard to the assessment of risk and loss. For example, Bogan, Just, and Dev (2013) find that a male presence in the workplace increases the probability of selecting a higher-risk investment. Hong, Kubik, and Stein (2004) report that educated households with above-average wealth are more likely to participate in the stock market if they interact with peers than others. Bär, Kempf, and Ruenzi (2011) find that team size has a moderating effect on investment behavior.

Similar to the methodology applied by Lu (2011), we construct each person's household- and company-level asset allocation by taking the average of the asset allocation of all the other participants in the household and company. We calculate household, company, and neighborhood demographic variables by excluding the respective individual in question. By excluding an individual investor's details from the investor's own household, company, and neighborhood average enables the interpretation of variables to involve the effects of their peers only.

[Insert Table II]

A summary of key variables is presented in Table II. The level of funds under management, the proportion of male to women, and age distribution are in line with the figures reported by annual KiwiSaver evaluation reports by the New Zealand Inland Revenue (2013). For example, average funds under management are NZD$7,231, which is slightly under the NZD$8500 to NZD$10,000 range reported by New Zealand Inland Revenue (2013) and the

gender distributions are comparable, with 54% of our sample and 52% of the national sample being female. The proportion of default-enrolled investors in our sample is 8%. This is lower than the national average for default enrolment, as shown by Douglas (2014). We may observe fewer default-enrolled investors in our sample because those included in the sample interact (live and work) with other people. As shown in Table II the mean and median of a number of variables presented have large differences due to the data distribution. For instance, the average company size is 358 co-workers; however, the median company size is only 18. The higher average is caused by 25% of firms in the sample that have a higher number of co-workers (between 199 and 3,463). Only 1% of the 42,187 individuals in our sample switch funds. This figure is akin to other New Zealand reports on fund switching, as well as international studies (Madrian & Shea, 2001; Cronqvist & Thaler, 2004; Gerrans, 2012; Matthews, 2011).[8] We do not discuss all the control variables in our sample here; however, we present their results in later sections.

II. Methodology

To generate our main results, we use an ordinary least squares (OLS) model to test the relative importance of personal characteristics; household, workplace, and neighborhood peer effects; and financial advice on asset allocation. We use clustered standard errors to control for serial correlation in errors (we cluster by company, household, and neighborhood). Similar regression models that link investor choices to group choices have been used in literature; however, they focus on different variables (Bertrand, Luttmer & Mullainathan, 2000; Ivković & Weisbenner, 2007; Hvide & Östberg, 2013). We show our full model as follows:

[8] Cronqvist and Thaler (2004) find only 2.5% of Swedish investors changed to retirement plans in the first three years following the introduction of a new Swedish retirement plan scheme. Gerrans (2012) shows using Australian retirement data the overall percentage of people who change their balance or level of contribution to their retirement savings is 6.5%. Matthews (2011) finds than less than 5% of KiwiSaver members have switched between funds at the same provider.

$$
\begin{aligned}
&Asset\ allocation_{i,j,h,c,n} \\
&\quad = \alpha + HouseholdAssetAllocation_{i,j,h} + CompanyAssetAllocation_{i,j,c} \\
&\quad + Age_i + Female_i + LogFUM_i + TaxRate_i + Financial\ advice_i \\
&\quad + Default_i + Householdsize_{i,h} + HouseholdFemalePercentage_{i,h} \\
&\quad + HouseholdLogfum_{i,h} + HouseholdTaxrate_{i,h} + Householdage_{i,h} \\
&\quad + CompanySize_{i,c} + CompanyFemalePercentage_{i,c} \\
&\quad + CompanyLogfum_{i,c} + CompanyTaxrate_{i,c} + CompanyAge_{i,c} \\
&\quad + NeighborhoodSize_{i,n} + NeighborFemalePercentage_{i,n} \\
&\quad + NeighborLogfum_{i,n} + NeighborTaxrate_{i,n} + NeighborAge_{i,n} \\
&\quad + \varepsilon_{i,j,h,c,n}
\end{aligned}
\tag{1}
$$

where $Asset\ allocation_{i,j,h,c,n}$ is the percentage of asset allocation for *j* asset class categories available in the KiwiSaver fund portfolio (where *j* = 4 and the asset classes are cash, bonds, property, and equity) for investor *i* who lives in household *h* and works in company *c*. The term α is a constant; $HouseholdAssetAllocation_{i,j,h}$ is the average asset allocation within asset class *j* for all investors in household *h,* excluding the individual investor *i;* $CompanyAssetAllocation_{i,j,c}$ is the average asset allocation within asset class *j* for all investors in company *c,* excluding individual investor *i;* Age_i is the investor's age in years;[9] $Female_i$ is a dummy variable that equals one if the investor is female and zero if the investor is male; $LogFUM_i$ is the logged value of funds under management in the investor's KiwiSaver account; $TaxRate_i$ is the investor's personal income tax rate; $Financial\ advice_i$ is a dummy

[9] We also add an Age^2_i term to control for the non-monotonic relationship of an investor's age relative to asset allocation; however, we drop this variable from the regression models because it is nearly multicollinear with the Age_i variable.

variable that equals one if the KiwiSaver member has received financial advice;[10] $Default_i$ is a dummy variable that equals one if the KiwiSaver member enrolled in KiwiSaver by default enrolment; $Householdsize_{i,h}$ is the total number of investors in household h; $HouseholdFemalePercentage_{i,h}$ is the percentage of female members in household h, excluding investor i; $HouseholdLogfum_{i,h}$ is the log of average funds under management of household members in household h, excluding investor i; $HouseholdTaxrate_{i,h}$ is the average tax rate of household members in household h, excluding investor i; and $Householdage_{i,h}$ is the average age of household members in household h, excluding investor i. The calculations of the control variables for co-worker and neighborhood characteristics are identical to those of household characteristics described above; however, the variables are denoted c for the unique company in which investor i works and n for the postal code in which investor i lives. The term $\varepsilon_{i,j,h,c,n}$ is the clustered error term.

III. Results

This section considers the results of tests that assess the relative importance of personal characteristics; household, workplace, and neighborhood peer effects; and financial advice on asset allocation. First, we discuss the overall findings, comparing the relative importance of each set of variables; then, we go into further detail by breaking down the results for each model that we investigate. We present a summary of each model's performance by showing their R^2 in Table III. We model each group of explanatory variables individually and then add different combinations of grouped explanatory variables to compare each model's relative performance in explaining asset allocation decisions. We run seven models in the following

[10] We do not add control variables (interaction terms) for financial advice and demographic variables. We find the interaction terms are highly correlated with general personal characteristics, which would lead to near-multicollinearity. There is not enough of a difference between the full sample and the sub-sample of people who received financial advice to warrant separate control variables. We present a correlation matrix in Appendix G.

order: We look at personal characteristics and then household effects, personal and household effects combined, workplace effects, personal household and workplace effects combined, personal household effects, workplace neighborhood and financial advice effects, and finally all peer effects (household, workplace, and neighborhood) with financial advice, but excluding personal characteristics.

[Insert Table III]

Overall, our results show that all factors are important in asset allocation decisions, but some are more important than others. Judging by the R^2 in Table III we can see that peer effects in households dominate asset allocation decisions. The R^2 value of the household model is 15.5%, which is almost two times greater than the R^2 value of the personal effects model of 9.7%. When we combine personal and household effects into the same model, we find that R^2 improves considerably, to 23.3%. This indicates that the combination of the two sets of factors provides one of the best combinations to investigate asset allocation decisions. Workplace peer effects are also important in explaining the asset allocation decisions of individuals. When we only look at workplace effects, the R^2 is only 5.1%; however, it improves to 17% if we combine workplace effects with personal characteristics. If, however, we adjust our model to control for personal, household, and workplace effects, this substantially improves our model's explanatory power. The combined model describes 25% of the variation in asset allocation choice. While both household members' and co-workers' asset allocation choices are significant and positively related to the asset allocation choices of individuals, the household effect has a much larger impact.

In the next model, which we refer to as our full model, we account for all variables in our dataset, which includes neighborhood effects and financial advice. Although this full model has the highest R^2 value (26.8%) out of the models shown in Table III, we find that the addition of neighbor effects and financial advice contributes to the overall explanation of asset

allocation only marginally. The R^2 value improves by 1.8%, to 26.8%, when neighborhood effects and financial advice are controlled for, compared to an R^2 of 25% in the previous model without these controls. We can also see that factors included in the full model, such as workplace and neighborhood effects and financial advice, will add only 3.5% in terms of explanatory power to the model that only uses household peer effects and personal characteristics to explain asset allocation.

In the last model presented in Table III we run all variables together, but this time without personal effects, to see how our model can explain asset allocation decisions without knowing an individual's personal characteristics. We find that R^2 drops to 19.7%, suggesting that personal characteristics are important to know; however, if we had to choose between knowing only personal characteristics (R^2 of 9.7%) or only peer effects and financial advice information, we would prefer to have the peer effects information. Our results suggest that considering one group of factors and not the other could lead to an omitted variable problem. However, the coefficients of personal characteristics do not change sign or statistical significance when household effects are added, suggesting that this bias may not be severe. We discuss this in more detail in the next section.

A. Personal and Household Effects

Table IV presents the results of the personal characteristics model, the household peer effects model, and the combined personal and household effects model. Overall, we find that personal characteristics and household peer effects are significantly related to asset allocation choices; however, the combined model provides a better estimation of investor asset allocation decisions.

[Insert Table IV]

In the personal characteristics model alone, we can see that all demographic variables are statistically significant. As column (4) of Table IV shows, age is negatively related to equity exposure. This finding is in line with previous studies that find relatively older investors tend to hold smaller proportions of equity (Bodie, 2003 and Cocco, 2005).[11] We find that the level of funds under management is positively related to equity investment. The coefficient of *logfum* in column (4) shows that a 1% increase in the level of funds invested will lead to a 0.048% increase in equity assets held. This result confirms the findings presented by Hong, Kubick, and Stein (2004), who also find that wealth increases equity ownership. We find that gender is only statistically significant for the cash and bond regression and insignificant for property and equity assets. We find that the tax rate and default enrolment are negatively related to equity investments. Our measure of investor inertia, as proxied by the default enrolment variable, provides a nice reality check for our results, since we expect people who are inert to hold more cash and less equity because the default fund—namely, the conservative fund—is composed this way. Our findings also confirm the degree of investor inertia documented in the literature. A number of studies demonstrate the degree of investor inertia among individual investors using 401(K) plans in the United States. They show that once an investment choice has been made, changes to accounts rarely take place (Samuelson & Zeckhauser, 1988; Ameriks & Zeldes, 2002; Agnew, Balduzzi & Sunden, 2003). Although this degree of investor inattention may not be too harmful, since switching funds for the wrong reasons, such as past return chasing, can be an investment mistake (Zhang, 2011).

In the household peer effects model presented in columns (5) to (8) of Table IV we find that household peer effects are significantly related to individuals' asset allocation decisions. Before even turning to multivariate analysis, we observe in our data that 64% of all households

[11] We also include an age-squared term in earlier versions of the paper, but we drop the variable from the regression models because we find that age and age squared have near-multicollinearity. See the correlations table in Appendix F.

invest in the same fund as other members in their household.[12] We check that the similarity of investment fund choice between household members is not driven by coincidence and compare differences in asset allocation in our full sample. We find that there is considerable variance in the asset allocation in our sample, as presented earlier in Table II. There is less similarity in fund choice between people living in different households compared to the fund choices of members living in the same household.[13] The main variable of interest in the household effects model is household asset allocation and its relation to investor asset allocation. Columns (5) to (12) of Table IV show that in all cases the asset allocation of household peers has a significant and positive impact on individual investor asset allocation. The coefficient of *HouseholdAssetAllocation* is consistently positive and significant in the cash, bonds, property, and equity asset classes.

In columns (9) to (12) of Table IV we present the findings for the combined personal characteristics and household peer effects model. Comparing the three models in Table IV we can see that the combined model provides the best estimations of the three. Column (12) of Table IV shows that, on average, an investor would hold 32.5 percentage points in equity if, on average, other household members invested one percentage point in equity assets. While none of the household asset allocation coefficients change in statistical significance or sign between models, it is worth noting that all the household peer effect controls (percentage of females, average age, average funds under management, average tax, and household size) change coefficient signs compared to the results in the household model presented in columns (5) to (8). For example, the coefficient for household average age is -0.003 in column (8) and

[12] The univariate results are summarized in Appendix B.

[13] The most common fund held by investors in the total population is the growth fund, where we observe one in four investors in the total sample holding the same fund. This compares to two thirds of households investing in identical funds to the people they live with and one-third of individuals holding the same funds as their co-workers. Further, the similarity in fund choice within the household and workplace are not simply an observation of KiwiSaver members joining the same default fund, since the proportion of default enrolments is low and only contributes to 8% of the total sample.

changes to 0.001 in column (12). The dramatic change in signs of the coefficients suggests that excluding personal characteristics when looking at household effects causes serious omitted variable bias in the model. As we later show in the breakdown of models to come (in the next table), the signs and magnitudes of the household control variables presented in the combined model in Table IV stabilize and remain robust in all other models.

Based on our household peer effect results, it could be that the asset allocation decisions in one household are simply set by other members. Although we cannot distinguish the relation between household members, for example, whether the household members are husband and wife or flat mates, it is feasible that the strength of peer effects in our sample is driven to a large extent by one member of the household (the ultimate peer effect). The extent to which this scenario applies to households in our sample is unknown and unobservable. However, this does not seem to be the case in all the households we consider. For instance, Gilbert et al. (2013) conduct a survey among KiwiSaver investors from a New Zealand university and find that that 42% were the primary financial decision maker, 46% shared the responsibility, and 7% abdicated the responsibility (i.e., to a financial advisor). Gilbert et al. provide some indication of the proportion of households that might have asset allocation choices made by one person. Whether or not household members are family members optimizing their household investment strategy and choosing to invest in the same assets (what we interpret as the ultimate peer effect) or whether it is a peer effect among non-family members, knowing the extent to which asset allocations are similar among people who live together is interesting in and of itself.

Although we do not know which household peers are family members or otherwise, youth investors (people aged 18 years and under) could live at home with a parent. To identify this potential family relationship in our data, we compare the fund choices of all our youth investors with that of other household members. When we compare fund choices between

youth and other household members, we find that the similarity in fund choice is no different from the results from our full sample: 68.1% of youth hold the same funds as the other household members and 34.2% hold the same funds as their co-workers.[14] The household peer effect we find in this study supports the findings of Barnea, Cronqvist, and Siegel (2010), who investigate differences in the financial behavior of identical twins. The authors find both a genetic and a household–environment component that contribute to variation in investor behavior. They find that, among twins, the family environment has an effect on the investment behavior of young individuals, but it is not long lasting and disappears as an individual gains experience. The authors find evidence that frequent contact between twins results in similar investment behavior beyond what can be explained by a genetic factor. Given that in our study we directly measure the investment choices of people living in the same household environment, the intensity of contact between people who live together provides a potential explanation for our strong household peer effect observations.

Our study adds to the literature that examines household peer effects. Few empirical studies observe the behavior of household financial decisions, mostly because information on households making such asset allocation decisions is rare. Davis (1976) provides a comprehensive overview of decision making in the household. The author states that embedded in understanding household financial decisions is the difficulty of two key issues: first, the ability to identify relative influence and total influence between household members from the data and, second, the ability to explain variability in a person's involvement in financial decisions. As Ashraf (2009, p. 1245) states,

> Household outcomes depend on decisions made by spouses who may often disagree … a large and growing literature in economics provides evidence from several

[14] Again, controlling for youths holding default funds, we find that the most common fund held in youth accounts is the growth fund.

> countries that household savings and investment are significantly affected by how decision-making power is allocated between women and men.

Previous studies have implied that the head of the household, who usually dominates decision making, is often male. For instance, Sung and Hanna (1996, p. 17) investigate the role of risk tolerance in a family setting and find that

> Married couples are more like households headed by a single male than like households headed by a single female, as the predicted risk tolerance level of households headed by a single male is not significantly different from that of otherwise similar married couples.

Barber and Odean (2001) also show the greatest difference in investor overconfidence, as reflected by trading behavior, exists between single men and single women rather than between married men and women. The literature inherently implies that gender is the key determining factor in household asset allocation decisions.

B. Workplace, Personal, and Household Effects

Table V presents the findings from our personal characteristics and workplace model in columns (1) to (4) and those of the same model plus household effects in columns (5) to (8). The personal, household, and workplace effects model has a higher R^2 than the two models. In both models presented in Table V the peer asset allocation variables of household members and co-worker choices are significant and positively related to individuals' asset allocation choices. Once again, we are not too surprised to see that the asset allocation choices of co-workers is significantly related, since before even turning to multivariate analysis we observe that 34% of the people in our sample choose to invest in the same fund as their co-workers.

[Insert Table V]

The key point of Table V is that workplace peer effects also contribute significantly to asset allocation decisions; however, if we compare the R^2 values of the workplace effects model

with those of the household effects model, we find that household peer effects dominate workplace peer effects.[15] This result contrasts with that of Hvide and Östberg (2013), who find that the economic impact of co-worker investment choices are double that of family investment choices. A possible explanation for the difference in results between our study and Hvide and Östberg's is that they do not control for family member effects at the physical household level. Because location is not accounted for, it is possible that extended family members who are not in close geographic proximity to one another communicate less about their investments than those in close proximity to each other.

When both workplace and household peer effects are considered, all the personal characteristic results are robust and remain stable (as they were presented in the personal characteristics model in Table IV). The only variable that changes between the models presented in Table IV and Table V is gender. As mentioned earlier, columns (4) and (8) of Table IV show that there are no differences in equity holdings between men and women if we consider only personal characteristics and household peer effects. When we make corrections to our model and add controls for personal characteristics and household and workplace peer effects as shown in column (8) of Table V, we find that gender begins to play a role in equity asset allocation. The gender coefficient is negative and statistically significant, which means that, on average, women hold 0.4% less equity than men. This finding is in line with previous research, which frequently suggests that women are more risk averse than men (Cohn, Lewellen, Lease & Schlarbaum, 1975; Sunden & Surette, 1998; Agnew et al., 2003). We explore gender differences further by looking at fund choices in male-only and female-only households in our sample. Again, we find evidence that women invest less in equity assets than men do. Male-only households most commonly choose the growth fund, while female-only

[15] We run a model where we consider only workplace effects. We find that workplace effects have an R^2 of only 5%. Given that, it is the lowest R^2 out of all the models. We report the results in Appendix H.

households most commonly choose the conservative fund. We also test whether single-sex households differ in asset investment choice from the rest of the sample. We find that the differences are not significant for our full sample. We observe that 35% of male-only households invest in the same fund as other household members, whereas 39% of investors in female-only households hold identical funds as other household members.[16]

Table V also shows that only the age of co-workers and the *logfum* values of co-workers' control variables are statistically significant over all asset categories cash, bonds, property, and equity. Column (8) of Table V shows that the average age of co-workers is positively related to equity investment and their tax rate is negatively related to equity assets.

C. Neighbors, Financial Advice, Peers, and Personal Characteristics

[Insert Table VI]

Table VI shows the results of our full model, which investigates personal characteristics; household, workplace, and neighbor peer effects; and financial advice. Of all the models we look at, the full model has the highest overall R^2, 26.8%, as shown earlier in Table III. The main findings of Table VI show that neighbor peer effects and financial advice significantly affect asset allocation decisions; however, their overall contribution to the R^2 of the model is marginal in comparison to other factors such as household and personal effects. The asset allocation of neighbors (people living in the same postal code) has a positive and significant effect on the asset allocation of an individual. As shown in column (4) of Table VI, the asset allocation of neighbors in equity is 0.108, which means that, on average, an investor

[16] We also consider male- and female-only companies. We find that the results are similar to those of single-gender households, at 35% and 36%, respectively.

holds 10.8 percentage points in equity if the investor's neighbors hold one percentage point in equity assets. The strength and magnitude of our neighbor effect result are in line with the findings of previous studies that address the same/similar questions or various constitutive parts (e.g., either the workplace or the neighborhood in isolation). Previous studies tend to use variables that encompass larger geographic areas, such as zip code, city, Metropolitan Statistical Area (MSA), or state area codes, as proxies to measure neighborhood peer effects. For instance, Hong, Kubick, and Stein (2004) find "social investors," who attend church regularly and talk to their neighbors, are more likely to participate in the stock market if their peers do so. Brown et al. (2008) use MSAs[17] in the United States and find similar results. A 10-percentage point increase in average ownership in one's community leads to a four-percentage point increase in the likelihood of individual also owning stocks. This study also contributes to the literature by identifying the relative importance of different types of peer effects. We find that the importance of neighborhood effects seem to play a far lesser role in explaining asset allocation decisions if household and workplace peer effects are controlled for. This result highlights the drawback of studies using large populations covering only large geographical areas: the true effects of social interaction may become diluted, since "it is difficult to imagine a consultant living in Manhattan discussing her pension portfolio with a supermarket manager in Brooklyn, New York," as Lu states (2011, p 7.).

Column (4) of Table VI also shows the relation between financial advice and asset allocation decisions. Financial advice increases the proportion of assets held in equity assets. Investors who receive advice hold 8.3% more equity, on average, in their accounts. This finding is also in line with previous literature that reports that receiving advice increases risky asset investments (Zhang, 2014). According to Hackethal, Haliassos, and Jappelli (2012), financial

[17] An MSA is a geographical region with a relatively high population density at its core and close economic ties throughout the area. There are 381 MSAs in the United States, in total.

advisors often receive financial incentives to encourage their clients to increase their equity investments. Therefore, it should come as no surprise that advised investors take greater risks in their investment positions. This case also holds in New Zealand, where equity investments charge higher fees than funds with smaller proportions of risky assets.

We find that none of the neighborhood control variables are significant across all asset categories, with the exception of *logfum_pc*. Column 4 of Table VI shows that a 1% increase in the level of funds under management by neighbors will lead to a 1.5% decrease in equity assets held by the investor. This negative relation between funds under management invested by neighbors and equity investment is also found between co-worker and household member funds under management variables (-2.6% and -1.2%, respectively). We also find that all personal, household and workplace coefficients are robust and consistent with earlier results presented in Table V.

IV. Robustness Checks

In the following section we apply the holdout test, seemingly unrelated regressions, the Wald test, and the incremental *F*-test as robustness checks of our main findings. We also report the results of using clustered standard errors, White errors, perform the Heckman self-selection correction model, as well as standardize all variables in the model for comparison purposes, which we report in Appendices D and E. We show that our results are robust to outliers.

A. Holdout Test

In this section, we check the robustness of the relative importance of personal characteristics and household, workplace, neighborhood, and financial advice variables in

explaining asset allocation decisions. We perform a holdout test to formally assess the predictive ability of all the peer effects models (workplace, household, and neighborhood peer effects) against all the other models that we can assess (personal effects and financial advice models). We also include a model that includes a constant term only, with no explanatory variables. We can then use this model as a benchmark of the relative improvement of adding particular combinations of explanatory variables. Taking matters to an extreme, we compare combinations of explanatory variables to see whether *any* of the models are better at determining asset allocation than simply using the average asset allocation figure. We follow the methodology outlined by Ebbes, Papies, and van Heerde (2011) to select between our competing models. Ebbes, Papies, and van Heerde (2011, p. 11) note that the "holdout sample validation has important merits because it can be used to select models and assess whether the estimated relationship hold beyond the observations used for estimation." We carry out the holdout test by splitting our set of observations into an estimation sample (containing 80% of the sample) to estimate the model parameter and then applying the fitted model to the holdout sample (20% remaining sample) to predict the values of the dependent variable, which are then compared to the observed values. We calculate the sum of the squared residuals and compare the mean of the squared error terms to determine which model has the lowest estimation error.

[Insert Table VII]

We calculate the relative importance of the variables included in each of our seven models compared to a model that measures only a constant term. As shown in the last column of Table VII, overall, the full model improves model estimation the most out of the seven models. The full model (personal characteristics; household, workplace, and neighbor peer effects; and financial advice) reduces the mean of the squared error terms by 27.9% across asset classes. The next best combinations of variables to use when examining asset allocation decisions are the personal and household effects model and the personal and workplace effects

model, both of which result in relatively high reductions in estimation error of 24.4% and 26.6%, respectively. The worst-performing model according to the holdout test is the personal characteristics model, which has the smallest reduction in the mean squared error term, 3.5%. The results from the holdout test suggest that, ideally, it is best to be able to control for all the variables presented in the full model. However, suppose we cannot control for all types of factors included in the full model; then, it would be better to know an investor's household peer effects than the investor's personal characteristics. We find that the household peer effects model is more than four times better at reducing estimation errors than the personal characteristics model alone (when we compare the reduction in the mean squared error relative to that of the constant-term model, 14.5% and 3.5%, respectively).

B. Seeming Unrelated Regression and the Wald Test

In this paper, we use household, workplace, and neighborhood peer effects, as well as personal characteristics and financial advice variables, to explain asset allocation decisions. Since neighborhood effects are the more commonly used set of factors in the literature to examine peer effects, we want to test whether neighborhood effects remain central to asset allocation decisions if we control for all other types of effects (personal, household, and workplace effects and financial advice). In other words, does the inclusion of other factors reduce the explanatory power of neighborhood effects? We run a seemingly unrelated regression model and apply a joint Wald test to see whether the introduction of personal, household, and workplace effects and financial advice *statistically changes* the explanatory power of neighbor peer effects. We run this test both ways; that is, we test to see if the coefficients of neighbor effects change when all other factors are added to the model and also whether household and workplace effects, personal characteristics, and financial advice variables change when neighbor variables are factored in. Remarkably, as reported in Table

VIII, our results show that all neighborhood factors become insignificant when other peer effects and personal effects are considered. These results indicate that if a model uses only neighbor information to explain an individual's asset allocation decision, then the estimation results of that model may be unreliable due to omitted variable bias.

[insert Table VIII]

[insert Table IX]

We run another joint Wald test to examine the impact of peer effects factors on the personal characteristics model and vice versa. Table IX shows that the addition of peer effects and personal characteristic variables to the unconstrained model seriously affects and sometimes switches the signs of the coefficients in the constrained model. Variables with a statistically significant Wald test statistic, as presented in columns (4), (8), (12), and (16) in Table IX can be interpreted as follows. The inclusion of peer effects/personal characteristics in the unconstrained model (full model) significantly changes the coefficients of the parameters in the personal characteristics/peer effects model, that is, the constrained model. For example, columns (2) and (3) of Table IX show that the coefficients of *CompanyAssetAllocation* are 0.0141 and 0.0147, respectively. While both coefficients of *CompanyAssetAllocation* are significant, we can see that the Wald test statistic 0.03 is not. This means that the inclusion of personal characteristics in the unconstrained model presented in column (3) does not significantly change the explanatory power of the coefficient in the constrained model presented in column (2).

Overall, the results from the Wald test suggest that both personal characteristics and peer effects are important and need to be included in the model or there may be omitted variable bias. Gender, however, seems to be the only variable that is unaffected by omitted variable bias. The results from Table IX show that the variables for age, the ages of household members,

the ages of co-workers, the wealth of co-workers, and the wealth of household members significantly change in the unconstrained (full) model compared to the results in the constrained model. Gender is the only variable in the model that does not change when additional variables are considered. This suggests that the effect of gender on asset allocation is resilient and that the explanatory power of other variables does not affect the explanatory power of gender.

C. Incremental F-Test

We also run an incremental *F*-test to check whether adding peer effect variables to the personal effects model (and vice versa) changes the explanatory power of the coefficients of the first model. The incremental *F*-tests allow us to draw a conclusion about the importance of peer effects and personal effects in the full model (which includes both), since the explanatory variables are introduced as a block of variables rather than individually, as presented earlier in the joint Wald test.

[Insert Table X]

The results in Table X show the sum of squared residuals for the peer effects, personal characteristics, and full model. We can see that, on average, the full model (which consists of peers effects and personal effects) has the lowest estimation error across cash, bonds, property, and equity asset classes. The *F*-statistics presented in Table X are all large and statistically significant in the full model. This means that the inclusion of peer effects and personal characteristics as a group of variables significantly improves the fit of the overall model to explain the asset allocation choices of individuals.

D. Peer Fund Switching

Simply exploring the static asset allocation choices of peers may not tell the whole story of how household and workplace peers affect individual investor decisions. Our data enable us to further explore whether the fund switching behaviors of household members and co-workers encourage individuals to also *change* their asset allocation. To confirm the importance of household member and co-worker peer effects and to further support our main findings of the strength of peer effects, we investigate the fund switching behavior of investors relative to that of their peer groups.[18] We observe fund switching over three time intervals: six months, three months, and one month. Doing so reduces the likelihood of ruling out the potential of observing peer switching effects that linger over longer periods. For instance, an investor may intend to change investment funds at the same time as others but does not get around to taking action until a later time. Again, since we know from previous studies that individuals tend to display high levels of inertia (Madrian & Shea, 2001), we would be surprised to see significantly high levels of switching activity in a short period of time, such as within an interval of a month. However, since so few investors switch in the first place, we give the benefit of the doubt to investors who do switch in shorter time frames.

We use a probit model to test whether investor fund switching is related to peer fund switching. That is, what is the likelihood of an investor changing funds if someone in their household or company has changed funds? The probit model enables us to calculate the probability of fund switching while controlling for other investor characteristics. We calculate the marginal effects of the model, how much the conditional probability of fund switching changes when a peer changes funds, holding all other variables constant. If fund switching is unrelated to the fund switching activity of peer members in the household and in the workplace,

[18] Peer groups consist of household and co-worker data only, excluding neighbor effects.

we would expect the predicted probabilities to be insignificant. That is, what other people do to their investment funds should be unrelated to how the individual chooses to invest.

The full probit model is as follows:

$$
\begin{aligned}
Fund\ Switch_{i,h,c,t} \\
&= \alpha + HouseholdSwitch_{i,h,t} + CompanySwitch_{i,c,t} + Age_{i,t} \\
&+ Female_i + LogFUM_{i,t} + TaxRate_i + Financial\ advice_i + Default_i \\
&+ Householdsize_{i,h} + HouseholdFemalePercentage_{i,h} \\
&+ HouseholdLogfum_{i,h,t} + HouseholdTaxrate_{i,h} \\
&+ Householdage_{i,h,t} + CompanySize_{i,c} \\
&+ CompanyFemalePercentage_{i,c} + CompanyLogfum_{i,c,t} \\
&+ CompanyTaxrate_{i,c} + CompanyAge_{i,c,t} + \varepsilon_{i,t}
\end{aligned}
\tag{2}
$$

where the dependent variable $Fund\ Switch_{i,h,c,t}$ is a binary variable that takes the value of one if investor *i,* living in household *h* and employed by company *c*, switches investment funds at time *t* and zero otherwise. The term α is a constant; $HouseholdSwitch_{i,h,t}$ is a binary variable that takes the value of one if any member, excluding the individual investor *i*, of household *h* switches investment funds at time *t* and zero otherwise; and $CompanySwitch_{i,c,t}$ is a binary variable that takes the value of one if any member, excluding the individual investor *i*, of company *c* switches investment funds at time *t*. The remaining control variables of personal effects and household member and co-worker peer effects are identical to those in Equation (1), described above. The term $\varepsilon_{i,t}$ is the error term.

Columns (1) and (2) of Table XI report the results of our fund switching model over a six-month period, while columns (3) and (4) of Table XI cover fund switching activity over a

three-month period. Monthly switching activity is reported in columns (5) and (6). In summary, our fund switching results confirm the importance of household and workplace peer effects. Household member and co-worker fund switching is significantly positively related to an investor's fund switching behavior; however, the household member has a much greater influence.

[Insert Table XI]

The interpretation of the coefficients in probit regressions is not as straightforward as the interpretations of the coefficients in the linear regression model. The increase in probability attributed to a one-unit increase in a given explanatory variable is dependent on both the values of the other explanatory variables and the starting value of the given predictors. To offer economic interpretations of the coefficients, we present in Table XI the predicted marginal probabilities of the variables driving changes in asset allocation. The predicted probabilities of fund switching are calculated while holding all other variables in the model at their means, as shown in Table II. The predicted probabilities are reported in columns (2), (4), (6), (8), (10), and (12) of Table XI.

The standalone probability of an investor switching funds in our sample is 1%. When we add control variables to test the likelihood of investors switching funds if a household member or co-worker switches funds, we find that these choices are significantly related. A positive coefficient means that an increase in fund switching by peers leads to an increase in the predicted probability of the individual investor also switching funds. For instance, over a six-month period, if a household member switches funds, the probability of an investor in the same household switching funds is 10%. Over the three-month and monthly periods, the predicted probability for investor switching reduces to 9% and 6.7%, respectively. It is plausible that investors talk to one another about fund switching but do not actually get around

to taking the action of changing funds until a few months later. Investors are also affected by the switches of their co-workers. However, the probabilities of a fund switching spillover effect are much smaller among co-workers and in some cases it seems the percentage of switches between co-workers is less than the percentage of unconditional switches of 1%. The predicted probabilities of an investor switching funds if a co-worker switches funds are 2%, 1.1%, and 0.67% in the same six-month, three-month, and one-month periods, respectively. While we find that peer switching effects are robust and significantly related to an investor's likelihood of changing funds, we note that when control variables are added, in some instances the probability is reduced by half. This emphasizes the importance of personal characteristics and other peer-related factors in fund switching behavior.[19]

We confirm the importance of household and workplace peer effects. Household member and co-worker fund switching is significantly positively related to an investor's fund switching behavior; however, the household member has a much greater influence. Once again, this may be unsurprising since one expects the relationships between members of a home to be closer than those of co-workers. For instance, in a family setting, family members would naturally foster a source of information sharing. Our results are in direct contrast to the findings of Hvide and Östberg (2012), who report that co-worker effects are much stronger than and at times double that of family members. This begs the question why do strong peer effects exist within the workplace? Earlier research offers some insights. The literature suggests that individual investors do not have well-defined preferences and there is a tendency to pick the middle choice. Iyengar and Lepper (2000) show that limited choices lead to greater happiness and too much choice is demotivating. Whether investors even benefit from being able to choose their own retirement portfolios is contestable. Benartzi and Thaler (2002) investigate how much

[19] We run further tests with interaction terms between personal characteristics and fund switching variables. We find that our main switching results (the likelihood of switching funds if a household and workplace peer switches funds) do not change with additional control variables. Appendix C shows the results.

investor autonomy is worth and find the attractiveness of an investor's own portfolio to be indistinguishable from that of the average portfolio held by another. The stark reality of their work suggests the majority of people prefer what others hold over what they picked for themselves. In another recent field experiment of 300 investors in Brazil, Bursztyn, Ederer, Ferman and Yuchtman (2012) provide evidence that individuals learn from their peers, but that there is an effect of possession beyond that of learning. The authors find that 92% of the time investors chose an asset if they knew a peer purchased it; however, only 42% were likely to invest in the asset if they did not have information about their peer's choice. They note that if an investor purchases an asset, his/her peers may also want to purchase it, both because they learned from the investor's choice (social learning) and because the investor's possession of the asset directly affects their utility of owning the same asset (social utility).

E. Other Robustness Checks

We apply the most robust method from the beginning of our analysis by using cluster-robust standard errors in our models. This is because data drawn from a population with a grouped structure may have correlated standard errors and failure to control for clustering in OLS regressions will underestimate standard errors and overstate *t*-statistics (Moulton, 1986). The results from our main model, as presented in Table IV, use standard errors clustered at the company level. We also apply clustering at the household level, as well as use White standard errors; however, the difference in results is marginal. The standard errors are slightly smaller when we cluster by company; however, the coefficients and level of statistical significance of the variables do not change. We report these other robustness checks in Appendices 4 and 5.

[Insert Table XII]

We also run a Heckman two-stage model to correct for potential self-selection bias in our sample. Since people may self-select into household groups or companies due to similarities in age, gender, and wealth, this can bias against our results. As we show in Table XII, our main results do not change when we correct for self-selection bias. Self-selection exists at the household level but not at the company level, as evidenced by the statistically significant lambda (inverse Mills ratio). It is unsurprising that self-selection exists at the household level, since we expect people living in the same household to arrive there in a self-selecting way. For instance, people may marry others with similar levels of risk aversion or characteristics similar to their own. Homophily, love of the same, is the tendency of individuals to associate and bond with those who are similar (McPherson, Smith-Lovin, and Cook (2001)). Barber and Odean (2001) find that men trade more than women and that the difference in trading is greatest between single men and single women. This implies that financial decisions made jointly within a marriage reduce some of the gender differences related to overconfidence, since less of a gap (in trading activity) exists between married men and married women. Hamoudi (2006) also finds that married couples living in the same household tend to have similar risk preferences.

[Insert Table XIII]

As a final check of the robustness of our main OLS results and that our results are robust to outliers, we standardize all the variables in our sample and re-run the tests to see which group of factors has the highest relative importance in terms of driving asset allocation decisions. All variables are standardized by calculating their z-scores (by rescaling the variables to have a mean of zero and a standard deviation of one). Table XIII reports the results of the standardize model. Again, similar to the earlier results in Table VI we find the household to be the most dominant driver of asset allocation decisions, followed closely by peer effects in the workplace.

V. Conclusion

People who live in the same household affect individuals' asset allocation choices more than any other factor. In this paper, we investigate the relative importance of factors that determine the asset allocation choices and fund switching decisions of individual investors, using a large and unique proprietary database. We combine personal characteristics; household, workplace, and neighborhood peer effects; and financial advice factors together to assess their relative ability to explain variations in investor asset allocation choice. We find that all factors are important to asset allocation decisions; however, some factors are more important than others. Personal characteristics and peer effects in households (people living at the same physical address, whether family members or friends) dominate the asset allocation decisions of individuals. People who live in the same household are at least 2.5 times more likely to hold the same investment fund as others in their household. While we also find that peer effects in the workplace (co-workers working at the same company), neighborhood peer effects (people living in the same postal code), and financial advice are also significantly related to the asset allocation decisions of investors, their overall contribution to asset allocation choice is marginal in comparison to personal characteristics and household peer effects. Our results suggest that leaving out peer effects or personal characteristics when investigating asset allocation leads to an omitted variable problem and, as a result, may bias estimates. However, our paper also confirms a number of findings from previous studies that suggest that the omitted variable bias may not be too severe.

We perform a number of robustness checks to confirm our results. We show that peer effects are much more valuable in the model than personal characteristics and, if we had to choose one set of factors over the other, we would pick peer effects, since they explain more

variation in asset allocation decisions. We also find that the switching behavior of investors further confirms the importance of household and workplace effects. We show that investors are more likely to switch investment funds if someone in their family or workplace switches funds. On average, investors switch only 1% of the time; however, if a household member switches, then the likelihood of the investor switching becomes 10%.

This study contributes to the literature in several ways. It is the first paper to incorporate a comprehensive list of personal and environmental factors to jointly study the relative importance of these factors in relation to each other. Further, we use a unique dataset that is representative of a national population to understand more about the mutual fund behavior of individual investors. We also bring a greater level of precision and accuracy to the measurement of peer effects compared to earlier methods. Previous papers tend to use the neighborhood as a proxy for location and the site of peer effects. This paper uses a more specific unit of measure by looking at the exact physical location where an investor lives, as well as works, and then relates the investor's choice back to the choices of his or her household and workplace peers. The data we use has enabled three different strands of the literature to merge.

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Table I. Household size and company size

Panel A			
Household Size	Frequency	Percentage	Cum Percentage
2	18750	66.1%	66%
3	5530	19.5%	86%
4	2652	9.3%	95%
5	966	3.4%	98%
6	316	1.1%	99%
7	121	0.4%	100%
8	45	0.2%	100%
Total Households	28380	100.0%	100%
Panel B			
Company Size	Frequency	Percentage	Cum Percentage
2-25	13515	93.9%	94%
26-100	672	4.7%	99%
101-200	119	0.8%	99%
201-1000	72	0.5%	100%
1001-5000	14	0.1%	100%
Total Companies	14392	100.0%	100%

Table I shows the distribution of household size and company size contained in the sample in panels A and B, respectively. There are 28,380 households in total, of which 66% are 2 person households. There are 14,392 companies in the sample and 94% of all individuals included in the sample work in a company with 2 to 25 people. This is in line with the average firm size of New Zealand companies as calculated by the New Zealand Treasury, which shows that 91% of firms in New Zealand have fewer than 20 employees (Mills & Timmins, 2004).

Table II. Summary statistics

Variable	N	Mean	Std. Dev.	Min	25Q	Median	75Q	Max
Funds Under Management (FUM)	42187	7232	7167	102	2255	5099	10192	214855
Female	42187	0.54	0.50	0.00	0.00	1.00	1.00	1.00
Age	42187	40.2	13.9	15.0	27.0	41.0	51.0	69.0
Tax Rate	42187	20.8	5.9	10.5	17.5	17.5	28.0	28.0
Default Enrolment	42187	0.08	0.27	0.00	0.00	0.00	0.00	1.00
Financial Advice	42187	0.17	0.38	0.00	0.00	0.00	0.00	1.00
Cash Asset Allocation	42187	0.14	0.18	0.00	0.04	0.10	0.20	1.00
Bond Asset Allocation	42187	0.36	0.18	0.00	0.16	0.40	0.50	1.00
Property Asset Allocation	42187	0.08	0.05	0.00	0.03	0.08	0.12	1.00
Equity Asset Allocation	42187	0.43	0.21	0.00	0.17	0.42	0.68	1.00
Company Size	42187	358	780	2	4	18	199	3463
Company Female Percentage	42187	0.47	0.29	0.00	0.24	0.49	0.67	1.00
Company Average Age	42187	40.0	8.0	19.0	35.0	40.3	44.9	68.5
Company Average FUM	42187	6907	4019	246	4080	6248	9052	61933
Company Average Tax Rate	42187	21.8	3.1	10.5	20.1	22.1	23.8	28.0
Household Size	42187	3	1	2	2	2	3	8
Household Female Percentage	42187	0.48	0.26	0.00	0.33	0.50	0.50	1.00
Household Average Age	42187	36.0	13.4	16.0	25.0	34.0	45.0	69.0
Household Average FUM	42187	6034	5148	136	2352	4506	8185	111909
Household Average Tax Rate	42187	19.7	4.6	10.5	17.5	18.0	22.8	28.0
Log(FUM)	42187	8.48	0.93	4.62	7.72	8.53	9.23	12.30
Log(FUM) Household	42187	8.40	0.79	4.91	7.76	8.41	9.01	11.60
Log(FUM) Company	42187	8.68	0.60	5.51	8.31	8.74	9.11	11.00
Log(FUM) Neighbor	41970	8.89	0.17	6.33	8.79	8.79	8.79	11.00
Neighborhood Size	42187	558	406	5	209	575	772	1466
Neighborhood Female Percentage	42132	0.54	0.10	0.48	0.52	0.54	0.56	0.58
Neighbor Average Age	42132	40.8	7.3	37.2	39.1	40.3	41.7	43.1
Neighbor Average Tax Rate	42132	21.1	3.5	15.5	20.5	20.9	21.4	25.5

Table II provides the descriptive statistics of the data, which contains demographic information, asset allocation composition, and household, co-worker and neighbor-peer group information. There are 42,187 individual investors in the sample, as denoted by N. The mean of the variables, their minimum, maximum, median and standard deviation, as well as the 25^{th} and 75^{th} quartiles are presented. FUM is presented in New Zealand Dollars (NZD), gender is a percentage of females in the sample, age is expressed in years, tax rate is a percentage, default enrolment is expressed as a percentage of investors in the sample who were automatically enrolled into KiwiSaver, financial advice is expressed as the percentage of investors who received professional financial advice from an Authorized Financial Adviser in New Zealand, asset allocation by asset class is the average proportion of assets held in the all investors portfolio, company size is the average number of employees in a company, householdsize is the number of investors living at the same physical address and neighborhood size is the number of investors living in the same postcode. The household, company and neighbor peer group control variables of female percentage, average age, average tax rate and log of FUM are calculated for each household, company and neighborhood in the total sample using individual investor information.

Table III. Asset allocation: R-squares of models

OLS Model	Cash	Bonds	Property	Equity	Average
Personal	4.6%	2.1%	10.6%	21.5%	9.7%
Household	16.7%	14.5%	12.6%	18.3%	15.5%
Personal + Household	18.4%	27.1%	17.4%	30.4%	23.3%
Personal + Workplace	5.3%	24.0%	13.2%	25.4%	17.0%
Personal + Household + Workplace	18.0%	29.7%	19.1%	33.3%	25.0%
Personal + Household + Workplace + Neighborhood +FA	19.4%	31.1%	21.6%	35.0%	26.8%
Household + Workplace + Neighborhood + FA	17.8%	20.0%	17.4%	24.1%	19.8%

This table shows a summary of the R^2 of all our OLS models across asset classes; cash, bonds, property, and equity; and the respective average R^2 across asset classes. The model that explains the most variation in asset allocation is the full model, which includes personal effects, household, co-worker, neighborhood and financial advice effects.

Table IV. Asset allocation: Personal effects and household peer effects

VARIABLES	(1) cash	(2) bonds	(3) property	(4) shares	(5) cash	(6) bonds	(7) property	(8) shares	(9) cash	(10) bonds	(11) property	(12) shares
age	0.002***	0.005***	-0.001***	-0.006***					0.002***	0.005***	-0.0009***	-0.006***
	(31.1)	(63.2)	(-53.6)	(-69.8)					(22.9)	(51.0)	(-32.8)	(-51.6)
sex	-0.005***	0.006***	0.0003	-0.0006					-0.007***	0.008***	0.0001	-0.001
	(-3.22)	(2.93)	(0.62)	(-0.26)					(-4.06)	(4.32)	(0.113)	(-0.775)
logfum	-0.027***	-0.032***	0.011***	0.048***					-0.023***	-0.035***	0.009***	0.047***
	(-22.6)	(-23.1)	(25.3)	(27.3)					(-13.0)	(-17.4)	(17.64)	(18.8)
taxrate	0.0006***	0.007***	-0.001***	-0.006***					0.0007***	0.007***	-0.001***	-0.007***
	(4.05)	(25.6)	(-17.3)	(-20.3)					(3.27)	(23.4)	(-14.2)	(-18.6)
default_enrolmethod	0.021***	0.113***	-0.022***	-0.113***					0.014***	0.097***	-0.019***	-0.092***
	(4.69)	(8.65)	(-8.29)	(-7.61)					(3.38)	(7.63)	(-7.27)	(-6.51)
assetallocation_household					0.369***	0.213***	0.199***	0.253***	0.379***	0.283***	0.214***	0.325***
					(30.1)	(30.4)	(12.2)	(38.7)	(31.1)	(40.6)	(12.7)	(50.7)
female_h_percentage					-0.0007	-0.0004	0.0001	0.001	-0.007**	0.005	0.0006	0.001
					(-0.25)	(-0.09)	(0.11)	(0.23)	(-2.16)	(1.51)	(0.69)	(0.26)
avg_h_age					0.001***	0.002***	-0.0007***	-0.003***	-0.0003***	-0.001***	0.0001	0.001***
					(19.1)	(27.8)	(-25.1)	(-34.9)	(-3.25)	(-13.0)	(0.615)	(12.2)
logfum_h					-0.022***	-0.032***	0.011***	0.047***	0.001	0.007***	0.0008	-0.005**
					(-18.8)	(-17.0)	(20.4)	(22.2)	(0.548)	(3.25)	(1.29)	(-2.07)
avg_h_taxrate					0.0006***	0.006***	-0.001***	-0.005***	2.85e-05	-0.002***	0.0001*	0.002***
					(3.37)	(18.6)	(-14.0)	(-14.9)	(0.104)	(-6.78)	(1.95)	(5.68)
householdsize					0.003***	0.003***	-0.0003	-0.005***	-0.0010	-0.009***	0.001***	0.010***
					(3.72)	(3.580)	(-1.41)	(-4.45)	(-1.15)	(-10.5)	(5.73)	(9.47)
	0.244***	0.280***	0.052***	0.424***	0.200***	0.322***	0.018***	0.180***	0.189***	0.242***	0.0285***	0.212***
	(24.7)	(26.4)	(14.6)	(31.0)	(18.5)	(22.2)	(4.19)	(10.1)	(17.3)	(20.6)	(6.61)	(14.3)
	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187
	0.046	0.206	0.106	0.215	0.167	0.145	0.126	0.183	0.184	0.271	0.174	0.304

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Where the dependent variable A*ssetAllocation*$_{i,j,h,c}$ is the percentage of asset allocation for *j* asset class categories available in the KiwiSaver fund portfolio (where *j* = 4 and asset classes are cash, bonds, property and equity) for investor *i* who lives in household *h* and works in company *c*. α is the constant term; *HouseholdAssetAllocation*$_{i,j,h}$ is the average asset allocation within asset class *j* for all investors in household *h* excluding the individual investor *i; Age*$_i$ is the age of the investor in years; *Female*$_i$ is a dummy variable which equals to 1 if the investor is female and 0 if the investor is male; *LogFUM*$_i$ is the logged value of funds under management in the investor's KiwiSaver account; *TaxRate*$_i$ is the personal income tax rate of the investor; *Default*$_i$ is a dummy variable which equals to 1 if the KiwiSaver member enrolled to KiwiSaver by default enrolment; *HouseholdSize*$_{i,h}$ is the total number of investors in household *h*; *HouseholdFemalePercentage*$_{i,h}$ is the percentage of female members in household *h* excluding investor *i*; *HouseholdLogfum*$_{i,h}$ is the logged value of average funds under management of household members in household *h* excluding investor *i*; *Householdtaxrate*$_{i,h}$ is the average tax rate of household members in household *h* excluding investor *i*; *Householdage*$_{i,h}$ is the average age of household members in household *h* excluding investor *i*; and $\varepsilon_{i,j,c,h}$ is the error term clustered by company.

Table V. Asset allocation: Co-worker peer effects, personal effects and household peer effects

VARIABLES	(1) cash	(2) bonds	(3) property	(4) equity	(5) cash	(6) bonds	(7) property	(8) equity
age	0.00297***	0.00506***	-0.00112***	-0.00699***	0.00262***	0.00544***	-0.000997***	-0.00710***
	(29.32)	(56.25)	(-47.33)	(-65.69)	(22.45)	(48.11)	(-31.49)	(-50.58)
sex	-0.00577***	0.00757***	0.000356	-0.00233	-0.00681***	0.0102***	6.57e-05	-0.00392*
	(-2.847)	(3.803)	(0.554)	(-1.050)	(-3.120)	(4.960)	(0.0930)	(-1.688)
logfum	-0.0297***	-0.0372***	0.0122***	0.0555***	-0.0258***	-0.0384***	0.0104***	0.0531***
	(-18.13)	(-25.49)	(24.59)	(27.94)	(-12.83)	(-19.64)	(18.27)	(20.95)
taxrate	0.000701***	0.00704***	-0.00117***	-0.00669***	0.000652***	0.00767***	-0.00120***	-0.00730***
	(3.693)	(24.36)	(-15.71)	(-19.87)	(2.861)	(23.23)	(-13.48)	(-18.82)
default_enrolmethod	0.0190***	0.107***	-0.0205***	-0.106***	0.0123***	0.0927***	-0.0179***	-0.0874***
	(5.308)	(10.40)	(-9.612)	(-9.714)	(3.489)	(9.158)	(-8.178)	(-8.161)
assetallocation_company	0.185***	0.317***	0.255***	0.343***	0.133***	0.282***	0.204***	0.295***
	(8.473)	(22.25)	(7.823)	(24.90)	(7.373)	(20.68)	(6.206)	(22.55)
assetallocation_household					0.375***	0.268***	0.199***	0.307***
					(30.88)	(39.19)	(12.11)	(47.62)
female_h_percentage					-0.00741**	0.00561*	0.000609	0.000592
					(-2.147)	(1.678)	(0.667)	(0.152)
avg_h_age					-0.000363***	-0.00148***	-9.39e-06	0.00167***
					(-3.020)	(-12.39)	(-0.226)	(11.46)
logfum_h					0.000424	0.00517**	0.00140**	-0.00281
					(0.205)	(2.508)	(2.183)	(-1.123)
avg_h_taxrate					2.67e-05	-0.00195***	0.000170*	0.00195***
					(0.0976)	(-6.886)	(1.767)	(5.755)
householdsize					-0.00106	-0.00909***	0.00146***	0.00980***
					(-1.146)	(-10.35)	(5.501)	(9.560)
c_female_percentage	-0.000561	0.00366	0.000303	-0.00352	0.00244	0.00305	0.000328	-0.00497
	(-0.145)	(0.852)	(0.235)	(-0.724)	(0.678)	(0.746)	(0.263)	(-1.088)
avg_age	-0.000839***	-0.00178***	0.000370***	0.00270***	-0.000593***	-0.00156***	0.000300***	0.00228***
	(-5.214)	(-9.730)	(6.540)	(12.77)	(-4.075)	(-9.060)	(5.237)	(11.48)
logfum_c	0.00897***	0.0173***	-0.00420***	-0.0270***	0.00798***	0.0149***	-0.00379***	-0.0237***
	(3.841)	(6.521)	(-5.517)	(-8.747)	(3.751)	(5.762)	(-4.848)	(-7.992)
avg_taxrate	-0.000325	-0.00192***	0.000283*	0.00284***	5.93e-05	-0.00172***	0.000134	0.00227***
	(-0.914)	(-4.340)	(1.932)	(5.956)	(0.182)	(-4.087)	(0.911)	(4.969)
firmsize	4.00e-06***	-5.91e-07	-6.72e-07	-2.58e-06	3.75e-06***	2.01e-07	-7.50e-07	-3.36e-06*
	(3.350)	(-0.295)	(-1.079)	(-1.255)	(3.871)	(0.100)	(-1.244)	(-1.735)
Constant	0.196***	0.136***	0.0436***	0.323***	0.143***	0.122***	0.0251***	0.137***
	(13.85)	(8.503)	(8.318)	(19.07)	(10.28)	(7.475)	(4.419)	(7.675)
Observations	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187
R-squared	0.053	0.240	0.132	0.254	0.188	0.297	0.191	0.333

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Where the dependent variable $AssetAllocation_{i,j,h,c}$ is the percentage of asset allocation for *j* asset class categories available in the KiwiSaver fund portfolio (where *j* = 4 and

asset classes are cash, bonds, property and equity) for investor i who lives in household h and works in company c. α is the constant term; $HouseholdAssetAllocation_{i,j,h}$ is the average asset allocation within asset class j for all investors in household h excluding the individual investor i; $CompanyAssetAllocation_{i,c,t}$ is the average asset allocation within asset class j for all investors in company c excluding the individual investor i; Age_i is the age of the investor in years; Age^2_i is the squared term of Age_i; $Female_i$ is a dummy variable which equals to 1 if the investor is female and 0 if the investor is male; $LogFUM_i$ is the logged value of funds under management in the investor's KiwiSaver account; $TaxRate_i$ is the personal income tax rate of the investor; $Default_i$ is a dummy variable which equals to 1 if the KiwiSaver member enrolled to KiwiSaver by default enrolment; $HouseholdSize_{i,h}$ is the total number of investors in household h; $HouseholdFemalePercentage_{i,h}$ is the percentage of female members in household h excluding investor i; $HouseholdLogfum_{i,h}$ is the logged value of average funds under management of household members in household h excluding investor i; $Householdtaxrate_{i,h}$ is the average tax rate of household members in household h excluding investor i; $Householdage_{i,h}$ is the average age of household members in household h excluding investor i; $CompanySize_{i,c}$ is the total number of investors in company c; $CompanyFemalePercentage_{i,c}$ is the percentage of female members in company c excluding investor i; $CompanyLogfum_{i,c}$ is the logged value of average funds under management of investors in company c excluding investor i; $CompanyTaxRate_{i,c}$ is the average tax rate of investors in company c excluding investor i; $CompanyAge_{i,c}$ is the average age of co-workers in company c excluding investor i and $\varepsilon_{i,j,c,h}$ is the error term clustered by company.

Table VI. Asset allocation: Co-worker peer effects, personal effects and peers effects all

VARIABLES	(1) cash	(2) bonds	(3) property	(4) shares	(5) cash	(6) bonds	(7) property	(8) shares
assetallocation_company	0.128***	0.278***	0.202***	0.291***	0.111***	0.223***	0.184***	0.234***
	(6.990)	(19.95)	(6.502)	(21.28)	(6.090)	(15.84)	(5.892)	(16.48)
assetallocation_household	0.368***	0.264***	0.186***	0.298***	0.359***	0.203***	0.174***	0.237***
	(30.66)	(39.21)	(11.45)	(47.61)	(29.75)	(29.41)	(11.01)	(36.32)
assetallocation_neighbor	0.170***	0.135***	0.242***	0.108***	0.171***	0.141***	0.253***	0.127***
	(4.301)	(5.509)	(5.958)	(4.970)	(4.292)	(5.277)	(6.176)	(5.379)
age	0.00265***	0.00550***	-0.00102***	-0.00716***				
	(22.59)	(49.20)	(-32.46)	(-51.03)				
sex	-0.00648***	0.0102***	3.71e-06	-0.00423*				
	(-3.004)	(4.950)	(0.00542)	(-1.849)				
logfum	-0.0247***	-0.0365***	0.00975***	0.0508***				
	(-12.16)	(-18.49)	(16.90)	(19.68)				
taxrate	0.000700***	0.00772***	-0.00122***	-0.00735***				
	(3.033)	(23.19)	(-13.46)	(-18.80)				
default_enrolmethod	0.00723**	0.0848***	-0.0149***	-0.0771***				
	(2.009)	(8.244)	(-6.788)	(-7.078)				
fa	-0.0399***	-0.0615***	0.0232***	0.0818***	-0.0390***	-0.0632***	0.0238***	0.0828***
	(-20.70)	(-22.15)	(19.52)	(27.58)	(-20.36)	(-23.43)	(19.98)	(28.05)
c_female_percentage	0.00187	0.000901	0.000886	-0.00288	0.00475	-0.00442	0.000756	0.000368
	(0.514)	(0.214)	(0.718)	(-0.606)	(1.501)	(-1.023)	(0.677)	(0.0786)
avg_age	-0.000517***	-0.00149***	0.000276***	0.00217***	0.000870***	0.00165***	-0.000273***	-0.00188***
	(-3.552)	(-8.531)	(4.940)	(10.75)	(6.384)	(9.777)	(-5.161)	(-9.385)
logfum_c	0.00914***	0.0173***	-0.00461***	-0.0267***	0.00121	0.00324	-0.00112	-0.00800**
	(4.309)	(6.523)	(-6.009)	(-8.902)	(0.593)	(0.895)	(-1.273)	(-2.085)
avg_taxrate	0.000244	-0.00141***	3.90e-05	0.00189***	0.00102***	0.00499***	-0.000930***	-0.00449***
	(0.759)	(-3.423)	(0.279)	(4.257)	(3.199)	(9.877)	(-6.188)	(-8.158)
firmsize	3.71e-06***	6.65e-08	-7.16e-07	-3.19e-06	4.16e-06***	3.22e-06	-1.23e-06**	-6.28e-06**
	(3.639)	(0.0342)	(-1.273)	(-1.588)	(4.474)	(1.242)	(-2.165)	(-2.367)
female_h_percentage	-0.00673**	0.00626*	0.000379	-0.000636	-0.00140	0.00137	-0.000109	-0.000394
	(-1.982)	(1.881)	(0.426)	(-0.167)	(-0.458)	(0.388)	(-0.132)	(-0.0991)
avg_h_age	-0.000264**	-0.00135***	-6.56e-05	0.00144***	0.00164***	0.00253***	-0.000764***	-0.00376***
	(-2.215)	(-11.34)	(-1.594)	(10.10)	(17.07)	(26.22)	(-23.39)	(-32.14)
logfum_h	0.00495**	0.0121***	-0.00123*	-0.0122***	-0.0183***	-0.0274***	0.00849***	0.0412***
	(2.322)	(5.762)	(-1.919)	(-4.719)	(-12.38)	(-18.47)	(18.92)	(23.65)
avg_h_taxrate	-4.11e-05	-0.00203***	0.000177*	0.00201***	0.000339*	0.00498***	-0.000905***	-0.00435***
	(-0.151)	(-7.138)	(1.828)	(5.934)	(1.727)	(18.07)	(-12.06)	(-14.48)
householdsize	-0.00101	-0.00839***	0.00121***	0.00875***	0.00273***	0.00249***	-0.000460*	-0.00399***
	(-1.085)	(-9.471)	(4.540)	(8.481)	(2.884)	(2.605)	(-1.703)	(-3.536)
female_n_percentage	0.00356	0.0102	-0.00444	-0.0320**	0.00388	0.0101	-0.00451	-0.0352**
	(0.310)	(0.919)	(-1.333)	(-2.510)	(0.334)	(0.821)	(-1.290)	(-2.431)
avg_n_age	-0.000627***	-0.00110***	6.30e-05	0.000824***	-0.000644***	-0.00107***	5.62e-05	0.000806***
	(-2.772)	(-4.279)	(0.871)	(2.941)	(-2.767)	(-3.907)	(0.759)	(2.665)
avg_n_tax	-0.000348	-0.000758	-0.000439***	-0.00135**	-0.000259	-0.000752	-0.000466***	-0.00170***
	(-0.706)	(-1.239)	(-2.847)	(-2.234)	(-0.511)	(-1.148)	(-2.928)	(-2.582)
logfum_n	0.0152***	0.0137***	-0.00552***	-0.0151***	0.0159***	0.0187***	-0.00640***	-0.0200***
	(3.205)	(2.813)	(-3.685)	(-2.826)	(3.337)	(3.472)	(-4.094)	(-3.400)
neighborhoodsize	5.47e-06**	-5.85e-06***	-2.88e-07	-9.83e-07	5.87e-06***	-6.17e-06***	-3.21e-07	-1.56e-06
	(2.479)	(-2.820)	(-0.472)	(-0.398)	(2.632)	(-2.721)	(-0.507)	(-0.581)

Constant	-0.0482	-0.0882**	0.102***	0.378***	-0.0423	-0.122**	0.110***	0.490***
	(-1.189)	(-2.009)	(7.254)	(7.980)	(-1.044)	(-2.497)	(7.523)	(9.301)
Observations	41,970	41,970	41,970	41,970	41,970	41,970	41,970	41,970
R-squared	0.194	0.311	0.216	0.350	0.178	0.200	0.174	0.241

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Where $Asset\ allocation_{i,j,h,c,n}$ is the percentage of asset allocation for *j* asset class categories available in the KiwiSaver fund portfolio (where $j = 4$ and asset classes are cash, bonds, property and equity) for investor *i* who lives in household *h* and works in company *c*. α is the constant term; $HouseholdAssetAllocation_{i,j,h}$ is the average asset allocation within asset class *j* for all investors in household *h* excluding the individual investor *i;* $CompanyAssetAllocation_{i,j,c}$ is the average asset allocation within asset class *j* for all investors in company *c* excluding the individual investor *i;* Age_i is the age of the investor in years; $Female_i$ is a dummy variable which equals to 1 if the investor is female and 0 if the investor is male; $LogFUM_i$ is the logged value of funds under management in the investor's KiwiSaver account; $TaxRate_i$ is the personal income tax rate of the investor; $Financial\ advice_i$ is a dummy variable, which equals to 1 if the KiwiSaver member has received financial advice; $Default_i$ is a dummy variable which equals to 1 if the KiwiSaver member enrolled to KiwiSaver by default enrolment; $Householdsize_{i,h}$ is the total number of investors in household *h*; $HouseholdFemalePercentage_{i,h}$ is the percentage of female members in household *h* excluding investor *i*; $HouseholdLogfum_{i,h}$ is the logged value of average funds under management of household members in household *h* excluding investor *i*; $HouseholdTaxrate_{i,h}$ is the average tax rate of household members in household *h* excluding investor *i*; $Householdage_{i,h}$ is the average age of household members in household *h* excluding investor *i*. The calculation of control variables for co-worker and neighbor characteristics are identical to the calculation of household characteristics described above, however, the variables are denoted with *c* for the unique company investor *i* works in and *n* for the postcode that investor *i* lives in. $\varepsilon_{i,j,h,c,n}$ is the clustered error term.

Table VII. Holdout test

Mean Squared Errors	Cash	Bonds	Property	Equity	Average	Relative Importance
Constant	3.27%	3.29%	0.23%	4.19%	2.74%	-
Personal	3.05%	2.62%	0.20%	4.71%	2.65%	3.50%
Household	2.67%	2.83%	0.20%	3.67%	2.34%	14.50%
Personal + Household	2.57%	2.43%	0.19%	3.11%	2.07%	24.40%
Personal + Workplace	2.56%	2.33%	0.19%	2.97%	2.01%	26.60%
Personal + Household + Workplace	3.03%	2.50%	0.20%	3.31%	2.26%	17.70%
Personal + Household + Workplace + Neighborhood +Financial advice	2.53%	2.29%	0.18%	2.90%	1.98%	27.90%
Household + Workplace + Neighborhood + Financial advice	2.62%	2.65%	0.19%	3.42%	2.22%	18.90%

This table reports the mean of squared error (MSE) terms to compare which model has the lowest estimation error using the Hold-out test. We test what happens to prediction accuracy if we leave either personal effects or peer effects out of the full estimation model. We carry out the holdout test by splitting our set of observations into an estimation sample (containing 80% of the sample) to estimate the model parameter, then, applying the fitted model to the holdout sample (20% remaining sample) to predict the values of the dependent variable, which are then compared to the observed values. We report the MSE by asset class, the average MSE by model and the relative 'importance' of each model compared to the MSE of the model which measures the constant term only (we treat this as the base that the percentage of relative importance is calculated on).

Table VIII. Seemingly unrelated regression and Wald test

VARIABLES	(1) Cash	(2) Cash	(3) Cash	(4) Wald	(5) Bonds	(6) Bonds	(7) Bonds	(8) Wald	(9) Property	(10) Property	(11) Property	(12) Wald	(13) Equity	(14) Equity	(15) Equity	(16) Wald
AssetAll_company		0.024***	0.024***	0.00		0.086***	0.086***	0.22		0.043***	0.043***	0.00		0.102***	0.102***	0.07
		(5.56)	(5.58)	0.979		(21.3)	(21.3)	0.639		(13.1)	(13.2)	0.997		(24.19)	(24.23)	0.788
AssetAll_household		0.071***	0.071***	0.04		0.082***	0.082***	0.48		0.039***	0.039***	0.00		0.104***	0.104***	0.18
		(35.2)	(35.4)	0.850		(31.57)	(31.64)	0.489		(22.5)	(22.7)	0.961		(38.99)	(39.06)	0.667
AssetAll_neighbor	0.002		0.0002	0.03	0.0116		0.0002	0.48	0.00732		0.0008	0.31	0.0298**		0.000213	4.11**
	(0.196)		(0.251)	0.859	(0.706)		(0.25)	0.487	(0.622)		(0.66)	0.580	(2.039)		(0.310)	0.043
age		0.0005***	0.0005***	0.00		0.0017***	0.001***	0.53		-0.0002***	-0.0002***	0.00		-0.00250***	-0.00249***	0.19
		(12.27)	(12.3)	0.947		(33.6)	(33.7)	0.468		(-16.7)	(-16.8)	0.983		(-40.83)	(-40.90)	0.659
sex		-0.001	-0.001	0.00		0.0032***	0.003***	0.00		1.94e-06	1.92e-06	0.00		-0.00146	-0.00146	0.00
		(-1.37)	(-1.37)	0.996		(2.87)	(2.88)	0.948		(0.006)	(0.006)	0.999		(-1.083)	(-1.084)	0.991
logfum		-0.004***	-0.004***	0.00		-0.011***	-0.011***	0.09		0.002***	0.002***	0.00		0.0178***	0.0178***	0.03
		(-6.52)	(-6.54)	0.972		(-13.0)	(-13.0)	0.770		(9.14)	(9.21)	0.988		(16.78)	(16.81)	0.854
taxrate		0.0001	0.0001	0.00		0.002***	0.002***	0.21		-0.0002***	-0.0002***	0.00		-0.00257***	-0.00256***	0.04
		(1.43)	(1.43)	0.993		(21.1)	(21.1)	0.647		(-8.94)	(-9.00)	0.992		(-18.86)	(-18.90)	0.838
fa		-0.007***	-0.007***	0.00		-0.018***	-0.018***	0.09		0.004***	0.004***	0.00		0.0282***	0.0281***	0.04
		(-7.71)	(-7.74)	0.956		(-15.2)	(-15.3)	0.760		(15.6)	(15.7)	0.983		(19.20)	(19.23)	0.848
default_enrolmethod		0.001	0.001	0.00		0.026***	0.026***	0.12		-0.003***	-0.003***	0.00		-0.0271***	-0.0271***	0.02
		(0.98)	(0.99)	0.995		(15.7)	(15.7)	0.723		(-7.37)	(-7.42)	0.998		(-13.35)	(-13.37)	0.882
c_female_percentage		0.0002	0.0002	0.00		0.0003	0.0003	0.00		0.0002	0.0002	0.00		-0.000826	-0.000826	0.00
		(0.19)	(0.192)	0.996		(0.191)	(0.19)	0.995		(0.44)	(0.44)	0.997		(-0.383)	(-0.384)	0.999
c_avg_age		-0.0001*	-0.0001*	0.00		-0.0004***	-0.0005***	0.02		5.94e-05***	5.94e-05***	0.00		0.000758***	0.000757***	0.01
		(-1.75)	(-1.76)	0.997		(-6.40)	(-6.41)	0.893		(3.26)	(3.29)	0.999		(8.683)	(8.698)	0.925
logfum_c		0.001**	0.0018**	0.00		0.005***	0.005***	0.01		-0.0009***	-0.0009***	0.00		-0.00935***	-0.00934***	0.01
		(2.19)	(2.19)	0.995		(5.34)	(5.35)	0.911		(-3.86)	(-3.891)	0.999		(-7.739)	(-7.752)	0.932
C_avg_taxrate		0.00004	0.00004	0.00		-0.0004**	-0.0004**	0.00		7.49e-06	7.50e-06	0.00		0.000642***	0.000642***	0.00
		(0.35)	(0.35)	0.999		(-2.50)	(-2.51)	0.958		(0.17)	(0.17)	0.998		(3.109)	(3.114)	0.977
firmsize		7.16e-07	7.16e-07	0.00		7.44e-08	7.41e-08	0.00		-1.59e-07	-1.59e-07	0.00		-1.16e-06*	-1.16e-06*	0.00
		(1.59)	(1.60)	0.993		(0.13)	(0.13)	0.993		(-1.14)	(-1.151)	0.997		(-1.790)	(-1.793)	0.981
female_h_percentage		-0.001	-0.001	0.00		0.001	0.001	0.00		8.60e-05	8.60e-05	0.00		-4.05e-05	-4.11e-05	0.00
		(-0.86)	(-0.86)	0.998		(1.02)	(1.02)	0.984		(0.17)	(0.18)	0.999		(-0.0181)	(-0.0184)	0.995
avg_h_age		-0.00005	-0.00005	0.00		-0.0004***	-0.0004***	0.02		-1.45e-05	-1.45e-05	0.00		0.000505***	0.000505***	0.01
		(-1.14)	(-1.14)	0.997		(-7.31)	(-7.33)	0.875		(-1.02)	(-1.02)	0.998		(7.199)	(7.211)	0.935
logfum_h		0.0009	0.0009	0.00		0.004***	0.0040***	0.01		-0.0002	-0.0002	0.00		-0.00443***	-0.00443***	0.00
		(1.12)	(1.13)	0.998		(3.83)	(3.83)	0.921		(-1.00)	(-1.007)	0.998		(-3.484)	(-3.490)	0.963
avg_h_taxrate		-7.28e-06	-7.29e-06	0.00		-0.0006***	-0.0006***	0.01		3.75e-05	3.75e-05	0.00		0.000703***	0.000702***	0.00
		(-0.061)	(-0.061)	0.999		(-4.30)	(-4.31)	0.927		(1.01)	(1.02)	0.998		(4.047)	(4.054)	0.965
householdsize		-0.0001	-0.0001	0.00		-0.002***	-0.002***	0.02		0.0002**	0.0002**	0.00		0.00324***	0.00323***	0.01
		(-0.37)	(-0.37)	0.990		(-5.60)	(-5.61)	0.894		(2.22)	(2.24)	0.989		(5.614)	(5.622)	0.936
female_n_percentage	-0.001		-4.27e-06	0.07	-0.00494		-7.81e-06	0.38	0.000841		-4.35e-06	0.19	0.00349		-2.81e-05	0.12
	(-0.271)		(-0.008)	0.786	(-0.615)		(-0.018)	0.538	(0.426)		(-0.02)	0.667	(0.345)		(-0.0589)	0.728
avg_n_age	9.71e-05		-3.69e-07	0.64	5.62e-05		-1.15e-06	0.13	-2.88e-05		-1.31e-07	0.59	-0.000252		2.62e-07	1.73
	(0.793)		(-0.038)	0.425	(0.347)		(-0.134)	0.722	(-0.768)		(-0.032)	0.442	(-1.312)		(0.0288)	0.188
avg_n_tax	-0.0002		-1.67e-06	0.64	-0.000515		-3.11e-06	1.84	4.86e-05		-8.25e-07	0.37	0.000414		-4.30e-07	0.92
	(-0.804)		(-0.08)	0.424	(-1.363)		(-0.155)	0.174	(0.592)		(-0.0932)	0.545	(0.955)		(-0.0210)	0.338
logfum_n	-0.002		9.78e-06	0.85	0.00174		2.45e-05	0.30	0.00110		-4.78e-06	2.16	0.00133		-1.42e-05	0.12
	(-0.915)		(0.051)	0.357	(0.555)		(0.146)	0.583	(1.456)		(-0.058)	0.141	(0.344)		(-0.0773)	0.738
neighborhoodsize	-2.37e-07		6.67e-09	0.06	-3.58e-06***		-2.24e-08	7.68***	2.87e-07		2.38e-09	0.85	3.97e-06**		1.01e-08	6.21**
	(-0.238)		(0.085)	0.806	(-2.781)		(-0.326)	0.00	(0.927)		(0.071)	0.355	(2.495)		(0.135)	0.013
Constant	0.159***	0.127***	0.127***		0.350***	0.252***	0.252***		0.0688***	0.076***	0.076***		0.399***	0.375***	0.375***	
	(7.64)	(20.2)	(19.6)		(12.98)	(33.7)	(33.2)		(10.60)	(39.3)	(37.2)		(11.95)	(40.5)	(40.0)	
Observations	41,970	41,970	41,970		41,970	41,970	41,970		41,970	41,970	41,970		41,970	41,970	41,970	

R-squared	0.000	0.067	0.067	0.001	0.162	0.162	0.000	0.081	0.081	0.001	0.201	0.201	

Where $Asset\ allocation_{i,j,h,c,n}$ is the percentage of asset allocation for *j* asset class categories available in the KiwiSaver fund portfolio (where *j* = 4 and asset classes are cash, bonds, property and equity) for investor *i* who lives in household *h* and works in company *c*. α is the constant term; $HouseholdAssetAllocation_{i,j,h}$ is the average asset allocation within asset class *j* for all investors in household *h* excluding the individual investor *i;* $CompanyAssetAllocation_{i,j,c}$ is the average asset allocation within asset class *j* for all investors in company *c* excluding the individual investor *i;* Age_i is the age of the investor in years; $Female_i$ is a dummy variable which equals to 1 if the investor is female and 0 if the investor is male; $LogFUM_i$ is the logged value of funds under management in the investor's KiwiSaver account; $TaxRate_i$ is the personal income tax rate of the investor; $Financial\ advice_i$ is a dummy variable, which equals to 1 if the KiwiSaver member has received financial advice; $Default_i$ is a dummy variable which equals to 1 if the KiwiSaver member enrolled to KiwiSaver by default enrolment; $Householdsize_{i,h}$ is the total number of investors in household *h*; $HouseholdFemalePercentage_{i,h}$ is the percentage of female members in household *h* excluding investor *i*; $HouseholdLogfum_{i,h}$ is the logged value of average funds under management of household members in household *h* excluding investor *i*; $HouseholdTaxrate_{i,h}$ is the average tax rate of household members in household *h* excluding investor *i*; $Householdage_{i,h}$ is the average age of household members in household *h* excluding investor *i*. The calculation of control variables for co-worker and neighbor characteristics are identical to the calculation of household characteristics described above, however, the variables are denoted with *c* for the unique company investor *i* works in and *n* for the postcode that investor *i* lives in. $\varepsilon_{i,j,h,c,n}$ is the clustered error term.

Table IX. Seemingly unrelated regressions and Wald test

VARIABLES	(1) Cash Personal Effects	(2) Cash Peer Effects	(3) Cash Full model	(4) Cash Wald test statistic	(5) Bonds Personal Effects	(6) Bonds Peer Effects	(7) Bonds Full model	(8) Bonds Wald test statistic	(9) Property Personal Effects	(10) Property Peer Effects	(11) Property Full model	(12) Property Wald test statistic	(13) Equity Personal Effects	(14) Equity Peer Effects	(15) Equity Full model	(16) Equity Wald test statistic
cash_company		0.0141***	0.0147***	0.03												
		(3.276)	(3.921)	0.871												
cash_household		0.0520***	0.0509***	1.34												
		(26.26)	(30.03)	0.248												
c_female_percentage		0.0009	0.0008	0.02		-0.0003	-0.00005	0.05		-0.00008	-0.00001	0.06		-0.0003	-0.0005	0.02
		(0.634)	(0.644)	0.875		(-0.209)	(-0.0489)	0.830		(-0.202)	(-0.0475)	0.809		(-0.134)	(-0.356)	0.895
avg_age		0.0004***	0.0003***	12.7***		0.0009***	0.0002***	150.1***		-0.0001***	-0.00005***	42.7***		-0.0012***	-0.0003***	198.6***
		(6.316)	(5.307)	0.000		(13.55)	(5.294)	0.000		(-7.791)	(-4.759)	0.000		(-15.35)	(-6.084)	0.000
logfum_c		-0.0026***	-0.0016**	6.07**		-0.0044***	-0.0004	28.9***		0.0013***	0.0004***	26.2***		0.0066***	0.0003	48.3***
		(-3.256)	(-2.383)	0.014		(-4.795)	(-0.614)	0.000		(5.371)	(2.653)	0.000		(5.780)	(0.341)	0.000
avg_pir		0.0002*	0.0002*	0.55		0.0022***	0.0007***	128.3***		-0.0003***	-0.0001***	26.2***		-0.0024***	-0.0008***	99.1***
		(1.867)	(1.750)	0.459		(13.98)	(7.183)	0.000		(-6.979)	(-5.054)	0.000		(-12.08)	(-6.201)	0.000
firmsize		0.000001**	0.000001**	0.37		0.000001**	0.0000004	3.32*		-0.000002**	-0.000001*	1.61		-0.000002***	-0.000001***	4.21**
		(2.036)	(2.037)	0.544		(2.420)	(1.460)	0.068		(-2.053)	(-1.759)	0.201		(-3.331)	(-2.616)	0.040
female_h_percentage		0.0003	0.00008	0.07		-0.0005	0.0003	0.33		-0.0001	-0.00005	0.02		-0.000008	-0.0003	0.03
		(0.186)	(0.0692)	0.798		(-0.309)	(0.244)	0.565		(-0.243)	(-0.204)	0.881		(-0.00425)	(-0.198)	0.873
avg_h_age		0.0007***	0.0005***	101.7***		0.0013***	0.0004***	489.2***		-0.0003***	-0.0001***	242.3***		-0.0023***	-0.0007***	892.5***
		(17.63)	(14.13)	0.000		(27.06)	(11.67)	0.000		(-21.18)	(-14.19)	0.000		(-36.72)	(-16.26)	0.000
logfum_h		-0.0102***	-0.0075***	44.5***		-0.0165***	-0.0054***	232.4***		0.0045***	0.0021***	213.0***		0.0269***	0.0098***	378.8***
		(-13.52)	(-11.23)	0.000		(-19.71)	(-8.859)	0.000		(20.37)	(13.49)	0.000		(26.33)	(12.92)	0.000
avg_h_pir		0.0001	0.0001	0.32		0.0027***	0.0009***	307.0***		-0.0004***	-0.0002***	72.9***		-0.0027***	-0.0009***	202.4***
		(1.190)	(1.024)	0.573		(22.24)	(10.42)	0.000		(-11.51)	(-7.639)	0.000		(-18.04)	(-8.535)	0.000
householdsize		0.0010***	0.0007**	2.43		0.0029***	0.0004	43.9***		-0.0003***	-0.0001	7.81***		-0.0038***	-0.0007**	50.3***
		(2.670)	(2.233)	0.119		(6.401)	(1.577)	0.000		(-2.864)	(-1.372)	0.005		(-6.939)	(-1.992)	0.000
age	-0.0009***		-0.0004***	9.84***	-0.0003*		0.0001	14.1***	0.0002***		0.0002***	7.29***	0.0019***		0.0012***	21.3***
	(-5.221)		(-5.481)	0.001	(-1.680)		(1.293)	0.000	(5.069)		(4.764)	0.007	(8.186)		(6.565)	0.000
agesq	0.00002***		0.00001***	39.1***	0.00004***		0.00001***	37.4***	-0.00006***		-0.00004***	33.0***	-0.00005***		-0.00003***	65.6***
	(9.456)		(8.728)	0.000	(10.27)		(7.674)	0.000	(-10.91)		(-10.25)	0.000	(-19.34)		(-18.09)	0.000
sex	-0.0004		-0.0001	0.14	0.0020**		0.0019**	0.02	-0.00004		-0.00006	0.01	-0.0014		-0.0016*	0.01
	(-0.468)		(-0.290)	0.709	(2.076)		(2.478)	0.881	(-0.158)		(-0.353)	0.906	(-1.258)		(-1.726)	0.923
logfum	-0.0074***		-0.0023***	77.1***	-0.0120***		-0.0092***	27.2***	0.0034***		0.0020***	109.6***	0.0196***		0.0142***	66.3
	(-11.56)		(-7.017)	0.000	(-18.13)		(-16.48)	0.000	(18.91)		(15.32)	0.000	(24.40)		(21.20)	0.000
pir	0.0002**		0.00007*	1.89	0.0027***		0.0021***	94.1***	-0.0004***		-0.0002***	56.0***	-0.0029***		-0.0022***	70.1***
	(2.128)		(1.837)	0.169	(30.13)		(27.76)	0.000	(-14.59)		(-13.01)	0.000	(-26.05)		(-24.38)	0.000
fa	-0.0049***		-0.0025***	7.06***	-0.0069***		-0.0083***	3.20*	0.0029***		0.0023***	8.58***	0.0134***		0.0142***	0.70
	(-4.683)		(-5.231)	0.008	(-6.269)		(-9.887)	0.073	(10.13)		(12.11)	0.003	(9.725)		(14.04)	0.402
default_enrolmethod	0.0024		0.0007	1.66	0.0216***		0.0181***	10.5***	-0.0027***		-0.0019***	8.86***	-0.0243***		-0.0192***	13.6***
	(1.630)		(1.116)	0.197	(14.04)		(15.43)	0.001	(-6.835)		(-7.139)	0.003	(-12.69)		(-13.64)	0.000
bonds_company						0.0112***	0.0253***	21.2***								
						(2.929)	(10.22)	0.000								
bonds_household						0.00691***	0.0227***	64.7***								
						(2.853)	(14.35)	0.000								
property_company										0.0145***	0.0146***	0.00				
										(4.785)	(7.235)	0.957				
property_household										0.0160***	0.0150***	0.72				
										(9.881)	(13.93)	0.395				
equity_company														0.0180***	0.0325***	20.3***
														(4.391)	(12.16)	0.000
equity_household														0.0179***	0.0335***	58.3***
														(6.971)	(19.84)	0.000
Constant	0.198***	0.185***	0.189***		0.370***	0.333***	0.330***		0.0597***	0.0571***	0.0576***		0.343***	0.374***	0.339***	
	(34.48)	(23.72)	(26.31)		(62.21)	(38.63)	(47.32)		(37.18)	(24.90)	(30.33)		(47.38)	(35.12)	(39.69)	
Observations	42,187	42,187	42,187		42,187	42,187	42,187		42,187	42,187	42,187		42,187	42,187	42,187	

R-squared	0.028	0.057	0.062	0.115	0.084	0.135	0.058	0.052	0.069	0.147	0.112	0.173	

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Where A*ssetAllocation*$_{i,j,h,c}$ is the percentage of asset allocation for *j* asset class categories available in the KiwiSaver fund portfolio (where *j* = 4 and asset classes are cash, bonds, property and equity)for investor *i* who lives in household *h* and works in company *c*. α is the constant term; *HouseholdAssetAllocation*$_{i,j,h}$ is the average asset allocation within asset class *j* for all investors in household *h* excluding the individual investor *i; CompanyAssetAllocation*$_{i,c,t}$ is the average asset allocation within asset class *j* for all investors in company *c* excluding the individual investor *i; Age*$_i$ is the age of the investor in years; Age^2_i is the squared term of *Age*$_i$; *Female*$_i$ is a dummy variable which equals to 1 if the investor is female and 0 if the investor is male; *LogFUM*$_i$ is the logged value of funds under management in the investor's KiwiSaver account; *TaxRate*$_i$ is the personal income tax rate of the investor; *Financial advice*$_i$ is a dummy variable, which equals to 1 if the KiwiSaver member has received financial advice; *Default*$_i$ is a dummy variable which equals to 1 if the KiwiSaver member enrolled to KiwiSaver by default enrolment; *HouseholdSize*$_{i,h}$ is the total number of investors in household *h*; *HouseholdFemalePercentage*$_{i,h}$ is the percentage of female members in household *h* excluding investor *i*; *HouseholdLogfum*$_{i,h}$ is the logged value of average funds under management of household members in household *h* excluding investor *i*; *Householdtaxrate*$_{i,h}$ is the average tax rate of household members in household *h* excluding investor *i*; *Householdage*$_{i,h}$ is the average age of household members in household *h* excluding investor *i*; *CompanySize*$_{i,c}$ is the total number of investors in company *c*; *CompanyFemalePercentage*$_{i,c}$ is the percentage of female members in company *c* excluding investor *i*; *CompanyLogfum*$_{i,c}$ is the logged value of average funds under management of investors in company *c* excluding investor *i*; *CompanyTaxRate*$_{i,c}$ is the average tax rate of investors in company *c* excluding investor *i*; *CompanyAge*$_{i,c}$ is the average age of co-workers in company *c* excluding investor *i* and $\varepsilon_{i,j}$ is the error term clustered by household.

Table X. Incremental F-test

	Cash	Bonds	Property	Equity	n	k
Personal Effects SSR	1216.09	1081.69	99.87	1425.17	42187	5
Peer Effects SSR	1091.74	1127.63	99.82	1476.71	42187	12
Full model SSR	1044.99	955.51	91.55	1222.02	42187	17
F-stat Personal Effects	575.35	464.03	319.34	584.19		
	(0.000)	(0.000)	(0.000)	(0.000)		
F-stat Peer Effects	269.47	1085.16	544.25	1255.54		
	(0.000)	(0.000)	(0.000)	(0.000)		

Table X shows the SSR (sum of squared residuals) between our three models, where we look at only the peer effects OLS model, personal effects OLS model and our full model (which includes both peer and personal effect variables). The peer effects include household and workplace effects. The F-statistic reports whether the introduction of peer variables to the personal effect model, and vice versa (effect of personal effects on peer effects), are significant to the full model.

Table XI. Fund switching

VARIABLES	(1) 6 months	(2) Marginal Effect	(3) 6 months	(4) Marginal Effect	(5) 3 months	(6) Marginal Effect	(7) 3 months	(8) Marginal Effect	(9) 1 month	(10) Marginal Effect	(11) 1 month	(12) Marginal Effect
is_h_switch	1.243***	0.1012	1.243***	0.0308	1.415***	0.0906	1.416***	0.0192	1.609***	0.0672	1.601***	0.0082
	(41.83)		(39.67)		(46.03)		(43.82)		(48.68)		(46.27)	
is_c_switch	0.423***	0.021	0.541***	0.0134	0.423***	0.0119	0.553***	0.0075	0.507***	0.0067	0.665***	0.0034
	(32.85)		(34.01)		(33.71)		(35.09)		(40.77)		(41.97)	
t1_sex			0.0128	0.0003			0.0122	0.0001			0.00909	0.00004
			(0.788)				(0.816)				(0.680)	
t1_taxrate			-0.00417**	-0.0001			-0.00409***	-0.00005			-0.00405***	-0.00002
			(-2.502)				(-2.671)				(-2.955)	
t1_age			0.0323***	0.0008			0.0296***	0.0004			0.0273***	0.00014
			(9.315)				(9.251)				(9.468)	
agesq			-0.000179***	-4.43E-06			-0.000162***	-2.21E-06			-0.000153***	-7.79E-07
			(-4.476)				(-4.414)				(-4.624)	
logfum			0.157***	0.0038			0.145***	0.0019			0.127***	0.0006
			(10.36)				(10.37)				(10.13)	
householdsize			-0.00450	-0.0001			-0.00193	-0.00002			0.000889	4.53E-06
			(-0.595)				(-0.277)				(0.143)	
h_female_percentage			-0.0238	-0.0006			-0.0214	-0.0003			-0.0192	-0.0001
			(-0.814)				(-0.795)				(-0.794)	
logfum_h			-0.0392**	-0.0010			-0.0365**	-0.0005			-0.0288*	-0.0001
			(-2.162)				(-2.185)				(-1.922)	
h_avg_taxrate			0.00483**	0.0001			0.00449**	0.00006			0.00422**	0.00002
			(2.293)				(2.318)				(2.435)	
h_avg_age			-0.00279***	-0.00007			-0.00240***	-0.00003			-0.00204***	-0.00001
			(-3.249)				(-3.033)				(-2.883)	
firmsize			-8.94e-05***	-2.22E-06			-8.84e-05***	-1.20E-06			-9.24e-05***	-4.71E-07
			(-13.72)				(-14.47)				(-16.54)	
c_female_percentage			0.0862***	0.0021			0.0778***	0.0010			0.0611***	0.0003
			(3.174)				(3.122)				(2.754)	
logfum_c			-0.0871***	-0.0022			-0.0707***	-0.000961			-0.0529***	-0.0002
			(-5.406)				(-4.782)				(-3.997)	
c_avg_taxrate			0.0137***	0.0003			0.0134***	0.0002			0.0126***	0.00006
			(5.225)				(5.555)				(5.848)	
c_avg_age			0.00277***	0.00007			0.00209**	0.00003			0.00133	6.78E-06
			(2.603)				(2.142)				(1.535)	
fa			-0.0995***	-0.0025			-0.0903***	-0.0012			-0.0802***	-0.0004
			(-6.056)				(-5.997)				(-5.974)	
default_enrol			-0.618***	-0.0153			-0.566***	-0.0076			-0.506***	-0.0025
			(-17.49)				(-17.14)				(-16.78)	
Constant	-2.453***		-4.022***		-2.677***		-4.210***		-3.013***		-4.492***	
	(-346.4)		(-29.17)		(-424.4)		(-33.19)		(-553.8)		(-39.59)	

Observations	424,060	424,060	424,060	424,060	848,120	848,120	848,120	848,120	2,544,360		2,544,360	2,544,360

The dependent variable *Individual Switch*$_{i,h,c,t}$ is a binary variable that takes the value of 1 if investor *i*, who lives in household *h* and is employed by company *c*, switches investment funds at time *t*, and is 0 otherwise. α is the constant term; *HouseholdSwitch*$_{i,h,t}$ is a binary variable that takes the value of 1 if any member (excluding the individual investor in question *i*) of household *h* switches investment funds at time *t*, and 0 otherwise; *CompanySwitch*$_{i,c,t}$ is a binary variable that takes the value of 1 if any member (excluding the individual investor in question *i*) of company *c* switches investment funds at time *t*, and 0 otherwise; *Age*$_{i,t}$ is the age of the investor in years; *Age*$^2_{i,t}$ is the squared term of *Age*$_{i,t}$; *Female*$_i$ is a dummy variable which equals to 1 if the investor is female and 0 if the investor is male; *LogFUM*$_{i,t}$ is the logged value of funds under management in the investor's KiwiSaver account; *TaxRate*$_{i,t}$ is the personal income tax rate of the investor; *Financial advice*$_i$ is a dummy variable, which equals to 1 if the KiwiSaver member has received financial advice; *Default*$_i$ is a dummy variable which equals to 1 if the KiwiSaver member enrolled to KiwiSaver by default enrolment; *HouseholdSize*$_{i,h,t}$ is the total number of investors in household *h*; *HouseholdFemalePercentage*$_{i,h,t}$ is the percentage of female members in household *h* excluding investor *i*; *HouseholdLogfum*$_{i,h,t}$ is the logged value of average funds under management of household members in household *h* excluding investor *i*; *Householdtaxrate*$_{i,h,t}$ is the average tax rate of household members in household *h* excluding investor *i*; *Householdage*$_{i,h,t}$ is the average age of household members in household *h* excluding investor *i*; *CompanySize*$_{i,c,t}$ is the total number of investors in company *c*; *CompanyFemalePercentage*$_{i,c,t}$ is the percentage of female members in company *c* excluding investor *i*; *CompanyLogfum*$_{i,c,t}$ is the logged value of average funds under management of investors in company *c* excluding investor *i*; *CompanyTaxRate*$_{i,c,t}$ is the average tax rate of investors in company *c* excluding investor *i*; *CompanyAge*$_{i,c,t}$ is the average age of co-workers in company *c* excluding investor *i* and $\varepsilon_{i,t}$ is the error term. Marginal effects are reported in columns (2), (4), (6), (8), (10) and (12).

Table XII. Heckman correction

VARIABLES	is_i_switch	Marginal Effects	VARIABLES	is_i_switch
1.is_c_switch	1.863***	0.167	H_switch_logfum	0.218***
	(5.528)			(2.976)
t1_sex	0.0603		H_switch_fa	0.225***
	(0.489)			(2.825)
t1_taxrate	0.00754***		H_switch_default	-0.396**
	(2.665)			(-2.245)
t1_age	0.0405***		H_switch_householdsize	-0.282***
	(10.82)			(-6.346)
agesq	-0.000127***		H_switch_Hfemalepercentage	-0.0458
	(-3.091)			(-0.281)
logfum	0.874***		H_switch_Hage	-0.0213***
	(9.047)			(-4.438)
householdsize	0.00614		H_switch_Hlogfum	-0.0688
	(0.795)			(-0.757)
h_female_percentage	-0.0316		H_switch_Htaxrate	0.00647
	(-1.046)			(0.588)
logfum_h	-0.0137		C_switch_sex	-0.00780
	(-0.725)			(-0.247)
h_avg_taxrate	0.00286		C_switch_age	-0.00122
	(1.316)			(-1.021)
h_avg_age	-0.00281***		C_switch_tax	0.00839***
	(-3.191)			(3.278)
firmsize	-0.000217***		C_switch_logfum	-0.0353*
	(-11.74)			(-1.694)
c_female_percentage	0.0526*		C_switch_fa	-0.0708**
	(1.702)			(-1.985)
logfum_c	-0.0268		C_switch_default	-0.326***
	(-1.433)			(-3.943)
c_avg_taxrate	0.00939***		C_switch_firmsize	0.000178***
	(3.250)			(8.906)
c_avg_age	0.00138		C_switch_Cfemalepercentage	0.119
	(1.170)			(1.638)
fa	-0.0672***		C_switch_Cage	0.00879***
	(-3.209)			(2.777)
default_enrol	-0.505***		C_switch_Clogfum	-0.323***
	(-12.37)			(-7.634)
1.is_h_switch	1.300**	0.106	C_switch_Ctax	0.0566***
	(2.440)			(6.980)
H_switch_sex	0.0172		lambdaH1	1,069***
	(0.239)			(7.137)
H_switch_age	0.00398		lambdaC1	-0.122
	(1.006)			(-0.0301)
H_switch_tax	-0.00340		Constant	-859.8***
	(-0.397)			(-7.275)
Observations	424,060			

This table reports the results from the Heckman correction model. All variables presented in Table XII are identical to Table XI, only with the addition of Lambda, the inverse Mills ratio. LambdaH1 is the inverse Mills ratio for the household correction and LambdaC1 is the inverse mills ratio for the company correction. *, **, and *** denote statistical significance at the 10%, 5% and 1% levels, respectively.

Table XIII. Standardized peer effects

VARIABLES	(1) cash	(2) bonds	(3) property	(4) shares
zpersonalage	0.0350***	0.0753***	-0.0137***	-0.0971***
	(27.59)	(61.54)	(-36.62)	(-69.71)
zpersonalfemale	-0.00384***	0.00307***	0.000388	0.000260
	(-3.639)	(3.063)	(1.250)	(0.228)
zpersonalfum	-0.0196***	-0.0298***	0.00821***	0.0402***
	(-13.70)	(-21.92)	(19.49)	(25.98)
zpersonalfa	-0.0144***	-0.0221***	0.00839***	0.0297***
	(-16.48)	(-26.64)	(32.47)	(31.40)
zpersonaltaxrate	0.00528***	0.0390***	-0.00702***	-0.0368***
	(6.286)	(48.84)	(-28.39)	(-40.48)
zdefaultenrol	0.00181**	0.0217***	-0.00383***	-0.0193***
	(2.174)	(27.35)	(-15.62)	(-21.36)
zcompanyfemale	0.000646	-0.000966	0.000359	0.000541
	(0.670)	(-1.055)	(1.267)	(0.520)
zcompanyage	-0.00380***	-0.0119***	0.00223***	0.0164***
	(-3.638)	(-11.83)	(7.288)	(14.20)
zcompanyfum	0.00330***	0.00933***	-0.00234***	-0.0124***
	(3.076)	(9.147)	(-7.409)	(-10.63)
zcompanysize	0.00401***	0.000654	-0.00100***	-0.00379***
	(5.019)	(0.842)	(-4.233)	(-4.333)
zhouseholdfemale	-0.00193**	0.000909	0.000226	0.000660
	(-2.162)	(1.072)	(0.861)	(0.683)
zhouseholdage	-0.00270**	-0.0174***	-0.00104***	0.0181***
	(-2.030)	(-13.03)	(-2.636)	(11.66)
zhouseholdfum	0.00185	0.00294**	0.000230	-0.00181
	(1.268)	(2.139)	(0.536)	(-1.149)
zhouseholdsize	-0.000967	-0.00775***	0.00126***	0.00820***
	(-1.095)	(-9.247)	(4.870)	(8.611)
zcompany_assetallocation	0.00982***	0.0300***	0.00684***	0.0358***
	(12.39)	(38.24)	(28.51)	(40.10)
zhousehold_assetalloaction	0.0648***	0.0463***	0.0118***	0.0626***
	(80.76)	(56.25)	(49.31)	(65.18)
zpostcode_assetallocation	0.00563***	0.00683***	0.00300***	0.00579***
	(6.168)	(4.712)	(10.45)	(4.868)
zneighborfemale	0.000804	0.00129	-0.000551	-0.00377***
	(0.654)	(1.106)	(-1.495)	(-2.779)
zneighbortaxrate	-0.00154	-0.00195	-0.00124**	-0.00382**
	(-0.900)	(-1.059)	(-2.415)	(-1.983)
zneighborage	-0.00528***	-0.00731***	0.000732	0.00630***
	(-2.912)	(-4.176)	(1.414)	(3.315)
zneighborfum	0.00335***	0.00295***	-0.00131***	-0.00354***
	(3.214)	(2.945)	(-4.300)	(-3.164)
zneighborhoodsize	0.00213***	-0.00234***	-9.77e-05	-0.000480
	(2.639)	(-3.059)	(-0.415)	(-0.555)
Constant	0.138***	0.356***	0.0796***	0.426***
	(178.3)	(485.6)	(350.3)	(510.6)
Observations	42,132	42,132	42,132	42,132
R-squared	0.194	0.310	0.216	0.348

t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table XIII shows the results from the following regression:

$$Asset\ Allocation_{i,j,h,c,n} = \alpha + ZPersonal\ Effects_{i,j,c,h,n} + ZCompany\ Effects_{i,c} + ZHousehold\ Effects_{i,h} + ZNeighbor\ Effects_{i,n} + ZFinancial\ Advice_{i} + e_{i,j,h,c,n} \quad (3)$$

Where $Asset\ Allocation_{ij}$ is the proportion of assets held by investor i in asset class j, α is the constant term, $ZPersonalEffects_i$ is a vector of the demographic variables of investor i including investor gender, age and funds under management. $ZCompanyEffects_{i,c}$ is a vector of the variables of company c that investor i is employed at. The company variables include; size of company c, percentage of females in company c, average age of employees working in company c, average funds balance of company c, and the average asset allocation holding of company c in asset class j. $ZHouseholdEffects_{i,h}$ is a vector of the variables of household h that investor i resides in, $ZNeighborEffects_{i,n}$ is a vector of the variables of neighborhood h that investor i resides in and $e_{i,j,c,h,n}$ is the error term.

Appendix A. Single person and multi-person asset allocation

Panel A: Single-Person Company Asset Allocation

	Cash	*Bonds*	*Property*	*Equity*
Mean	0.207	0.233	0.088	0.472
Standard Error	0.001	0.000	0.000	0.001
Median	0.109	0.123	0.119	0.640
Mode	0.099	0.123	0.120	0.658
Standard Deviation	0.222	0.175	0.049	0.228
Sample Variance	0.049	0.031	0.002	0.052
Kurtosis	7.873	-0.579	68.716	-0.875
Skewness	3.000	0.842	3.919	-0.754
Range	0.997	0.958	0.997	0.980
Minimum	0.003	0.000	0.000	0.000
Maximum	1.000	0.958	0.997	0.980
Sum	40537	45520	17239	92293
N	195589	195589	195589	195589

Panel B: Single-Person Household Asset Allocation

	Cash	*Bonds*	*Property*	*Equity*
Mean	0.217	0.352	0.069	0.362
Standard Error	0.000	0.000	0.000	0.000
Median	0.222	0.350	0.060	0.271
Mode	0.222	0.589	0.029	0.160
Standard Deviation	0.177	0.204	0.051	0.224
Sample Variance	0.031	0.042	0.003	0.050
Kurtosis	13.121	-1.539	62.120	-1.462
Skewness	3.577	-0.133	4.503	0.219
Range	0.997	0.958	0.997	0.980
Minimum	0.003	0.000	0.000	0.000
Maximum	1.000	0.958	0.997	0.980
Sum	58025	93937	18398	96849
N	267209	267209	267209	267209

Panel C: Multi-Person Household and Company Asset Allocation

	Cash	*Bonds*	*Property*	*Equity*
Mean	0.138	0.356	0.080	0.426
Standard Error	0.001	0.001	0.000	0.001
Median	0.100	0.400	0.080	0.420
Mode	0.040	0.160	0.120	0.680
Standard Deviation	0.177	0.181	0.053	0.212
Sample Variance	0.031	0.033	0.003	0.045
Kurtosis	16.511	-1.080	65.310	-1.099
Skewness	3.974	-0.007	5.237	-0.179
Range	1.000	1.000	1.000	1.000
Minimum	0.000	0.000	0.000	0.000
Maximum	1.000	1.000	1.000	1.000
Sum	5814	15024	3359	17989
N	42187	42187	42187	42187

Appendix A shows the descriptive statistics for asset allocation for single person households and companies and multi-person households and companies.

Appendix B. Differences in Peer Group Fund Choice

	Company		Household	
Difference in fund risk profile from median	N Individuals	Percentage	N Individuals	Percentage
0*	71,473	34%	88,354	64%
1	63,734	30%	31,540	23%
2	39,281	19%	13,157	10%
3	21,298	10%	2,657	2%
4	11,197	5%	1,645	1%
5	611	0%	471	0%
6	528	0%	33	0%
7	467	0%	13	0%
8	397	0%	15	0%
9	349	0%	4	0%
10	158	0%	7	0%
11	10	0%	2	0%
12	-	0%	-	0%
Total	209,503	100%	137,898	100%

*identical fund choice

This table shows the differences in investment fund risk profile between people in the same company and household. The fund numbers represent the level of fund risk profile of the funds. For example, the fund denoted Fund 1 would be the safest, being cash, and Fund 13 would be the riskiest. The differences in fund risk profile are calculated by taking the absolute value between an investor's investment fund choice and the peer-group median fund choice. Where no difference exists between fund risk profile the individual investor and their peer group are holding the same fund.

Appendix C. Switching behavior interaction terms

EQUATION	VARIABLES	(1) is_i_switch half-year	(2) is_i_switch quarterly	(3) is_i_switch monthly
is_i_switch	C_peer_switch	1.923***	1.732***	1.236***
		(5.800)	(5.070)	(3.398)
	1.is_h_switch	1.351**	1.607***	1.518**
		(2.561)	(2.942)	(2.520)
	t1_sex	0.0171	0.0188	0.0145
		(0.865)	(1.079)	(0.974)
	t1_taxrate	-0.00721***	-0.00675***	-0.00639***
		(-3.763)	(-3.939)	(-4.301)
	t1_age	0.0331***	0.0310***	0.0292***
		(9.304)	(9.424)	(9.838)
	agesq	-0.000180***	-0.000169***	-0.000165***
		(-4.474)	(-4.539)	(-4.935)
	logfum	0.160***	0.149***	0.129***
		(9.472)	(9.718)	(9.625)
	householdsize	0.00575	0.00642	0.00679
		(0.747)	(0.910)	(1.081)
	h_female_percentage	-0.0251	-0.0253	-0.0204
		(-0.836)	(-0.919)	(-0.830)
	logfum_h	-0.0359*	-0.0344**	-0.0277*
		(-1.923)	(-2.005)	(-1.814)
	h_avg_taxrate	0.00401*	0.00384*	0.00365**
		(1.854)	(1.942)	(2.074)
	h_avg_age	-0.00228***	-0.00194**	-0.00177**
		(-2.598)	(-2.417)	(-2.465)
	firmsize	-0.000214***	-0.000152***	-9.47e-05***
		(-11.59)	(-11.53)	(-11.00)
	c_female_percentage	0.0604*	0.0432	0.0349
		(1.958)	(1.568)	(1.465)
	logfum_c	-0.0340*	-0.0216	-0.0182
		(-1.843)	(-1.306)	(-1.265)
	c_avg_taxrate	0.00943***	0.00797***	0.00692***
		(3.267)	(3.070)	(3.056)
	c_avg_age	0.00183	0.000947	0.000995
		(1.555)	(0.896)	(1.081)
	fa	-0.0855***	-0.0742***	-0.0636***
		(-4.341)	(-4.284)	(-4.301)
	default_enrol	-0.501***	-0.461***	-0.418***
		(-12.39)	(-12.75)	(-13.25)
	H_switch_sex	0.0172	0.0200	0.0308
		(0.238)	(0.266)	(0.376)
	H_switch_fa	0.225***	0.253***	0.296***
		(2.831)	(3.097)	(3.357)
	H_switch_default	-0.390**	-0.472**	-0.503**
		(-2.215)	(-2.438)	(-2.270)
	H_switch_householdsize	-0.282***	-0.296***	-0.315***
		(-6.368)	(-6.344)	(-5.951)
	H_switch_age	0.00387	0.00329	-0.00123
		(0.977)	(0.806)	(-0.278)
	H_switch_tax	-0.00283	-0.00378	-0.00524
		(-0.331)	(-0.425)	(-0.531)
	H_switch_logfum	0.217***	0.197***	0.218***
		(3.012)	(2.653)	(2.621)
	H_switch_Hfemalepercentage	-0.0359	-0.0926	-0.250
		(-0.221)	(-0.547)	(-1.371)
	H_switch_Hage	-0.0213***	-0.0236***	-0.0205***
		(-4.459)	(-4.761)	(-3.764)
	H_switch_Hlogfum	-0.0714	-0.0347	-0.00768
		(-0.794)	(-0.373)	(-0.0748)
	H_switch_Htaxrate	0.00529	0.00315	0.00510
		(0.481)	(0.274)	(0.408)
	C_switch_sex	-0.00957	-0.0227	-0.0258
		(-0.304)	(-0.746)	(-0.863)
	C_switch_age	-0.00116	-0.00173	-0.00183
		(-0.962)	(-1.494)	(-1.606)
	C_switch_tax	0.00880***	0.00950***	0.0113***

	(3.433)	(3.842)	(4.641)
C_switch_logfum	-0.0387*	-0.0388**	-0.0263
	(-1.917)	(-1.977)	(-1.350)
C_switch_fa	-0.0692*	-0.0910***	-0.119***
	(-1.933)	(-2.581)	(-3.319)
C_switch_default	-0.325***	-0.388***	-0.484***
	(-3.934)	(-4.335)	(-4.679)
C_switch_firmsize	0.000177***	0.000125***	5.73e-05***
	(8.872)	(8.130)	(4.822)
C_switch_Cfemalepercentage	0.114	0.284***	0.413***
	(1.577)	(3.855)	(5.298)
C_switch_Cage	0.00846***	0.0134***	0.00941***
	(2.681)	(4.165)	(2.758)
C_switch_Clogfum	-0.320***	-0.380***	-0.376***
	(-7.612)	(-9.053)	(-8.596)
C_switch_Ctax	0.0545***	0.0760***	0.102***
	(6.749)	(9.070)	(11.25)
Constant	-4.391***	-4.527***	-4.706***
	(-29.37)	(-33.38)	(-39.33)
Observations	424,060	848,120	2,544,360

z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

This table reports the same probit model as in Table XI with the added interaction terms between company switching with control variables and household switching with control variables. This table reports the same probit model as in Table V with the added interaction terms of financial advice with company switching and financial advice with household switching. Fa*Company equals one when the investors receives advice and someone in his/her company switched funds in the last six months and zero otherwise. Fa*Household equals one when an investor receives financial advice and someone in his/her household switched funds in the last six month period.

Appendix D. Asset allocation cluster household

VARIABLES	(1) cash	(2) cash	(3) cash	(4) bonds	(5) bonds	(6) bonds	(7) property	(8) property	(9) property	(10) shares	(11) shares	(12) shares
cash_company	0.136***	0.115***	0.121***	0.303***	0.252***	0.278***	0.212***	0.185***	0.192***	0.299***	0.253***	0.286***
	(8.509)	(7.448)	(7.491)	(36.77)	(33.46)	(31.83)	(5.651)	(5.091)	(4.784)	(38.14)	(35.80)	(35.63)
cash_household	0.390***	0.356***	0.365***	0.292***	0.238***	0.265***	0.226***	0.183***	0.184***	0.340***	0.261***	0.297***
	(31.33)	(28.40)	(28.43)	(43.31)	(37.44)	(35.08)	(12.42)	(10.12)	(9.517)	(56.39)	(45.65)	(44.32)
age		-0.00647***	-0.00716***		0.00448***	0.00466***		0.00100***	0.000920***		0.00163***	0.00175***
		(-13.78)	(-14.64)		(11.00)	(11.20)		(8.197)	(7.741)		(3.779)	(4.017)
agesq		0.000108***	0.000125***		-1.53e-06	1.08e-05**		-2.44e-05***	-2.46e-05***		-9.10e-05***	-0.000113***
		(17.82)	(19.25)		(-0.298)	(2.023)		(-15.70)	(-16.69)		(-17.50)	(-21.38)
sex		-0.000768	-0.000972		0.00814***	0.0107***		-0.00118***	-0.00106*		-0.00656***	-0.00912***
		(-0.488)	(-0.458)		(5.510)	(5.328)		(-2.744)	(-1.734)		(-3.893)	(-3.994)
logfum		-0.0154***	-0.0210***		-0.0243***	-0.0367***		0.00681***	0.00904***		0.0333***	0.0477***
		(-16.60)	(-11.99)		(-26.48)	(-21.20)		(26.03)	(19.61)		(31.69)	(23.68)
pir		0.00127***	0.00115***		0.00658***	0.00775***		-0.00126***	-0.00130***		-0.00659***	-0.00774***
		(9.752)	(5.293)		(43.13)	(33.46)		(-25.91)	(-18.79)		(-39.47)	(-29.98)
fa		-0.0437***	-0.0426***		-0.0612***	-0.0608***		0.0231***	0.0235***		0.0861***	0.0834***
		(-24.20)	(-23.29)		(-27.78)	(-27.12)		(20.79)	(20.92)		(35.08)	(33.60)
default_enrolmethod		0.00619***	0.00648***		0.0832***	0.0850***		-0.0150***	-0.0149***		-0.0744***	-0.0767***
		(3.085)	(3.074)		(24.65)	(25.32)		(-19.14)	(-19.14)		(-19.50)	(-20.30)
c_female_percentage			0.00349			0.00102			0.000677			-0.00418
			(1.036)			(0.320)			(0.693)			(-1.160)
avg_age			-0.000289**			-0.00148***			0.000224***			0.00195***
			(-2.131)			(-11.32)			(3.800)			(13.44)
logfum_c			0.00956***			0.0174***			-0.00467***			-0.0269***
			(5.045)			(9.583)			(-6.335)			(-13.11)
avg_pir			0.000419			-0.00135***			-3.91e-05			0.00160***
			(1.339)			(-4.139)			(-0.243)			(4.501)
firmsize			2.93e-06***			1.09e-07			-5.98e-07*			-2.64e-06**
			(2.836)			(0.112)			(-1.703)			(-2.421)
female_h_percentage			-0.00361			0.00628**			-0.000224			-0.00309
			(-1.115)			(1.974)			(-0.246)			(-0.854)
avg_h_age			-0.00106***			-0.00144***			9.03e-05*			0.00217***
			(-8.631)			(-11.46)			(1.934)			(15.58)
logfum_h			0.00419**			0.0128***			-0.00112*			-0.0118***
			(2.118)			(6.311)			(-1.906)			(-5.048)
avg_h_pir			1.84e-05			-0.00200***			0.000166*			0.00192***
			(0.0694)			(-7.112)			(1.715)			(6.260)
householdsize			-0.00104			-0.00845***			0.00131***			0.00919***
			(-1.127)			(-10.05)			(4.947)			(9.492)
Constant	0.0722***	0.256***	0.225***	0.132***	0.0630***	0.0324**	0.0446***	0.0203***	0.0373***	0.157***	0.159***	0.154***
	(30.67)	(23.59)	(14.54)	(35.39)	(6.086)	(2.258)	(15.58)	(5.206)	(7.259)	(41.50)	(14.19)	(9.221)
Observations	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187
R-squared	0.157	0.204	0.207	0.130	0.302	0.310	0.105	0.216	0.218	0.165	0.346	0.357

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Where $AssetAllocation_{i,j,h,c}$ is the percentage of asset allocation for j asset class categories available in the KiwiSaver fund portfolio (where $j = 4$ and asset classes are cash, bonds, property and equity) for investor i who lives in household h and works in company c. α is the constant term; $HouseholdAssetAllocation_{i,j,h}$ is the average asset allocation within asset class j for all investors in household h excluding the individual investor i; $CompanyAssetAllocation_{i,c,t}$ is the average asset allocation within asset class j for all investors in company c excluding the individual investor i; Age_i is the age of the investor in years; Age^2_i is the squared term of Age_i; $Female_i$ is a dummy variable which equals to 1 if the investor is female and 0 if the investor is male; $LogFUM_i$ is the logged value of funds under management in the investor's KiwiSaver account; $TaxRate_i$ is the personal income tax rate of the investor; $Financial\ advice_i$ is a dummy variable, which equals to 1 if the KiwiSaver member has received financial advice; $Default_i$ is a dummy variable which equals to 1 if the KiwiSaver member enrolled to KiwiSaver by default enrolment; $HouseholdSize_{i,h}$ is the total number of investors in household h; $HouseholdFemalePercentage_{i,h}$ is the percentage of female members in household h excluding investor i; $HouseholdLogfum_{i,h}$ is the logged value of average funds under management of household members in household h excluding investor i; $Householdtaxrate_{i,h}$ is the average tax rate of household members in household h excluding investor i; $Householdage_{i,h}$ is the average age of household members in household h excluding investor i; $CompanySize_{i,c}$ is the total number of investors in company c; $CompanyFemalePercentage_{i,c}$ is the percentage of female members in company c excluding investor i; $CompanyLogfum_{i,c}$ is the logged value of average funds under management of investors in company c excluding investor i; $CompanyTaxRate_{i,c}$ is the average tax rate of investors in company c excluding investor i; $CompanyAge_{i,c}$ is the average age of co-workers in company c excluding investor i and $\varepsilon_{i,j}$ is the error term clustered by household.

Appendix E. Peer effects robust White standard errors

VARIABLES	(1) cash	(2) cash	(3) cash	(4) bonds	(5) bonds	(6) bonds	(7) property	(8) property	(9) property	(10) shares	(11) shares	(12) shares
cash_company	0.136***	0.115***	0.121***	0.303***	0.252***	0.278***	0.212***	0.185***	0.192***	0.299***	0.253***	0.286***
	(8.996)	(7.869)	(7.907)	(38.76)	(35.57)	(34.06)	(6.888)	(6.249)	(5.886)	(39.62)	(37.42)	(37.34)
cash_household	0.390***	0.356***	0.365***	0.292***	0.238***	0.265***	0.226***	0.183***	0.184***	0.340***	0.261***	0.297***
	(35.67)	(32.65)	(32.63)	(53.39)	(45.52)	(43.12)	(14.92)	(12.36)	(11.65)	(68.12)	(54.42)	(53.35)
age		-0.00647***	-0.00716***		0.00448***	0.00466***		0.00100***	0.000920***		0.00163***	0.00175***
		(-14.17)	(-15.04)		(11.32)	(11.43)		(8.951)	(8.358)		(3.956)	(4.145)
agesq		0.000108***	0.000125***		-1.53e-06	1.08e-05**		-2.44e-05***	-2.46e-05***		-9.10e-05***	-0.000113***
		(18.31)	(19.78)		(-0.307)	(2.063)		(-17.18)	(-17.89)		(-18.48)	(-22.06)
sex		-0.000768	-0.000972		0.00814***	0.0107***		-0.00118**	-0.00106		-0.00656***	-0.00912***
		(-0.486)	(-0.467)		(5.373)	(5.351)		(-2.553)	(-1.642)		(-3.804)	(-4.064)
logfum		-0.0154***	-0.0210***		-0.0243***	-0.0367***		0.00681***	0.00904***		0.0333***	0.0477***
		(-16.75)	(-12.60)		(-26.96)	(-22.18)		(27.26)	(20.21)		(32.45)	(25.19)
taxrate		0.00127***	0.00115***		0.00658***	0.00775***		-0.00126***	-0.00130***		-0.00659***	-0.00774***
		(9.943)	(5.728)		(44.93)	(35.58)		(-27.61)	(-18.97)		(-40.80)	(-32.03)
fa		-0.0437***	-0.0426***		-0.0612***	-0.0608***		0.0231***	0.0235***		0.0861***	0.0834***
		(-24.34)	(-23.26)		(-29.83)	(-28.73)		(23.42)	(23.55)		(38.18)	(36.05)
default_enrolmethod		0.00619***	0.00648***		0.0832***	0.0850***		-0.0150***	-0.0149***		-0.0744***	-0.0767***
		(3.124)	(3.102)		(25.89)	(26.39)		(-20.26)	(-20.36)		(-20.43)	(-21.07)
c_female_percentage			0.00349			0.00102			0.000677			-0.00418
			(1.035)			(0.320)			(0.707)			(-1.158)
avg_age			-0.000289**			-0.00148***			0.000224***			0.00195***
			(-2.122)			(-11.41)			(4.411)			(13.52)
logfum_c			0.00956***			0.0174***			-0.00467***			-0.0269***
			(5.083)			(9.687)			(-7.405)			(-13.24)
avg_taxrate			0.000419			-0.00135***			-3.91e-05			0.00160***
			(1.351)			(-4.279)			(-0.293)			(4.567)
firmsize			2.93e-06***			1.09e-07			-5.98e-07*			-2.64e-06**
			(2.823)			(0.112)			(-1.824)			(-2.452)
female_h_percentage			-0.00361			0.00628*			-0.000224			-0.00309
			(-1.052)			(1.860)			(-0.240)			(-0.792)
avg_h_age			-0.00106***			-0.00144***			9.03e-05**			0.00217***
			(-8.804)			(-12.23)			(2.232)			(16.43)
logfum_h			0.00419**			0.0128***			-0.00112**			-0.0118***
			(2.139)			(6.442)			(-2.024)			(-5.175)
avg_h_taxrate			1.84e-05			-0.00200***			0.000166*			0.00192***
			(0.0722)			(-7.460)			(1.868)			(6.495)
householdsize			-0.00104			-0.00845***			0.00131***			0.00919***
			(-1.164)			(-10.31)			(5.399)			(9.493)
Constant	0.0722***	0.256***	0.225***	0.132***	0.0630***	0.0324**	0.0446***	0.0203***	0.0373***	0.157***	0.159***	0.154***
	(33.92)	(24.51)	(14.70)	(38.16)	(6.312)	(2.258)	(18.31)	(5.824)	(7.923)	(45.01)	(14.62)	(9.198)
Observations	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187	42,187
R-squared	0.157	0.204	0.207	0.130	0.302	0.310	0.105	0.216	0.218	0.165	0.346	0.357

Robust t-statistics in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Where the dependent variable $AssetAllocation_{i,j,h,c}$ is the percentage of asset allocation for *j* asset class categories available in the KiwiSaver fund portfolio (where $j = 4$ and asset classes are cash, bonds, property and equity) for investor *i* who lives in household *h* and works in company *c*. α is the constant term; $HouseholdAssetAllocation_{i,j,h}$ is the average asset allocation within asset class *j* for all investors in household *h* excluding the individual investor *i;* $CompanyAssetAllocation_{i,c,t}$ is the average asset allocation within asset class *j* for all investors in company *c* excluding the individual investor *i;* Age_i is the age of the investor in years; Age^2_i is the squared term of Age_i; $Female_i$ is a dummy variable which equals to 1 if the investor is female and 0 if the investor is male; $LogFUM_i$ is the logged value of funds under management in the investor's KiwiSaver account; $TaxRate_i$ is the personal income tax rate of the investor; $Financial\ advice_i$ is a dummy variable, which equals to 1 if the KiwiSaver member has received financial advice; $Default_i$ is a dummy variable which equals to 1 if the KiwiSaver member enrolled to KiwiSaver by default enrolment; $HouseholdSize_{i,h}$ is the total number of investors in household *h*; $HouseholdFemalePercentage_{i,h}$ is the percentage of female members in household *h* excluding investor *i*; $HouseholdLogfum_{i,h}$ is the logged value of average funds under management of household members in household *h* excluding investor *i*; $Householdtaxrate_{i,h}$ is the average tax rate of household members in household *h* excluding investor *i*; $Householdage_{i,h}$ is the average age of household members in household *h* excluding investor *i*; $CompanySize_{i,c}$ is the total number of investors in company *c*; $CompanyFemalePercentage_{i,c}$ is the percentage of female members in company *c* excluding investor *i*; $CompanyLogfum_{i,c}$ is the logged value of average funds under management of investors in company *c* excluding investor *i*; $CompanyTaxRate_{i,c}$ is the average tax rate of investors in company *c* excluding investor *i*; $CompanyAge_{i,c}$ is the average age of co-workers in company *c* excluding investor *i* and $\varepsilon_{i,j}$ is the white heteroscedasticity-consistent standard error term.

Appendix F. Age correlation matrix

	female	age	age^2	tax	default	financial advice
female	1.00					
age	0.01	1.00				
age^2	-0.01	**0.99**	1.00			
tax	-0.15	0.09	0.07	1.00		
default	-0.05	-0.12	-0.11	0.26	1.00	
financial advice	-0.01	0.23	0.23	0.06	-0.13	1.00

Appendix G. Financial advice correlation matrix

	fa	fa_female	fa_age	fa_tax	fa_logfum	fa_firmsize	fa_householdsize
fa	1.00						
fa_female	0.69	1.00					
fa_age	**0.96**	0.65	1.00				
fa_tax	**0.95**	0.60	**0.93**	1.00			
fa_logfum	**1.00**	0.67	**0.96**	**0.96**	1.00		
fa_firmsize	0.39	0.33	0.37	0.36	0.39	1.00	
fa_householdsize	**0.94**	0.64	**0.87**	**0.89**	**0.93**	0.37	1.00

Appendix H Workplace peer effects

VARIABLES	(1) cash	(2) bonds	(3) property	(4) shares
cash_company	0.149***			
	(6.828)			
c_female_percentage	0.00757**	0.00439	-0.00171	-0.0103**
	(2.291)	(0.988)	(-1.523)	(-2.123)
avg_age	0.00201***	0.00330***	-0.000702***	-0.00438***
	(14.26)	(19.53)	(-14.29)	(-22.04)
logfum_c	-0.0190***	-0.0245***	0.00829***	0.0327***
	(-10.33)	(-7.025)	(9.924)	(8.839)
avg_pir	0.000828**	0.00825***	-0.00134***	-0.00724***
	(2.529)	(15.32)	(-9.030)	(-12.31)
firmsize	4.97e-06***	3.48e-06	-1.43e-06**	-6.89e-06**
	(3.867)	(1.194)	(-2.104)	(-2.147)
bonds_company		0.225***		
		(15.83)		
property_company			0.217***	
			(6.530)	
equity_company				0.239***
				(16.79)
Constant	0.180***	0.158***	0.0505***	0.393***
	(12.64)	(7.558)	(8.605)	(16.15)
Observations	42,187	42,187	42,187	42,187
R-squared	0.014	0.074	0.044	0.073

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1