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# The Significance of Financial Competence and Risk Tolerance in Home-Related Expenditure by Jurisdiction and Regime

**Abstract:** Understanding observed geographical patterns in financial behaviour requires an analytical approach that joins global forces with national institutions and behavioural practices to account for similarities and differences in key explanatory variables. Patterns of home-related expenditures are regressed against individuals' attributes including age, gender, income, and employment status along with measures of individual's financial acumen. It is shown that there are differences in the statistical significance of individual attributes and financial factors (competence and risk tolerance) by jurisdiction, and between groups of jurisdictions distinguishing between Anglo-American and European countries. Implications are drawn for research at intersection of global finance, jurisdictional context and individual decision-making.

**Keywords:** Competence, risk tolerance, home expenditures, jurisdiction

**JEL codes:** D4, G2, G15, G21

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## Introduction

In economic geography, financialization and globalisation are the conceptual threads that bind together a critical perspective on neoliberalism and, at another level, everyday life as found in communities, cities and regions (Peck 2010). The global-local interface is the point of reference, looking to the global as the source of disruption and discontinuity while looking to the 'local' for similarities and differences in its consequences. This approach has been powerful, being a critique as well as an elaboration of the role of geography in the production of inequality. See, for example, Jones (2017) on Piketty (2014) and the ways in which a geographical perspective on the genesis of inequality provides to insights and qualifications to the idea that global capital is one and the same across the world.

Less evident has been the national-state, standing between the global and local. For much of economic geography this is not an oversight so much as a matter of emphasis in that focus on the global and the local provides the discipline a significant voice in the larger debate about contemporary capitalism (Cohendet et al. 2018). Research on European economies has also encouraged a region-centred perspective bypassing, in some cases, the initiatives of member-states. Nonetheless, BREXIT and the COVID-19 pandemic have demonstrated that the national-state matters in the spatial articulation of disruption and its consequences. Some countries have managed the pandemic better than others, drawing upon their national and regional health care systems in ways not available to other countries.

A renewed focus upon the national-state could help better understand the choices made by, and available to, residents and the related patterns of welfare. This has been recognised by Christopherson (2002), Gertler (2010), Rodrik (2013) and Alami and Dixon (2020) amongst others. Christopherson noted the persistence of national regimes of corporate governance; Gertler focused on the role of government in innovation and development; Rodrik challenged economic geographers to integrate the nation-state with cities and regions; and, Alami and Dixon mapped the return of notions such as (national) state capitalism. Com-

plementing these contributions, Coile et al. (2016) and Iversen and Soskice (2019) amongst others have stressed the complexity and multifaceted nature of national health and welfare systems notwithstanding shared challenges (see also Scharpf and Schmidt 2000).

For some commentators, the performance of national housing markets reflects the impacts of financialisation and globalisation and are trigger points of global financial crises (Aalbers 2019; Fernandez and Aalbers 2016). In some markets more than others the family home, like other types of property (e. g. farmland), has become a tradeable financial asset and liability requiring on-going commitments to maintain its use-value and longer-term market value (see Lowe et al. 2012; Ouma 2014). In these circumstances, individuals' risk-taking and competence are deemed emblematic of 'financialisaton' in that these behavioural cues are thought important for being effective financial decision-makers (see Langley 2008 with White and Koehler 2006). At issue here is whether these factors are significant explanatory variables of behaviour in jurisdictions more or less dominated by financial markets and institutions.

This paper traces the influence of key factors associated with financial decision-making across 11 jurisdictions including the UK and Europe, the Americas, and Australia and the Asia-Pacific. Specifically, it is shown there are distinctive differences in the significance of respondents' financial competence and risk tolerance for yearly home-related expenditures taking into account long-term life-cycle factors associated home ownership. We test for the importance of financial acumen in home expenditure for the entire sample, for Anglo-American and European countries, and for specific jurisdictions given differences between OECD countries in rates of homeownership and similarities between jurisdictions in the importance attributed to age and income in long-term patterns of homeownership (Andrews and Sánchez 2011).[1]

Here, the dependent variable is whether respondents made home-related expenditures over the previous year *given* homeownership. This variable includes expenditure on home-improvements, insurance, maintenance, mortgages and utilities—actions that are consistent with investing in the *current* and *future* value of one's home.[2] As

such, the focus of this paper is upon agency *given* status rather than explaining status *per se* – owning a home or not. Haggard and Eitam (2015, xi) defined agency as "the capacity to perform an action, or the event of performing that action". Their take on agency involves deliberation (whether to spend money on one's home) and translating intention into action (spending money on one's home). Two behavioural factors are the focus of the analysis—individual's competence and risk tolerance. Both are important in short-term financial decision-making (see Clark 2020).

In the next section, a brief account is provided of the evolving link between financial markets and property markets and how and why homeownership became entwinned with financial arbitrage. It is observed that this process has spread from Anglo-American countries through to Europe and beyond even if manifest in different ways (noted by Ward et al. 2019). Making sense of the behavioural implications of these developments is the focus of section three, illustrated by published interviews about financial decision-making and the importance attributed to property over stock markets by certain UK residents. The analytical framework underpinning the estimated model, the independent and dependent variables, and the bespoke survey which is the source of the data are then explained. The model is estimated across the entire dataset with jurisdiction-specific dummy variables, is re-estimated by Anglo-Saxon and European countries, and then by jurisdiction.

Risk tolerance is found to be a significant behavioural factor explaining home-related expenditure for the whole sample, is variable in influence for the 2 groups of jurisdictions and is significant for a number of jurisdictions. Financial competence was less important. This type of research is challenging. Whereas the concepts related to financialisaton are widely debated in the literature, giving empirical substance to this debate is more challenging. The goals of this paper are modest. Given the data available, the focus is upon statistical relationships rather than casual relationships. The later may require rather different modes of analysis including behavioural experiments with tighter control over background circumstances and key decisions.

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**1** The terms countries and jurisdictions are used interchangeably unless Hong Kong is directly referenced in the text. Hong Kong is a 'special administrative region' of the People's Republic of China and was subject to the treaty binding the PRC and the UK government as regards its transition to PRC rule. There remain many institutions and practices that reflect British influence.
**2** A mortgage is one way of purchasing a home. It is also a financial instrument and product and can complement retirement saving

depending upon the jurisdiction. See Evans and Razeed (2020) on Australia, Montgomerie and Büdenbender (2015) and Toussaint and Elsinga (2009) on the UK with reference to Europe.

# Financial Markets and Home Mortgages

From the 1960s onwards, the inflow of financial assets to market intermediaries accelerated outstripping their use-value to become stores of value. For Anglo-Saxon countries, a large proportion of inflows came from public and private pension funds – financial institutions that collect contributions and payout benefits spread over many years. For other countries, a large proportion of inflows came from global trade and exchange wherein those countries ran, and continue to run, significant trade surpluses (e. g. Germany). For yet other countries, a large proportion of inflows came from the collection and concentration of financial assets in global financial centres such as London, New York, Tokyo, and Hong Kong. In these jurisdictions, the stocks and flows of financial assets have been far larger than their domestic economies.

Bernanke (2005) was one of the first to point to a global surplus of savings – financial assets which far outstrip their use value in facilitating production, trade and economic development. Accompanying the growth in global financial assets has been the development of the global investment management industry which is highly geographically concentrated but functionally decentralised (Haberly et al. 2019). As such, assets flow from places like Des Moines (Iowa) to switch points such as Chicago and then on to global markets such as New York and London. In every step in the system of flows there are companies, regulators, and network managers that lubricate the speed and volume of financial transactions.

Evidence for the increasing global surplus of savings is found in the long-term decline of the discount rate. While the decline varies by market, the US discount rate had declined to about 8 % in 2000 and then declined precipitously through the global financial crisis, the Euro crisis, and now the pandemic to reach about 1.0 %. Over the last three decades, banks, pension funds and insurance companies have accommodated the decline in the discount rate by moving assets into higher yielding asset classes and products (Clark and Monk 2017). In doing so, however, these institutions have had to accept greater volatility in their current and expected funding levels given long-dated commitments and liabilities. As such, individuals can pay a premium for so-called 'safe' financial products that offer a rate of return over and above the discount rate (Caballero et al. 2017).

The search for a premium over government bonds has prompted waves of product innovation in the investment management industry. Various products have been developed, often backed by real assets such as property, corporate plant and equipment, and consumer brands and images. Historically, real assets were held by banks and insurance companies as 'certainty equivalents' underpinning their long-term commitments and lending practices to individual and corporate clients. Valuations were framed by reference to expected value rather than short-term market prices thereby meeting solvency requirements set by government regulators and ratings agencies. These policies enabled banks and insurance companies to claim a premium on their credit worthiness.

The US investment management industry led the way in making property an investable asset class rather than treating it as a certainty equivalent. Products were developed focused upon downtown office buildings in key markets such as Chicago, Miami and New York. As the market evolved, different types of property and different geographies were packaged together including, for example, suburban shopping malls and office parks in the south and western regions of the US. These types of products were also developed in the UK, with domestic and European exposure. The expected value of these investments were determined through the premium on location, current revenue, and their current and expected price.

These products were (are) rated in terms of their expected price and riskiness. As such, AAA-rated commercial property products were deemed relatively safe and offered a relatively low rate of return whereas BBB-rated commercial property products were risky but offered a relatively high rate of return (over and above the discount rate). With success, the US investment management industry turned to commodifying mortgages. In the US banking industry, it was customary for banks to lend to home buyers and then sell-on mortgages to commercial banks and/or insurance companies rather than hold mortgages and their underlying risks (Martin 2011). With banks and mortgage providers awash with capital, and with the prospect of selling-on home mortgages, lending practices were liberalised for those home-buyers otherwise excluded from the market.

Mortgages brought together in rated investment products were distinguished by geography, by the nature of housing, and by the profile of borrowers. To drive the short-term return of these products, low risk and low value homeowners were augmented with high risk and high value homeowners. At the limit, with high rates of economic growth in the south and south-west of the US leading up to the global financial crisis, it became possible to invest in sub-prime borrowers. The underlying risks were exposed by the global financial crisis.

These developments had welcome and pernicious effects. The commodification and transfer of risk encouraged banks to extend finance to homebuyers who would otherwise not meet their risk parameters. The sale of mortgages to lower income and higher risk homebuyers fuelled real estate development in growing regions of the US. For a decade or so, through to the global financial crisis, many homeowners saw their homes significantly increase in price (Shiller 2015). Easy access to home mortgages and the prospect of capital appreciation encouraged lower income earners to take on more debt and add to the amenities of their homes. Many did not, however, appreciate the risks involved nor did they have the financial competence to assess the short-term and long-term implications of their actions.[3]

These types of products were widely distributed in the global financial services industry, prompting large financial institutions to sell related products in Europe (Wainwright 2009). With the apparent success of these products in the US and the UK, and given the search for a premium on the declining discount rate, these products were sold into deregulated financial markets including continental Europe (see Grote 2007 on the deregulation process). London became the preferred site for producing and distributing these types of products in Europe, the Middle East, and Africa (Wainwright 2015; Wójcik 2013). Attempts were made in markets such as Germany to extend lending to lower income and higher risk home purchasers. These initiatives were less successful in part because of regulations on banking and lending institutions, local preferences for homeownership, and acknowledged cultural differences in risk tolerance.

## Framing Behaviour

In this section, individual behaviour is contextualised beginning with Anglo-American countries through to the rest of the world. At one level, it is assumed that government and (formal and informal) social institutions provide the rules of permitted behaviour, the scope of individual discretion, and proscribed behaviour (Bathelt and Gluckler 2014). In many cases, governments exercise their coer-

cive powers to regulate behaviour. Liberal democracies also use entitlements and systems of reward to encourage behaviour while discouraging through fines, penalties and taxation behaviour that goes against the grain.

For example, the US federal government underwrites homeownership by property rights and preferential tax and inheritance laws. While these incentives tend to benefit middle to higher income earners, homeownership is buttressed by benefits that link the home with community of residence and the provision of public services. Through much of the 20th century, UK housing was provided through community and local government housing associations, rental accommodation, and homeownership. The Thatcher revolution encouraged homeownership beyond the middle and upper classes through the privatisation of public housing. At the same time, the UK government liberalised the banking system and financial markets thereby sustaining the market for home purchase. Building societies were the beneficiaries of financial liberalisation *and* were often casualties of the global financial crisis (see Marshall et al. 2012) with implications for Europe (see Aalbers et al. 2017).

Behaviour is also framed by cultural expectations that, in a sense, reward those that act in accordance with social conventions and, through social approbation, penalise those who violate widely accepted norms and conventions. This is expressed, for example, in Storper's (1993) work on the third Italy and recent research on entrepreneurship and centres of innovation (Stuetzer et al. 2018). It is also to be found, for example, in commonplace assumptions about how markets work, the conventions underpinning economic relationships, and the role of trust in managing risk and uncertainty (Knox-Hayes 2016). For some, norms and conventions have a life separate from the machinery of government (Scanlon 1998). For others, government plays a crucial role in enabling and sustaining social norms (Hardin 1990).

Recent research in the behavioural and cognitive sciences supports the idea that national institutions and cultural expectations have significant roles in framing behaviour, drawing upon common test questions and experimental protocols to elicit similarities and differences in decision-making. See, for example, Henrich et al. (2005) on the role and significance of national norms and conventions for individual behaviour and Innocenti et al. (2019) on the commonalities and differences in the demand for insurance across countries. It has also been shown that there are cultural differences in how people respond to risk suggesting that national norms and conventions can affect individuals' risk tolerance (see Fan and Xiao 2006; Weber and Hsee 1998). More broadly,

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**3** Sub-prime borrowers were also subject to aggressive and, at times, misleading advertising and sales programmes that rewarded individual companies but shifted the risks involved through to the US government. In many cases, the risks imposed on home buyers and third parties were not acknowledged. See Kaplan and Sommers (2009). Similar problems were also apparent in the UK (see Langley 2008 and Leyshon et al. 2006).

cross-country research has discounted the plausibility of universal notions such as 'economic man' and 'economic preferences' (see Falk et al. 2018).

To illustrate, UK private sector employees are exposed to two types of interlocking risks. For a large proportion of individuals, retirement income is dependent upon job tenure: being employed full-time, earning an adequate income that rises with increasing age, and being employed by companies that have better than average contribution rates. On the other side of the equation, having a variable employment history, switching between employers, and being consigned to the margins of established labour markets can significantly discount expected retirement income. Given that pensions are partially determined by investment performance, financial market volatility can also adversely (but in some cases positively) discount (but in some cases enhance) pension value.

For workers in sectors of the economy that are growing and rewarding employees' skills and expertise, defined contribution (DC) pension accounts have become financial instruments as much as retirement savings (Clark et al. 2012). At the same time, there is a significant group of UK employees that experience high rates of job switching with modest DC contributions and have little interest in managing multiple pension accounts with small balances. There are, however, alternatives. The benefits of investing in residential and commercial property loom large in popular culture. The desirability of this option is also underwritten, in part, by government policies that have encouraged large and small investors to expand the stock of rental housing. Consequently, individuals can constitute themselves as investors for the purpose of owning and developing housing for rent and, ultimately, sale.

Stories of success in property markets are routinely published in the print and electronic media (Clark 2012). When asked about the relative virtues of different forms of retirement saving, those interviewed often claim that investment in property is a better option than participating in workplace pension schemes.[4] When asked why, certain answers dominate. First, in the negative, given the exposure of many workers to the vagaries of labour markets and the uncertainties associated with global financial markets these savings vehicles are deemed highly uncertain as to their ultimate value. Second, for those who have many jobs over their careers, workplace pensions are dif-

ficult even impossible to manage separately and together. By contrast, property is thought 'safe' in the sense that it "is expected to preserve its value during adverse systemic events" (Caballero et al. 2017, 29).

Investment in property is also deemed to be easier to understand and more likely to produce benefits over the long-term. While the risks associated with property investment are acknowledged, those interviewed believe that their investments have virtues either unpriced in the market and/or are not subject to market-related volatility (see also Lowe et al. 2012). Equally, those interviewed suggest that they can manage the risks in property investment whereas they feel powerless in the face of unanticipated financial market volatility. More generally, property is thought valuable on three counts: it has immediate use value, it is believed to be insulated from recurrent turmoil in financial markets, and its' value can be found in exploiting 'local' information as opposed to global markets.[5]

Those who invest in property are 'risk tolerant' in the sense that they are confident they can manage the risks associated with such investments. They are also confident that they have the competence necessary to evaluate opportunities, make forward commitments, and realise long-term value. In effect, they back their 'local' knowledge and understanding of property markets (a version of 'home bias'; see Clark and Wójcik 2007 and Flögel and Zademach 2017). Judging and managing risk is, presumably, of value in many countries whatever the circumstances of individuals. As such, Vieider et al. (2015) draw a distinction between the national context of behaviour and domain-specific reasoning—the former sets the salience or otherwise of certain issues (like homeownership) whereas the later demands of individuals certain types of skills and expertise (like estimating the risks associated with home-related expenditure).

## Analytical Strategy and Model

The link between globalization, financialization, and behaviour was illustrated by reference to housing markets. While specific to the UK and the USA and their financial systems, it is arguable that Australia, Hong Kong, the UK and the USA are instances where outsized financial sectors

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**4** This commentary draws on interviews published in each issue of The Sunday Times newspaper over the period 2007 – 2010, including the global financial crisis. The threads and themes highlighted are also to be found in subsequent issues of the newspaper through to the last issue of December 2020.

**5** Shafir et al. (1997) note the cognitive challenges involved in making sense of macroeconomic (and financial) movements that are spatially and temporally distant from local circumstances. Experience often over-shadows the relevance of informed opinion makers about processes that appear to operate at higher spatial scales (see also Roth and Wohlfart 2020).

are entwined with individual behaviour whether found in financial markets or in property markets (see Smith 2013). At issue is whether these institutional arrangements and behavioural imperatives are common to Europe and beyond given research that favours the continuing relevance of the national state (Rodrik 2013) and the persistence of 'varieties of capitalism' (Dixon 2011).

## Dependent variable

In this section, the empirical framework for the comparison of individual behaviour across jurisdictions anchored by reference to expenditure on the home is summarised. In doing so, the goal is to identify similarities and differences in the results of estimating a model across these jurisdictions where the dependent variable was whether respondents had made expenditures on their home over the previous year (2015). These types of expenditures can include home improvements, insurance, maintenance, mortgage payments and utilities—spending that contributes to the current and expected value of individuals' homes.[6]

## Control variables

Expenditure on one's home is also associated with a set of control variables notably age, age-squared, gender, income and employment contracts. Across the OECD, homeownership increases with age and income (Kraft and Munk 2011; Yang 2009). Nonetheless, the effect of age tails-off (even reverses) with increasing age in some jurisdictions more than others. There are also significant long-term differences between OECD countries in the *level* of homeownership and the strength of the relationship between homeownership, age and income. For example, homeownership is relatively high for Australia and the USA, somewhat less for the UK, and significantly less for Germany and Switzerland.

In most cases, purchasing a home requires a deposit. Depending on the jurisdiction, and the risks borne by mortgage providers, deposits can range from 10 % of the purchase price through to 50–60 % of the purchase price. As such, buying a home may require setting aside a portion of earned income to pay each instalment and,

ultimately, pay-off the mortgage. As well, owning a home incurs on-going costs including maintenance and upkeep, and investment in home amenities. Ultimately, the future value of a home depends, in part, on investing in its current quality. These are challenges for a significant portion of the population whose employment contracts are contingent, relatively unrewarding, and unlikely to produce increasing real incomes over their working lives (Cooper 2014; McDowell et al. 2009).

Gender may also be important given significant differences between OECD countries in terms of female workforce participation rates, part-time versus full-time work, and patterns of employment through their 30s, 40s, and 50s. Across the OECD, women are more likely to retire early, take part-time employment, and undertake other roles in family, community, and society. For example, Australian female labour force participation rates decline precipitously after 55 years of age reflecting, in part, gender-specific pension entitlements. While important to consider, Falk et al. (2018) contend that the effects of gender on risk tolerance are shrinking in OECD countries.

## Behavioural variables

The behavioural revolution has shown that many people are risk averse (Hogarth 2001; Kahneman and Tversky 1979). Even so, in the interviews focused on UK property investment people often suggested that the risks associated with this type of investment are easier to understand and manage than the alternatives. This is consistent with findings to the effect that risk preferences are shaped by tangible options, their salience, and the perceived payoffs associated with different levels of risk-taking (Weber 2020). By contrast, questions about risk disposition unconnected to viable and salient options tend to produce more variation in responses than questions that require respondents to answer according to the costs and benefits of their preferences (see Charness et al. 2013).

Risk-taking is also associated with social norms and conventions being rewarded in some cases (e. g. entrepreneurship) while being, in other cases, frowned upon (e. g. gambling). In Clark (2012), it was noted that many UK interviewees thought stock market investment to be a form of legalised gambling while they associated property investment with risk management and, in some cases, entrepreneurship. Many of those interviewed treated stock markets as another, entirely separate, domain notwithstanding the fact that UK stock markets and property prices (in aggregate) are highly correlated (Clark et al. 2010). It is hypothesised that risk tolerance is associated

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**6** In some jurisdictions, mortgage payments can be quite variable month-to-month and year-to-year. Mortgage holders can 'front-load' payments, 'back-load' payments, take payment holidays and even invest their mortgage in other financial instruments in anticipation of a higher rate of return against their future commitments.

with home-related expenditure given jurisdictional differences in the level of home ownership.

Academic research has shown that men tend to be more risk tolerant than women (Barber and Odean 2001). There are also differences in risk tolerance amongst women, perhaps more so than differences between men and women (Lindquist and Säre-Söderbergh 2011). Drawing upon the *The Sunday Times* sample, there were marked gender differences in risk tolerance with women more than men indicating anxiety about property-related investment. Studies of 'real' people in 'real' situations suggest that these types of differences can be significant and jurisdiction-specific—cultural *and* economic circumstances matter notwithstanding gender-related commonalities and shared concerns about future wellbeing (Falk et al. 2018; Henrich et al. 2010).

Being able to calculate expected risk and return in relation to current and expected interest rates and macroeconomic conditions requires financial competence. Whereas financial knowledge and understanding of relevant issues is useful, domain-specific skills are more important—these skills can make an appreciable and positive difference to the process and outcomes of decision-making (Kahneman 2011). At one level, competence involves 'recognition' of the nature of the issue and the application of domain-relevant decision-tools.[7] At another level, experience and learning-by-doing can refine and update decision-making protocols in the context of changing circumstances (Harvey 2012; Roth and Wohlfart 2020). Given the available data, it is hypothesised that the effect of financial competence on home-related expenditures is positive.

The model was estimated across the entire dataset including dummies to represent jurisdiction-specific effects, matching related studies that pool together survey respondents across jurisdictions (see Lusardi et al. 2011). Here, respondents' expenditure on their home in the previous year was regressed against their age, gender, income, and employment contract. It was expected that age, income, and employment status could have significant positive effects on home-expenditure. It was also expected that men more than women invest in their home on a year-to-year basis given patterns of female labour force participation rates and household status.

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**7** It is assumed that competent people can distinguish a decision-related issue from other nominally similar issues thereby speeding decision-making. Neophytes often use trial-and-error informed by recent data to explore an issue so-as-to better understand its dimensions and underlying properties. This type of decision-making is prone to error and the rudimentary application of relevant decision-tools (Harvey 2012).

In the second stage of analysis, the model was estimated for 2 sets of jurisdictions—testing for the existence of Anglo-American and European regime-effects. In the final stage, the model was estimated for each jurisdiction thereby allowing for comparison of the estimated parameters' significance, size and direction of effect with respect to home expenditures. This approach matches recent research in cognitive psychology and allows for the direct comparison of jurisdiction-specific results via a common set of independent variables (Tanaka et al. 2010). Quantitative estimates of similarities and differences in parameter estimates and significance are a means of identifying similarities and differences in the results by jurisdiction.

## Survey Instrument and Key Questions

The data used in this paper came from a bespoke representative sample survey (by age and gender) of employed men and women aged 25–60 years from 11 countries or jurisdictions sponsored by Zurich Insurance. The survey was designed in late 2015 and implemented in February and March 2016. The countries or jurisdictions included in the survey were Germany, Italy, Spain, Switzerland, and the UK, Brazil, Mexico, and the USA (the Americas), Australia, Hong Kong, and Malaysia (Asia). These include Anglo-American, European, Latin American, and Asian jurisdictions which have similar and not so similar institutions, levels of economic development, and financial institutions and practices.

Some surveys with global scope have relied upon opinion polls augmented by a small set of questions to inform academic research (see Falk et al. 2018). In this case, access was provided to a large, comprehensive survey which was designed for the purpose of understanding individual financial behaviour across jurisdictions given individuals' attributes and their place in national systems of regulation and health and welfare. For ease of analysis and interpretation, jurisdiction-specific samples were of similar size and consistency in terms of age and gender cohorts. Otherwise, small and/or inconsistent samples and problems of implementation related to language, culture and salience can hamper interpretation of the results (see Falk et al. 2018; Tanaka et al. 2010; Vieider et al. 2015).

The survey was comprised of 10 sections with a total of 57 questions (available from the authors). The average respondent took approximately 25 minutes to complete the survey. The first five sections were devoted to eliciting

information on respondents' backgrounds, their awareness and knowledge of financial instruments, their personal circumstances and expectations of family, employers and government. The sixth section provided questions about risk disposition. Sections 7 through 10 tackled willingness to pay, financial literacy, the socio-demographic profiles of respondents, and their employment status.

A commercial company was responsible for the implementation of the survey. It has experience in panel management and the collation of survey data across multiple jurisdictions with different languages, expectations, and performance criteria. Panel participants came to the survey without prior knowledge of its content and were modestly rewarded for participation in accordance with other similar surveys. Where necessary, the survey instrument was translated from English into the language or languages of the target jurisdiction with checks as to the integrity of the translation process including translation from those languages back to the English version.

Respondents provided their age (Q20) and gender (Q1), where Q20 was a continuous variable ranging from 25 to 60 years of age and the latter was a binary choice. As for income, information on respondents' current level of household income was used in terms relevant to their jurisdiction of residence (Q5c).

Rather than use Lusardi and Mitchell's (2011) 3-factor model of financial literacy, one item was chosen as a proxy for financial competence. The compound interest test involves key elements in any risk-related financial decision: expectations of the future, the cumulative effect of time on costs and benefits, and the calculation of current and expected wellbeing. It is especially important for housing given the long-term nature of such an investment. To be effective, people must recognize the nature of the problem and perform specific types of calculations. Also tested were the significance of the 3-factor model and the two other tests of financial literacy.

In the survey, respondents' risk tolerance was estimated through six answer options linking risk-taking to expected returns, ranging from taking "Substantial risk expecting to earn substantial returns" to "Below average risk expecting to earn below average returns" along with the option to choose "Not willing to take any financial risk". Respondents' risk disposition was anchored in the expected financial costs and benefits of making a choice (following the lead provided by Kahneman 2011). In effect, respondents were primed to reflect on the options, their expected values, and their salience (see Choi and Robertson 2020 on the value of priming compared to simpler types of questions that are unanchored).

# Empirical Analysis and Results

Question 38 of the survey was as follows: "Over the past year, did you make expenditures on any of the following? Please select all that apply." Answer options included spending on their home, spending on a house they rent to others, the purchase of land, spending on an investment product, and paying off existing loans or debts. Respondents were also provided the answer option "none of these". This question *primed* respondents to answer by reference to related behaviour rather than leaving the reference point unstated (see Kahneman 2011, 122–123 on the advantages of this type of framing). Those who answered in the affirmative as regards expenditures on their home were the focus of the analysis. As such, the dependent variable represents 'active' homeownership at a point in time rather than being simply a homeowner.[8]

In the first instance, the model estimated covered the entire database of 11 jurisdictions or countries with 10,943 completed surveys (respondents). Each jurisdictional sample was in the range of 950–1200 respondents, matching other studies such as Choi and Robertson (2020) who rely upon a US representative sample of 1013 respondents. Appendix A provides descriptive statistics and pairwise correlations for the variables used in the analysis.

## Pooled Model

Linear probability regression models were estimated where the dependent variable was equal to 1 (0 otherwise) if the respondent had made expenditures on their home. Independent variables included respondents' age, age squared, income levels, gender (1=female, 0 otherwise) and employment status (1=full time contract, 0 otherwise) and jurisdictional dummy variables. Answer options on employment status included full-time, part-time, on contract, or not employed. As for income, respondents'

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**8** We would also like to know how important spending on one's home was compared to the other answer options. As well, it would be very useful to know more about the amount spent relative to respondents' family incomes reported in value-terms that would allow for direct comparison across respondents and jurisdictions. Finally, it should be acknowledged that the data is, in a sense, cross-sectional in that it refers to actions taken in the year previous to the survey. It would be useful to know if spending on one's home is, or was, variable over the past five years and why. These issues are sometimes addressed through household diaries (see Morduch and Schneider 2017). Even so, this type of research is rarely comparative and of sufficient size and scope to allow for the type of econometric analysis deployed in this paper. These issues are addressed in the conclusion.

answers were framed in terms of their place in the national distribution of household income.

These variables represent the life-cycle model of home ownership where the expected sign on age was positive, the expected sign on age squared was negative since home ownership tends to decline with advancing age, the expected sign on gender was negative, the expected sign on employment status was positive, and the expected sign on income was positive. The effect of financial competence and the effect of risk-tolerance on making home expenditures were also expected to be positive. This model was estimated over the entire database where 2945 respondents answered in the affirmative—having made home-related expenditures in the previous year.

Three forms of the model are reported in Table 1 beginning with the key components of the life-cycle model, an augmented model including gender and competence, and the final model including all independent variables including risk tolerance. The results of the pooled model were consistent with the key components of the life-cycle model of homeownership including age, age squared, having a full-time job, and income. The largest parameter estimates were found for age and age squared. Gender was not significant. Nor was financial competence. The most significant independent variables were income and risk-taking.

It is arguable that a higher income allows for greater risk-taking in that any loss can be made up through earned income and/or more effective risk management strategies including using a portfolio approach in household spending and saving (spreading the risks involved in holding different kinds of financial products and instruments; see Clark et al. 2012). It is also arguable that income and financial competence are closely related such that a higher income is associated with more experience with a range of financial concepts and instruments. By contrast, those on lower incomes have less experience of these types of products and are more vulnerable given their lack of competence. The significance of Lusardi and Mitchell's original three factor model of financial literacy was not found to be statistically significant.

The explanatory value of the three models presented in Table 1 was not particularly powerful. This suggests that there were omitted variables and that the suite of independent variables was not wholly adequate to predict home-related expenditure notwithstanding the substantiation of the life-cycle model of homeownership. For example, it could be the case that the tax benefits associated with home-related expenditure, in some countries more than others, make an appreciable difference to year-to-year home expenditure. Other factors such as recent and expected returns on home-related expenditures, the

**Table 1:** Home-related expenditure and individual attributes

| Variables | (1) Model 1 | (2) Model 2 | (3) Model 3 |
|---|---|---|---|
| Age | 1.342** (0.593) | 1.354** (0.593) | 1.426** (0.584) |
| Age$^2$ | −1.639** (0.700) | −1.664** (0.697) | −1.709** (0.693) |
| Gender (Female) | | 0.012 (0.014) | 0.018 (0.014) |
| Full time job | 0.032** (0.012) | 0.032** (0.011) | 0.031** (0.011) |
| Income level | 0.018*** (0.003) | 0.017*** (0.004) | 0.016*** (0.003) |
| Competence | | 0.023 (0.014) | 0.022 (0.015) |
| Risk taking | | | 0.018*** (0.003) |
| Constant | −0.115 (0.113) | −0.141 (0.106) | −0.206* (0.100) |
| Country Dummies | Yes | Yes | Yes |
| Observations | 10,943 | 10,943 | 10,943 |
| R-squared | 0.031 | 0.031 | 0.033 |

This table reports the estimates of linear probability models for the pooled sample of jurisdictions. Standard errors clustered at the jurisdictional level are reported in parentheses and jurisdictional dummies are included. The dependent variable is a binary indicator taking value of 1 if the respondent reported having made home-related expenditures in the previous year and 0 otherwise. Independent variables include age, age squared, the respondent's household income level, gender and employment status. Risk-taking is continuous across the 5 answer options. Competence is a binary indicator taking the value 1 if the respondent was able to correctly answer the compound interest question in Lusardi and Mitchell's (2011) test of financial literacy. Standard errors clustered at the jurisdiction level are in parentheses where *** p<0.01, ** p<0.05, * p<0.1.

changing cost of homeownership including mortgage rates, and the expected value of homeownership compared to other financial options could be important.

## Regime-specific Models

There has been extensive commentary in the academic literature on the existence (or otherwise) of various forms of capitalism (Hall and Soskice 2001), the persistence of distinctive types of political and welfare systems (Iversen and Soskice 2019), and the dominance of Anglo-American

norms in global finance (Clark and Wójcik 2007; Pistor 2019). In some cases, these commentaries are based upon analytical distinctions rather than empirical analysis. Here, it was hypothesized there are significant differences between Anglo-American jurisdictions and European countries in their financial systems and structures such that these differences can be seen in the relative importance of competence and risk tolerance.[9]

The model was estimated combining Australia, Hong Kong, the UK and the USA and a separate model was estimated combining Germany, Italy, Spain, and Switzerland. These two sets of jurisdictions can be thought to represent different social systems of well-being, employment, and the role of government. This is a relatively crude characterisation and classification. Recent research suggests that some European countries have adopted elements of Anglo-American financialisation even if convergence is less apparent than shared policies and practices (see Ward et al. 2019). In any event, there is little in the way of guidance in the literature on how best to represent country-specific regimes of governance and public policy and how test for similarities and differences in observed behaviour.

In Table 2, the results for both models are presented. For the Anglo-American jurisdictions, the most significant variable was income and the second significant variable was risk-taking.[10] Note, competence was not found to be significant for the Anglo-Saxon and the European cases. The shared effects of income and risk-taking on home-related expenditures were consistent with findings to the effect that a higher income allows for, or encourages, risk-taking in the sense that people in these circumstances take the risks they can afford. With respect to home-related expenditure, the significance of risk-tolerance suggests that respondents in these jurisdictions treat their home as a financial asset as well as a service.

Since risk-taking was also significant for the European group of countries, it is probable that the home is treated

**Table 2:** Home-related expenditure and individual attributes by regime

| Variables | (1) Australia, UK USA, HK | (2) Germany, Spain, Italy, Switzerland |
|---|---|---|
| Age | 1.323 (1.100) | 0.525 (0.924) |
| Age$^2$ | −1.435 (1.292) | −0.746 (1.054) |
| Gender (Female) | 0.013 (0.030) | 0.035* (0.013) |
| Income level | 0.020*** (0.002) | 0.011 (0.010) |
| Full time job | 0.023 (0.026) | 0.024 (0.013) |
| Competence | 0.011 (0.030) | 0.025 (0.029) |
| Risk taking | 0.024** (0.005) | 0.015** (0.003) |
| Constant | −0.239 (0.180) | −0.067 (0.200) |
| Country Dummies | Yes | Yes |
| Observations | 4,165 | 3,940 |
| R-squared | 0.029 | 0.030 |

This table reports the estimates of linear probability models for regimes. Jurisdiction-specific observations were pooled according to their regime. The first column reports combined estimates for the four Anglo-American jurisdictions. In the second column, the estimates for the four European jurisdictions are reported. Standard errors clustered at the jurisdiction level are reported in parentheses and jurisdiction dummies are included. The dependent variable is a binary indicator taking value of 1 if the respondent reported having made home-related expenditures in the previous year and 0 otherwise. Independent variables include age, age squared, the respondent's income level, gender and employment status. Risk-taking is continuous across the 5 answer options. Competence is a binary indicator taking the value 1 if the respondent was able to correctly answer the compound interest question in Lusardi and Mitchell's (2011) test of financial literacy. Standard errors clustered at the jurisdiction level are in parentheses where *** p<0.01, ** p<0.05, * p<0.1

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**9** Institutional differences between countries and groups of countries persist notwithstanding the forces of globalisation and financial integration (Bathelt and Glückler 2011). For Pistor (2019), this is important for financial market structure and performance given the opportunities for arbitrage between competing regulatory regimes. She is also sensitive to within-regime differences in financial regulation; witness her analysis of the ways in which Lehman Bros exposed gaps in financial regulation linking the UK and the USA.
**10** When the Anglo-American model was re-estimated excluding Hong Kong, income was strongly significant, but risk tolerance was less significant. Including Hong Kong strengthens the Anglo-American effect. The same result was obtained excluding and including Switzerland from the European model.

as a financial asset across both regimes notwithstanding the lack of significance of income in the second instance. Surprisingly, it was found that gender was modestly statistically significant for the European regime but not for the Anglo-American regime. This result holds even when Switzerland was excluded from the analysis. How and why this is the case requires further research both quantitative and qualitative. It could reflect, for example, the

allocation of responsibilities within households and who (male or female) holds title to property. Elsewhere, it has been shown that the 'household' is often a highly relevant factor in explaining individual savings behaviour (Clark et al. 2012).

## Jurisdiction-specific Models

Extending the analysis to jurisdiction-specific effects, the base model including all variables was estimated for each of the 11 jurisdictions. Table 3 summarises the econometric results by jurisdiction and independent variables. The explanatory power of the base model was weak for most jurisdictions. Nonetheless, there were distinctive differences pointing to the possible existence of shared and country-specific factors either unobserved or embedded in the relationship between financial markets, housing, and individual well-being.

For Australia, income and risk-tolerance were highly significant with the expected signs. These results were matched in the USA along with two other factors – having a full-time job (positive) and being financially competent (positive). In the UK, income was also statistically significant along with gender and age squared. Specifically, being male was more likely associated with home-related expenditure while being older had the effect of being less likely to spend on home related issues (as expected). For Hong Kong, age, age squared, and gender had the expected signs and significance. In this case, however, financial competence was modestly associated with *not* spending on one's home – a finding possibly indicative of a level of pessimism regarding respondents' expectations of the future value of housing (and Hong Kong's political future).

Like a number of countries, in Germany and Switzerland there were significant and positive income and risk-related effects while Switzerland was found to have expected signs on age and age squared. For Italy, financial competence was strongly and significantly associated with home-related expenditure. For Spain, gender and having a full-time job were modestly statistically significant. Age, age-squared and gender are associated with owning a home in many jurisdictions (OECD 2019). These variables were less significant when explaining home-related spending by jurisdiction. More important were having a higher income and being in full-time employment; as noted above, separately and together these factors *enable* home-related expenditure over the short-term and long-term.

For Brazil, it was found that age, age squared, income, and risk-taking were modestly significant. For Malaysia, age, age squared, income, and having a full-time job were

significant whereas neither risk nor competence were significant. For Mexico, only gender was weakly significant. By jurisdiction, risk tolerance and competence were not as important as earning a living. Their significance in developed market economies is perhaps indicative of the relative sophistication of both sides of the market for financial products and services. The significance of competence in these jurisdictions could also be indicative of the skills required to be effective financial decision-makers in challenging market conditions (the conduct and performance of the local financial services industry).

# Implications and Conclusions

Given the reach of financial institutions and markets into everyday life, and persistent differences between jurisdictions in the nature and significance of housing markets, the goal of this paper was to identify and calibrate the influence of financial factors on individuals' home-related expenditures. This goal is challenging, in part, because what counts as "financial factors" varies across jurisdictions and between groups of jurisdictions. Here, our focus was on the significance of two key behavioural attributes and/or responses to the relationship between finance and housing–financial competence and risk tolerance.

Home-related expenditure was cast in terms of competing claims on survey respondents' disposable income. As such, a dynamic element is embedded in the dependent variable which is dampened or missing in some studies that link rates of homeownership with financial markets. Given that financial institutions and markets affect, in some jurisdictions more than others, the current and expected value of a home we sought to represent the influence of these factors through two key behavioural variables – respondents' financial competence and risk tolerance. It was hypothesised that those investing in housing on a year-to-year basis are relatively risk tolerant and financially competent. In the pooled econometric model, risk-taking was found to be statistically significant but not financial competence.

Respondents' age, age squared, and income were found to be highly significant representing, in effect, the widely-accepted life-cycle model of housing consumption. Also notable was the significance of full-time employment and income as well as risk tolerance. For the entire sample, it appears that respondents' level of income (higher than lower) is modestly related with their risk tolerance (higher than lower). When the model was estimated for each jurisdiction there were considerable variations in both the

**Table 3:** Home-related expenditure and individual attributes for each jurisdiction

| Variables | (1) Australia | (2) Brazil | (3) Germany | (4) Hong Kong | (5) Italy | (6) Malaysia | (7) Mexico | (8) Spain | (9) UK | (10) Switzerland | (11) USA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Age | 1.625 (1.285) | 2.495* (1.479) | 0.461 (1.176) | 3.155** (1.319) | 1.450 (1.428) | 3.834** (1.569) | 1.803 (1.270) | -1.883 (1.271) | 1.887 (1.149) | 1.800* (1.048) | -2.266 (1.400) |
| $Age^2$ | -1.575 (1.496) | -3.128* (1.799) | -0.263 (1.367) | -3.636** (1.643) | -2.062 (1.651) | -4.549** (1.987) | -2.419 (1.531) | 1.832 (1.491) | -2.361* (1.342) | -2.176* (1.239) | 2.640 (1.617) |
| Gender (Female) | 0.000 (0.030) | -0.017 (0.033) | 0.039 (0.026) | -0.052* (0.027) | 0.029 (0.029) | -0.034 (0.030) | 0.049* (0.029) | 0.059** (0.027) | 0.082*** (0.025) | 0.001 (0.025) | 0.006 (0.028) |
| Income level | 0.021*** (0.005) | 0.020* (0.012) | 0.040*** (0.007) | 0.012 (0.008) | -0.003 (0.007) | 0.012** (0.005) | 0.005 (0.012) | -0.008 (0.007) | 0.024*** (0.006) | 0.017*** (0.005) | 0.018*** (0.005) |
| Full time job | 0.037 (0.031) | 0.009 (0.033) | -0.018 (0.028) | 0.046 (0.047) | 0.029 (0.031) | 0.115*** (0.039) | 0.048 (0.030) | 0.060** (0.030) | -0.028 (0.028) | 0.015 (0.025) | 0.070** (0.031) |
| Competence | 0.042 (0.031) | 0.043 (0.033) | -0.010 (0.028) | -0.055* (0.028) | 0.101*** (0.031) | 0.037 (0.035) | 0.015 (0.031) | 0.028 (0.028) | 0.004 (0.027) | -0.025 (0.024) | 0.076** (0.030) |
| Risk taking | 0.026** (0.013) | 0.019* (0.011) | 0.019* (0.011) | 0.015 (0.013) | 0.008 (0.012) | 0.011 (0.013) | 0.008 (0.011) | 0.012 (0.011) | 0.015 (0.011) | 0.021** (0.010) | 0.036*** (0.013) |
| Constant | -0.359 (0.272) | -0.268 (0.304) | -0.246 (0.250) | -0.470* (0.261) | -0.060 (0.309) | -0.588* (0.308) | -0.207 (0.266) | 0.542** (0.267) | -0.391 (0.242) | -0.335 (0.222) | 0.432 (0.302) |
| Observations | 935 | 857 | 1,005 | 1,018 | 992 | 1,009 | 972 | 1,015 | 1,190 | 928 | 1,022 |
| R-squared | 0.047 | 0.016 | 0.045 | 0.021 | 0.020 | 0.030 | 0.012 | 0.018 | 0.031 | 0.027 | 0.061 |

This table reports country-specific linear probability models. The dependent variable is a binary indicator taking value of 1 if the respondent reported having made home-related expenditures and 0 otherwise. Independent variables include age, age squared, the respondent's income level, gender and employment status. Risk taking is continuous across the 5 answer options. Competence is a binary indicator taking the value 1 if the respondent was able to correctly answer the compound interest question in Lusardi and Mitchell's (2011) test of financial literacy. Standard errors clustered at the country level are in parentheses where *** p<0.01, ** p<0.05, * p<0.1

significance of the control variables and in terms of the significance of risk tolerance and financial competence. The former was significant in 5 of the 11 jurisdictions while competence was significant in 3 of the 11 jurisdictions. Income was again significant and important in 7 of the 11 jurisdictions.

The existence of regime-effects was tested, comparing 4 Anglo-American jurisdictions with 4 European countries thereby representing the hypothesis that the former are deeply embedded in financial markets while the later have maintained a certain distance from financial markets perhaps consistent with post-Second World War social contracts (see Esping-Anderson 1999). Regime-effects were found by estimating an econometric model for each group of jurisdictions and comparing the estimated parameters' significance and signs. The results suggest that there are differences between these two sets of jurisdictions on the significance attributed to risk tolerance by respondents from Anglo-American jurisdictions. But the statistical evidence was not entirely compelling.

The pooled econometric model was robust and carries significant implications for year-to-year home-related expenditures. To the extent a person's earned income varies year-to-year along with their employment contract there are likely to be variations in year-to-year home-related expenditures even if some components are contractual obligations (e. g. mortgages) while other kinds of home-related expenditures are notionally discretionary. When it comes to investing in the current and expected value of one's home, these two factors are important but variable in significance across jurisdictions. As such, individual behaviour is mediated by jurisdiction-specific policies and practices and, more broadly, by the degree to which financial markets envelope individual decision-making in key aspects of individual and household well-being.

It should be acknowledged that this research is cross-sectional rather than longitudinal and lacks a comprehensive assessment of jurisdiction-specific decision variables such as tax incentives and policies. The results of the country-specific econometric models should also be viewed with caution given that the estimated models are deliberately partial and focused upon financial competence and risk tolerance, two issues that can be thought to represent the influence of financialisation. More generally, we should also acknowledge that the robustness of the estimated models depends upon the numbers of observations – a factor which may affect the jurisdiction-specific results more than the regime models and the pooled econometric model.

The results of this paper suggest three lines for future research. First, it has been demonstrated that the deci-

sion to make home-related expenditures is a contingent decision based upon competing claims on a person's disposable income. Not surprisingly, respondents' income and employment status came out as significant explanatory variables. That is, the decision to make home-related expenditure is likely contingent upon meeting other pressing monthly claims on disposable income. Focus upon this type of decision-making may be a fruitful way of understanding, for example, evolving patterns of jurisdiction-specific welfare and inequality especially in circumstances where housing is more-or-less incorporated into financial markets and arbitrage.

It is notable that the years 2015 and 2016 came after the global financial crisis and the Euro crisis and were years of gathering economic growth in OECD countries and beyond. To the extent that decisions on home-related expenditures are conditioned by respondents' immediate circumstances and their expectations of the future are context-dependent it is not surprising that there appears to have been less of a premium on financial competence than might have been expected. If respondents were in more challenging economic and financial circumstances (e. g. COVID 19), the premium on financial competence could be meaningful for those making home-related expenditure decisions. A second avenue for research would be to focus upon the contingency of financial decision-making.

Whereas this paper relied upon representative sample surveys for each jurisdiction, more fine-grained analysis focused upon income groups may well be just as revealing. In doing so, researchers may be able to identify how public policies such as subsidies, tax rebates, and inducements to bring forward home improvements can alter people's understanding the costs and benefits of homeownership and the value-for-money embedded in on-going commitments. This area of research need not be reliant upon large-scale, multijurisdictional surveys. Rather, with appropriate protocols and design features, experiments could be used to test the impacts of different types of policy instruments on individuals' home-related expenditures. The results of this paper suggest that this type of experimentation would also need to be designed to be sensitive to context-specific institutions and norms.

# Appendix A: Pairwise correlations with significance levels of key variables

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|---|---|---|---|---|---|---|
| (1) Home exp | 1.00 | | | | | | |
| (2) Gender | 0.00<br>0.75 | 1.00 | | | | | |
| (3) Age | −0.03<br>0.00 | −0.03<br>0.00 | 1.00 | | | | |
| (4) Full time job | 0.06<br>0.00 | −0.16<br>0.00 | −0.14<br>0.00 | 1.00 | | | |
| (5) Competence | 0.04<br>0.00 | −0.06<br>0.00 | 0.07<br>0.00 | 0.02<br>0.01 | 1.00 | | |
| (6) Risk taking | 0.09<br>0.00 | −0.14<br>0.00 | −0.20<br>0.00 | 0.14<br>0.00 | 0.04<br>0.00 | 1.00 | |
| (7) Income level | 0.10<br>0.00 | −0.01<br>0.14 | −0.07<br>0.00 | 0.30<br>0.00 | 0.11<br>0.00 | 0.22<br>0.00 | 1.00 |

*Note:* This table reports the Pearson's correlation coefficients and related p-values across all regressors included in the analysis reported in this paper.

# Appendix B: Descriptive statistics of key variables

| Variable | Obs. | Mean | Std.Dev. | Min | Max |
|---|---|---|---|---|---|
| Home-exp | 10943 | 0.258 | 0.437 | 0 | 1 |
| Gender | 10943 | 1.51 | 0.5 | 1 | 2 |
| Age | 10943 | 41.015 | 9.985 | 25 | 60 |
| Full time job | 10943 | 0.655 | 0.475 | 0 | 1 |
| Competence | 10943 | 0.671 | 0.47 | 0 | 1 |
| Risk taking | 10943 | 2.681 | 1.272 | 1 | 5 |
| Income level | 10943 | 5.248 | 2.701 | 1 | 11 |

*Note:* This table reports summary statistics for all variables included in the analysis reported in this paper.

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