The Effect of Wealth on Consumption Expenditures: Cross Country and Cross Socio-Demographic Group Comparisons

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1. Introduction*

The link between wealth and consumption (wealth effect) has been of interest to economists for decades, but the late 1990s mark the beginning of renewed interest in this literature. This renewal of interest was caused by the dramatic increases in stock values during economic expansion of the late 1990s. It was more recently fueled by the appreciation in house prices in the U.S. and many other industrialized countries. The issue is of particular interest for monetary and fiscal authorities, as the sensitivity of spending to wealth changes matters to the transmission mechanism of monetary policy, as well as for the setting of tax codes.[1]

Disaggregating wealth effects across households proves appropriate, as demographic changes are taking place around the globe. Population aging and decreasing fertility may lead to changes in aggregate demand and changes in the overall response of aggregate consumption to changes in aggregate wealth. If the wealth effect varies by age groups, then the importance

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[1] One of the early discussions on the wealth channel in monetary policy literature can be found in Keynes' *General Theory*. Later examples include de Leeuw and Gramlich 1969, Modigliani [1971] and Ludvigson, Steindel and Lettau [2002].

of the wealth channel of monetary policy might change, being fueled by the aforementioned demographic changes.[2]

Past empirical evidence has found age differences in consumption patterns in some countries (e.g. Hurd and Rohwedder [2005], Lehnert [2004], Hoynes and McFadden [1994], Venti and Wise [2001]), we compare the variation in the two wealth effects with the age of the household's head. Additionally, we take advantage of the fact that our data set is rich in details on demographic characteristics of the household by considering what effects does the gender of the household's head and household composition have on the wealth effect. Our paper contributes to the literature in several ways. First, we examine the wealth effect across socio-demographic groups. Previous literature has looked at the heterogeneity of the wealth effect by age and we also discussed the differences in wealth effects by family composition and gender. [3] Second, our analysis is among the first to be based on cross-country harmonized microdata (using the Luxembourg Wealth Study). Microdata has been argued to be a better alternative to aggregate data (a more detailed discussion on the potential problems with using aggregate data to study wealth effects can be found later in this paper.) Lastly, we distinguish between housing wealth and financial wealth[4]. At its early stages the literature did not address differences between different types of wealth, meanwhile many authors point out that in reality, consumption responses to changes in different types of wealth could differ (see, for example, Boone and Girouard [2002], Bostic et al. [2005], Carroll [2004], Case et al. [2001], Pichette and Tremblay [2003], Poterba and Samwick [1995]).

The paper begins with an overview of the existing empirical evidence and the theoretical background of our work. The next two sections outline methodological issues and data. Section 6 shows results of our empirical investigation of differences in wealth effects for the two types of wealth across countries and across different households. Section 7 concludes.

2. Theoretical Background and Relevant Literature

Consumption Function Arising from a Standard Life-Cycle Model

The solution to a life-cycle model (see, for instance, Modigliani and Brumberg [1957]) shows that current consumption linearly depends on current (labor) income, average income expected over the earning span, and current as-

[2] Some disagreement exists about the current importance of wealth channel of monetary policy. While many believe that the channel is important, some researchers disagree (see, for example, Ludvigson et al. [2002]).

[3] Some work has been done on assessing the magnitude of the wealth effect out of housing wealth among the elderly in the US (see Venti and Wise [2001]).

[4] One could also discuss differences between different types of financial wealth, such as stock holdings versus pensions or thrift plan holdings, for instance. Such comparison, however, is beyond the scope of this study.

set holding. One important feature of the model is that it suggests that MPC out of wealth increases with the age of the consumer.

This basic life cycle model does not differentiate between marginal propensities to consume out of different types of wealth—it assumes the same MPC out of any type of wealth. Additionally, it does not allow for capital market imperfections or for information asymmetry. Thus, it cannot be used to answer questions about the influence of liquidity constraints, imperfect information, and transaction costs on the timing and magnitude of the marginal propensity to consume out of wealth [Belsky and Prakken 2004].

While a formal modeling of these differences has yet to be developed, many empirical investigations have separated wealth into different sub-categories and some have found statistically significant differences in marginal propensities to consume out of different types of wealth. Importantly, this is recognized by policymakers, as suggested by the fact that the current version of the model used by the Board of Governors of the Federal Reserve System in the U.S. separates wealth into equity wealth, housing wealth, and the value of non-corporate business and other net financial assets [Gramlich 2002].

Possible Reasons Behind Differences in MPCs out of Different Types of Wealth

Although standard theories used to analyze the connection between consumption and wealth (the permanent income hypothesis of Friedman 1957 and Ando and Modigliani's 1963 life-cycle model) do not distinguish between different types of wealth, there are several reasons for expecting a difference in the effects of changes in housing wealth and financial wealth on consumption[5]. To begin with, one ought to remember that housing is both an asset and a consumption item. Increases in house prices may indeed lead to an increase in one's wealth, but they also lead to higher cost of housing services. Thus, an increase in relative house price does not necessarily lead to a household's increased ability to consume more other goods and services. This argument would lead a researcher to expect a lower marginal propensity to consume from housing wealth than from financial wealth. On the other hand, households can realize some of the equity by moving to cheaper quarters or by assuming greater debt backed by the wealth of their house.

The literature suggests that agents' awareness of changes in these two types of wealth may differ [Dvornak and Kohler 2003, Case et al. 2001]. There is no consensus among authors about which types of wealth is more "tractable." Some argue that it may be easier to find information on current financial wealth than on current real estate wealth. This argument arises from the fact that houses are less homogenous and are less frequently traded than shares [Dvornak and Kohler 2003]. Taking this into consideration, an increase in financial wealth might lead to a larger increase in consumption

[5] This discussion borrows from Case et al. [2001] and Pichette and Tremblay [2003].

than an equivalent increase in housing wealth. In contrast, it has been suggested that during 1989–1995 in the U.S. there seemed to have been a trend away from direct ownership of corporate stock and toward ownership through financial intermediaries [Poterba and Samwick 1995]. Those who own stock indirectly might be less aware of the current value of their portfolio then direct stock owners. Additionally, the value of one's current housing wealth could be found by simply walking around one's neighborhood and picking up flyers that are usually available in front of houses for sale, or by checking property prices at a real estate agency or online.

Housing wealth and financial wealth also differ in liquidity. Housing wealth tends to be viewed as less liquid than financial wealth [Dvornak and Kohler 2003]. It may be difficult to liquidate just a part of one's house (this is why housing is often referred to as a "lumpy" asset), whereas liquidating a small portion of one's financial wealth has relatively low costs. From this standpoint, we would expect to see a higher marginal propensity to consume out of financial wealth than out of housing wealth.[6] Having said this, it is reasonable to assume that the relative degree of liquidity of housing wealth and financial wealth differs across countries according to the differences in financial market development.

It has been proposed that households view changes in housing wealth as more permanent than changes in financial wealth [Pichette and Tremblay 2003]. Given this fact, one would expect households to be more willing to increase their consumption following an increase in housing wealth than an increase in financial wealth.

Lastly, it has been mentioned that households put different types of wealth into different "mental accounts", therefore, view changes in the value of some assets as more appropriate to use for current consumption than others [Shefrin and Thaler 1988, Shiller 2004]. Yet, if households perceive changes in housing wealth to be more appropriate for long-term savings, we would expect to see a higher MPC out of financial wealth.

The above discussion shows that there are neither strong empirical nor theoretical reasons to expect wealth effect out of one type of wealth to be greater than that out of the other types of wealth. Thus, the issue must be solved on empirical grounds.

Macroeconomic Evidence

In the last decade, several studies used macroeconomic data to address this question. Some of those studies do suggest that consumption reacts dif-

[6] Of course, the differences in liquidity in the two types of wealth are greatly mitigated by increased ease of using property as collateral in many countries. Yet, it seems that although home equity loans are increasingly easier to obtain, housing wealth remains to be less liquid than financial wealth.

ferently to changes in housing and financial wealth. A summary of empirical results reviewed by the authors can be found in Table A.1.

The results on relative sizes of wealth effects are mixed. In the U.S. and Canada, the estimated wealth effect out of housing wealth exceeds that out of financial wealth [Davis and Palumbo 2001, Carroll 2005, Pichette and Tremblay 2003]. However, there is no consensus on the significance of these differences. In the Davis and Palumbo [2001] study, the difference between wealth, effects is significant. Yet, Carroll [2004] pointed out that their results may be biased due to the implicit assumption of a constant saving rate and a real interest rate over time. Using an alternative technique for estimating the wealth effect, Carroll also found a higher wealth effect out of housing wealth although, the difference between marginal propensities to consume out of the two types of wealth was not statistically significant.

The lack of variation in aggregate house prices makes it difficult to precisely estimate the wealth effect out of housing wealth [Carroll 2004, Dolmas 2003][7]. Movements in asset prices are likely to be endogenous as they can be affected by many factors that also affect consumption decisions ("most notably, overall macroeconomic prospects," states Carroll [2004]).

Some empirical investigations address this issue by using international or regional data. For example, Case, Quigley and Schiller [2001], use U.S. state-level data and find results qualitatively similar to Davis and Palumbo [2001]. The magnitude of wealth effects in their study, however, is quite high in comparison to other studies. In Australia, Dvornak and Kohler [2003] also used state-level data and found results to be opposite to those for the U.S.: financial wealth effect turned out stronger than housing wealth effect.

Additionally, macro datasets are typically not as rich in detail as the micro sets, which limits one's ability to gain insight into wealth effects. For example, aggregate data usually does not allow a researcher to distinguish between the effects of wealth on different types of expenditures (most importantly, durable vs. non-durable expenditures). Such a distinction might be important. Many studies tend to focus on non-durable consumption, because conventional consumption theories apply to the flow of consumption. However, Mehra [2001] pointed out that total consumption ought to be used for investigating the link between consumption and wealth: stock market crashes are more likely to cause a delay in durable consumption while the fall in non-durable consumption might be negligible (see Romer [1990]). In addition, macro datasets do not allow one to investigate the influence of demo-

[7] Using macroeconomic or even regional data to estimate the effect of changes in wealth on consumption may yield results that are subject to serious biases. Carroll [2004] points out that the main problem with these results is the fact that movements in wealth are not exogenous fluctuations—many factors that affect wealth also affect consumption decisions. Dolmas [2003] showed that even under the assumption of exogenous wealth serious problems may arise if researchers choose to estimate a single-equation estimation of aggregate consumption function using macroeconomic data.

graphic and socio-economic characteristics of households on the magnitude of the wealth effect.

Microeconomic Evidence

This study uses microeconomic data to investigate the effect of changes in housing and financial wealth on consumption. There haven't been many studies using microdata to address the link between housing wealth and savings. Most of them do not distinguish between different types of wealth (see Table A.1), are single-country studies, and are not fully comparable. For example, Hoynes and McFadden [1994] examine housing and non-housing saving rates and find no evidence that households in the US adjust their non-housing saving in response to expectations about capital gains in housing. Disney et al. [2003] estimate the effect of unanticipated housing gains on active savings for the UK and find average MPCs from real housing gains to be between .09 and .14 over the period 1993 to 2001, but do not look at financial assets. Campbell and Cocco [2005] also use micro data for the UK, and examine the effect of house prices on consumption. They find the largest effect for elderly homeowners. Bover [2005] examines the patterns of wealth effects on consumption in Spain and finds a stronger effect of housing for prime-age adults and an insignificant financial effect. Grant and Peltonen [2005] find a negligible effect of housing wealth on consumption in Italy, but do not examine the effect out of financial wealth.

3. Empirical Specification and Methods

We take the consumption function of the basic life-cycle model as the basis for our empirical model. However, we make several modifications. First, we separate wealth into financial and housing components. Second, we allow for consumption sensitivity to be different across the two wealth groups. Lastly, we add several explanatory variables that are likely to affect one's consumption decision in addition to different types of wealth. The general econometric specification that forms the basis of our estimation is:

$$C = \alpha FW + \beta HW + \delta Y + \sum_{j=0}^{J} \gamma_j O_j \qquad (1)$$

where C stands for consumption, HW stands for housing wealth, FW stands for financial wealth, Y stands for income and O stands for other demographic and socio-economic variables (such as age, age^2, gender, number of children, parental status, marital status, education, place of residence, urban/rural indicator, employment status and others[8]). All monetary variables (consumption, financial and housing wealth, and income) are in logs[9]. We are most in-

[8] E.g. risk defined as the share of stock in financial assets.

[9] Although the solution to the life-cycle model we are trying to test has monetary variables specified in levels, we opted to use the log approximation. Using logs of monetary variables is

terested in comparing α and β. First, we determine the difference between the two and compare them across countries. To examine the robustness of our results, equation (1) is estimated for total household expenditures and non-durable expenditures.

Specification (1) implies that demographic and socio-economic variables affect only the intercept of the consumption function. The next step, is thus to explore whether the effect of wealth on consumption and savings, varies with age, as suggested by the life-cycle model.

We divide the age distribution into six groups (24–34, 35–44, 45–54, 55–64, 65–74, 75+) and construct dummy variables (A_1–A_6) for each age group. The following specification allows for both differential effect of wealth and income on consumption by age groups as well as a potential non-linear effect of housing and financial wealth on consumption.

$$C = \sum_{i=0}^{6}\left[\alpha_i FW{*}A_i + \beta_i HW{*}A_i + \delta_i Y{*}A_i\right] + \sum_{i=1}^{6}\varphi_i A_i + \sum_{j=0}^{J}\gamma_j O_j \qquad (2)$$

In equation (2), α_{i} and β_{i} represent the effect of financial and housing wealth respectively, on consumption for households whose head is in the i age group.

As a third step, using the same methodology, we examine whether wealth effects vary by family type. The family status distinction includes four groups (F_1–F_4): singles, lone-parents, couples without children and couples with children. Other family types are excluded from our analysis. Thus, we estimate the following equation:

$$C = \sum_{i=0}^{4}\left[\alpha_i FW{*}F_i + \beta_i HW{*}F_i + \delta_i Y{*}F_i\right] + \sum_{i=1}^{4}\varphi_i F_i + \sum_{j=0}^{J}\gamma_j O_j \qquad (3)$$

Finally, we estimate gender differences in the wealth effect as follows:

$$C = \alpha FW + \alpha' FW{*}M + \beta HW + \beta' HW{*}M + \delta Y + \delta' Y{*}M + \sum_{j=0}^{J}\gamma_j O_j \qquad (4)$$

where α_i, β_i are the financial and housing effects for males and α', β' are the respective differences in the effect for females.

The above regressions allow us to test for differences across socio-demographic groups within countries. In a panel analysis we would be able to control for time and cohort effects thus singling out pure wealth age effects, which, according to the life-cycle model, should increase with age. Having only cross-sectional data at our disposal we limit our analysis to stating the

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the preferred specification in the consumption literature (see, for instance, Bostic et al. [2006], Dynan and Maki [2001], and Lehnert [2004]). We fear that using specification with levels of monetary variables might pick up differences in average rather than marginal propensity to consume.

differences across ages at a given point in time and comparing them across countries.

In the next step, we compare the differences in wealth effects between countries. By pooling the data and introducing numerous interaction terms we are able to determine whether the differences existing within a country, are significantly different across countries. The formulation for the age-specific wealth effect is as follows:

$$\begin{aligned} C = &\sum_{i=0}^{6}\left[\alpha_i FW*A_i + \beta_i HW*A_i + \delta_i Y*A_i\right] + \\ &+\sum_{i=0}^{6}\left[\alpha'_i FW*A_i*S + \beta'_i HW*A_i*S + \delta'_i Y*A_i*S\right] + \\ &+\sum_{i=1}^{6}\varphi_i A_i + \sum_{i=1}^{6}\varphi'_i A_i*S + \sum_{j=0}^{J}\gamma_j O_j + \sum_{j=0}^{J}\gamma'_j O_j*S + \lambda S \end{aligned} \tag{5}$$

where S is the country fixed effect and α'_i, β'_i, δ'_i, φ'_i, γ'_j are the respective country differences. The family specific wealth effect is presented below:

$$\begin{aligned} C = &\sum_{i=0}^{4}\left[\alpha_i FW*F_i + \beta_i HW*F_i + \delta_i Y*F_i\right] + \\ &+\sum_{i=0}^{4}\left[\alpha'_i FW*F_i*S + \beta'_i HW*F_i*S + \delta'_i Y*F_i*S\right] + \\ &+\sum_{i=1}^{4}\varphi_i F_i + \sum_{i=1}^{6}\varphi'_i F_i*S + \sum_{j=0}^{J}\gamma_j O_j + \sum_{j=0}^{J}\gamma'_j O_j*S + \lambda S \end{aligned} \tag{6}$$

where S is the country fixed effect and α'_i, β'_i, δ'_i, φ'_i, γ'_j are the respective country differences; and the gender equation is as follows

$$\begin{aligned} C = &\alpha' FW + \alpha'' FW*S + \alpha' FW*M + \alpha'' FW*M*S + \\ &\beta HW + \beta'' HW*S + \beta' HW*M + \beta'' HW*M*S + \\ &+\delta Y + \delta'' Y*S + \delta' Y*M + \delta'' Y*M*S + \sum_{j=0}^{J}\gamma_j O_j + \sum_{j=0}^{J}\gamma'_j O_j*S \end{aligned} \tag{7}$$

where S is the country fixed effect and $\alpha'', \alpha'', \beta', \beta'', \delta', \delta'', \gamma', \gamma''$ are the respective country differences compared to specification (4).

Methodological Issues

Even though we use microdata, endogeneity of wealth is a potential problem in equation (1). This fact can arise when current consumption affects current wealth or the way it is reported (reversed causality), or a third factor af-

fects both consumption and wealth, such as unobserved differences in saving behavior (simultaneity) or if wealth is measured with error that is correlated with the error term. We test housing wealth endogeneity directly, conditionaly on valid instruments, using the augmented regression test (Durbin--Wu-Hausman)[10] and find that it is not necessary to use the instrumental variable model as OLS yields consistent estimates[11].

Housing wealth is observed only for homeowners and so it may be argued that it is a nonrandom sample and we need to control for sample-selection bias. Although, we do not believe this to be the case, we estimate our model on the full sample and the sample of homeowners and find the results not to be significantly different. Consequently, we only present estimation results for a sub-sample of homeowners. We also exclude households whose head is 24 years and younger from our analysis.

5. Data

The data used in the analysis comes from the Luxembourg Wealth Study (LWS), a new project that is under development within the larger Luxembourg Income Study (LIS) project. [12] The LWS database contains harmonized wealth data from nine industrialized countries, created for the purpose of conducting cross-country studies (see Sierminska [2005] and Sierminska, Brandolini and Smeeding [2006b], for a detailed description). LWS's careful design facilitates comparative research among wealth, income and expenditure components. Based on the availability of expenditure data in 2006, we have chosen three countries for our analysis: Canada, Finland, and Italy.

The original datasets that the LWS project harmonized include: for Canada, the Survey of Financial Security 1999; for Finland, the Household Wealth Survey 1998; and for Italy: the Survey of Household Income and Wealth (SHIW) 2002.

Total expenditures, our dependent variable, is created by summing the available expenditure components provided by the surveys, while in the nondurable equations we exclude purchases of vehicles, furniture and other equipment. In our estimation the results are similar with respect to the two types of expenditure measures. As a result, we report results for total expenditures. For certain equation specifications, estimation results obtained with non-durables are placed in the Appendix. Remaining results for non-durables are available from the authors.

On the explanatory side we include the wealth and income variables. Wealth or net worth consists of financial assets and non-financial assets net of total debt. Financial assets include deposit accounts, stocks, bonds and mutual funds. Non-financial assets include own principal residence and in-

[10] Davidson and MacKinnon [1993]
[11] Results available upon request. We tested this hypothesis for Finland.
[12] Information on LWS can be found at http://www.lisproject.org/lws.htm.

vestment real estate. Finally, total debt refers to all outstanding loans, both home-secured and non-home secured. Housing wealth refers to non-financial assets net of home-secured debt.

Our income concept refers to adjusted household disposable income (DPI). DPI is the sum of earnings, capital income, private transfers, public social insurance and public social assistance net of taxes and social security contributions. To avoid simultaneity issues we exclude capital income, which includes interests and dividends, rental income, income from savings plans (including annuities from life insurance and individual private pensions), royalties and other property income.[13]

In the analysis that follows, all monetary terms are reported at the household level. In income literature it is standard to adjust income to account for household size by "equivalizing" the data. There is no such standard in wealth literature and approaches vary (Sierminska and Smeeding [2005]). Nevertheless, we equivalize all monetary variables as follows: the adjusted variable equals the unadjusted variable divided by the square root of household size. The use of square root implies assuming an equivalency elasticity of .5 (Buhmann et al. [1988]) and this is the middle point between two theoretical possibilities: no economies of scale and perfect economies of scale within the household.

For comparability, monetary variables are converted to 2002 U.S. dollars by using the 2002 OECD PPP exchange rates and OECD price indices.

Table 1.

Household characteristic by country

	Canada	Finland	Italy
	1999	1998	2002
Male head of household		0.67	0.63
Age	48.63	47.33	56.75
Age groups:			
below 24	0.04	0.04	0.01
24–34	0.18	0.17	0.07
35–44	0.24	0.24	0.17
45–54	0.20	0.27	0.20
55–64	0.13	0.16	0.20
65–74	0.12	0.08	0.19
75+	0.10	0.05	0.15
Less than High School	0.28	0.31	0.65
High School	0.49	0.52	0.27
Bachelors Degree	0.23	0.17	0.08

[13] Capital income does not include capital gains and losses, which are both excluded from the concept of DPI. Imputed rents, and irregular incomes such as lottery winnings and any other lump-sums are also excluded from the concept of DPI. See Niskanen [2006] for the exact definition of DPI in LWS.

	Canada	Finland	Italy
	1999	1998	2002
Children under 18	0.35	0.34	0.25
Married	0.62	0.72	0.66
Parents	0.41	0.49	0.45
Employed	0.76	0.71	0.44
Income	$26,588	$16,251	$13,686
Financial wealth	$32,414	$13,291	$18,908
Housing equity	$59,970	$57,668	$105,982
Risk	0.07	0.19	0.04
Sample size	14,475	3780	8011

Source: Authors' calculations based on the Luxembourg Wealth Study (LWS). Monetary variables are equivalized and in 2002 USD.

The characteristics of the sample are in Table 1. The Italian sample is the oldest, with the highest fraction of married and parent households. Canada has the highest fraction of college educated households, households with young children, employed households, and also the highest earnings. Finland is the country with the highest fraction of households investing in risky assets (stocks). In terms of wealth, we find Italian households to have the greatest holdings held in housing, but the lowest income and low financial wealth. Canada has the highest financial wealth and income. Finland has the lowest wealth regardless of its type.

Table 2.

Household asset participation in percentages

	Canada	Finland	Italy	US
	1999	1998	2002	2001
Net worth (>0)	77	83	89	77
Net worth (=0)	3	2	7	4
Net worth (<0)	20	15	3	19
Total financial assets:	90	92	81	91
Deposit accounts	88	91	81	91
Stocks	11	33	10	21
Mutual Funds	14	3	13	18
Bonds	14	3	14	19
Equity in real estate:	62	67	72	68
Principal residence	60	64	69	68
Investment real estate	16	27	22	17
Total debt	68	52	22	75

	Canada	Finland	Italy	US
	1999	1998	2002	2001
Home secured debt	41	28	10	46
Other financial assets	13	36	3	9
Vehicles	77	66	80	85

Note: Household weights are used.
Source: Authors' calculations based on the Luxembourg Wealth Study (LWS) Beta-version.

Household asset participation in the three countries in comparison to the United States is provided in Table 2. Italy has the highest percentage of those with positive wealth and the lowest with debt holdings. Positive equity in real estate is held by over 60 % of the population in Canada, and around 70 % in Finland and Italy. Financial assets ownership, on the other hand, varies from 81 % in Italy to about 92 % of households in Finland. The riskiness of portfolios (indicated by stock ownership) is relatively high in Finland (33 %) and lower in Canada (11%) and Italy (10%), while mutual fund and bond ownership is preferred by more in Canada (around 14 % for both). Given these differences we find that a majority of wealth (78–85%) is held in real estate and only 15–22 % in financial assets (Table 3). For comparison, in the U.S., these numbers are 62% and 38% respectively, indicating that Canadians and Europeans hold a relatively greater percentage (by 20 percentage points) of their wealth in real estate compared to Americans (See Sierminska, Brandolini, and Smeeding [2006a] for more details on cross-country portfolios differences).

Table 3.

Household portfolio composition (per cent)

	Canada	Finland	Italy	US
	1999	1998	2002	2001
Financial assets (2):	22	16	15	38
Deposit accounts (1)	42	59	56	24
Stocks (1)	30	34	8	34
Mutual Funds (1)	21	4	18	34
Bonds (1)	6 100	3 100	17 100	8 100
Non-financial assets (2):	78	84	85	62
Principal residence	64	64	68	45
Investment real estate	13	20	17	17
Total debt (2)	26	16	4	21
Home secured debt	22	11	2	18

Note: Asset shares are computed as ratio of averages. Household weights are used. (1) Reported as share of financial assets. (2) Reported as share of non-financial and financial assets.
Source: Authors' calculations based on the Luxembourg Wealth Study (LWS) Beta version.

6. Empirical Analysis

Within country differences in the wealth effect

To examine the effect of financial and housing wealth on consumption, we estimate three specifications of equation (1) for each country. First, we exclude all the demographic variables from the list of explanatory variables, and focus on the two measures of wealth and income. This specification is close to the consumption function derived from the simplest version of the life-cycle hypothesis model. The estimation results for this baseline specification are presented in column (1) for each of the three countries considered. Second, we include all the demographic variables from the regression and dummies for net worth quartiles. We include these to account for non-linearities in consumption responses to wealth. In column (2) we exclude income to determine its impact on the wealth effect (3). Lastly, we estimate the equation wit all the controls available and report the results in column (3).

To check the results with respect to the expenditure measure, we obtain estimation results for total expenditures and expenditures on nondurables. Estimation results using total expenditure are reported in table 4 and those using expenditure on non-durables for Finland and Italy are reported in the appendix (no data on non-durables is available for Canada).

Table 4.

OLS estimates of wealth effect (dependent variable: *total* expenditure; standard errors in parenthesis)

	Canada			Finland			Italy		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Fianacial Assets (*FA*)[1]	–0.02*	0.012*	–0.01	0.02*	0.03*	0.02*	0.03*	0.07	0.04*
	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Housing Wealth (HW)*	0.024*	0.165	0.121	0.06*	0.12*	0.10*	0.10*	0.17	0.14*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)	(0.01)
Age 35–44		–0.06*	–0.06*		–0.02	–0.02		0.02	0.04
		(0.02)	(0.02)		(0.03)	(0.03)		(0.04)	(0.03)
Age 45–44		0.22*	–0.21*		–0.02	–0.02		0.06***	0.06***
		(0.03)	(0.03)		(0.03)	(0.03)		(0.04)	(0.03)
Age 55–64		–0.46*	–0.39*		-0.20*	–0.14*		0.06***	–0.01
		(0.03)	(0.03)		(0.04)	(0.04)		(0.04)	(0.03)
Age 65–74		–0.68*	–0.52*		–0.42*	–0.30*		–0.14*	–0.04
		(0.03)	(0.03)		(0.04)	(0.05)		(0.04)	(0.04)
Age 75+		–0.77	–0.55*		–0.58*	–0.43*		–0.24*	–0.11*
		(0.03)	(0.04)		(0.05)	(0.05)		(0.04)	(0.04)

	Canada			Finland			Italy		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Net worth—2nd Quartile		–0.24*	–0.18*		–0.14*	–0.11*		–0.30*	–0.23*
		(0.04)	(0.04)		(0.04)	(0.04)		(0.08)	(0.08)
Net worth—3rd Quartile		–0.48*	–0.37*		–0.21*	–0.17*		–0.36*	–0.29*
		(0.04)	(0.04)		(0.05)	(0.05)		(0.09)	(0.08)
Net worth—4th Quartile		–0.61*	–0.47*		–0.19*	–0.16*		–0.39*	–0.33*
		(0.05)	(0.05)		(0.06)	(0.06)		(0.09)	(0.09)
Male					0.04***	0.03		0.03**	0.01
					(0.02)	(0.02)		(0.02)	(0.02)
High School		0.131*	0.102*		0.08*	0.06*		0.18*	0.10*
		(0.02)	(0.02)		(0.02)	(0.02)		(0.02)	(0.02)
Vocational School		0.136*	0.095*		0.19*	0.15*			
		(0.02)	(0.02)		(0.03)	(0.03)			
Bachelor's Degree		0.393*	0.29*		0.29	0.20*		0.29*	0.14*
		(0.02)	(0.02)		(0.03)	(0.03)		(0.03)	(0.02)
Children under 5*		0.087*	0,152*		–0.04	0.00		–0.09*	–0.04
		(0.03)	(0.03)		(0.03)	(0.03)		(0.03)	(0.03)
Children 5–18*		–0.06**	–0.01		0.01	0.01		–0.15*	–0.06*
		(0.03)	(0.03)		(0.03)	(0.03)		(0.02)	(0.02)
Married		–0.1*	–0.2*		0.14*	0.06*		0.04**	0.03
		(0.02)	(0.02)		(0.02)	(0.02)		(0.02)	(0.02)
Parent		–0.13*	–0.15*		–0.06**	–0.09*		0.05**	–0.01
		(0.03)	(0.03)		(0.03)	(0.03)		(0.02)	(0.02)
Employed						0.10*			0.06*
						(0.03)			(0.02)
Income[1]	0.356*		0.209*	0.39*		0.21*	0.44*		0.36*
	(0.01)		(0.01)	(0.02)		(0.02)	(0.01)		(0.01)
Risk			0.149*			0.09*			0.20*
			(0.03)			(0.03)			(0.05)
Constant	4,913*	7.045*	5.423*	4.87*	8.01*	6.18*	4.08*	7.32*	4.56*
	(0.11)	(0.11)	(0.13)	(0.19)	(0.17)	(0.24)	(0.13)	(0.18)	(0.20)
Adj R-squared	0.13	0.29	0.34	0.19	0.28	0.32	0.30	0.23	0.33
Sample size	8315	8417	8301	2669	2689	2669	4700	4727	4700

Note:
Significance level * –1%, ** –5%, *** –10%.
[1] Variables are in logs.
* The variables indicate the presence of children.

Source: Authors' calculations based on the Luxembourg Wealth Study (LWS).

Estimation results reveal that both current income and demographic variables are important determinants of consumption. In terms of demographic variables, several interesting facts emerge. Consumption falls with age—the coefficients on the dummy for each age group are negative and, in many cases, statistically significant. Thus, on average, each age group spends less than the youngest group (those between 24 and 34 years of age). This result is true for all countries in the sample.

Education level is also an important determinant of expenditures for all countries—consumption rises with education. Having children matters—our estimation results suggest that parents spend more in Canada and Finland, but no conclusive statement can be made about Italy—the results for this country are not robust with respect to equation specification. For Canada and Italy, ages of children also play an important role in determining consumption—households with very young children (ages below 5) have higher expenditures, but the opposite is true for households with children between ages 5 and 18. For Italy, households with children ages 5–18 spend less than average, similarly to Canada.

Next we turn to marital status. Married couples spend more than average in Finland and less in Canada. No conclusive results on the link between marital status and consumption are revealed for Italy—the effect of marital status on consumption is positive, but significance of this result depends on equation specification. Being employed also raises one's consumption in Finland and Italy.

Table 4 shows that the wealth effect out of financial wealth is below that for housing wealth. Consumption elasticity with respect to financial wealth is negligible in Canada; it is about 0.02 in Finland, and 0.04 in Italy. The housing wealth effect is much stronger. A one percent increase in household's housing wealth raises households' expenditure by about 12 percent in Canada, 10 percent in Finland and 13 percent in Italy (see column (3) for each country). Income elasticity of consumption is around 20 percent in Canada and Finland, and about twice as large in Italy. Another result worth noting is that riskiness of one's portfolio (measures as the ratio of stock holdings to bond holdings) has a positive and statistically significant effect on consumption for all the countries investigated.

The fact that housing wealth consumption elasticity is higher than financial wealth consumption elasticity holds with respect to different expenditure measures. The appendix shows elasticities of non-durable expenditures for Finland and Italy. Consumption elasticity with respect to different types of wealth is lower for non-durables than it is for total expenditures, whereas income elasticity of consumption is fairly similar for both expenditure types.

Table 4 does not lend insight into how wealth effects could differ within countries across different groups. Thus, as a next step, we explore within-country differences in age wealth effects.

Wealth effect within countries by age

Table 5 reports estimation results for the specification given by equation (5). Since we are considering three countries, it is possible to do three pair-wise comparisons: Italy vs. Finland, Finland vs. Canada, and Canada vs. Italy. The first, third and fifth columns of Tables 5 and 6 show estimation results for each individual country (these are the white columns in the table). We focus on these columns when discussing within-country results. The second, fourth and sixth columns in these tables report differences between the two countries compared (the second column shows differences between Finland and Italy, the fourth column presents differences between Finland and Canada, and the last column reports differences between Canada and Italy). We focus on those columns in our later discussion of between-country comparisons.

We begin by discussing differences in wealth effect across an age group within each country. Thus, we focus on the first, third and fifth columns of Table 5. The age group is defined by the age of the head of the household. The first row, labeled 'overall' shows the average effect and the following rows are deviations from this average[14]. Consequently, the sum of the age effects is zero. Note that there is no omitted age variable in this specification.

For financial wealth, the significant effects within Canada and Italy indicate that at younger ages[15] the effect is lower than the average and is greatest for those 75 and over. In Finland we do not find significant differences from the mean effect for any age group.

Table 5.

Within and between country differences in the wealth and income effect across age groups
(dependent variable: *total* expenditure; standard errors in parenthesis)

	Italy vs. Finland		Finland vs. Canada		Canada vs. Italy	
	Italy	Difference	Finland	Difference	Canada	Difference
Wealth effects of:						
Financial Assets						
Overall	0.028*	–0.012	0.015**	–0.031*	–0.016*	0.044*
	(0.006)	(0.009)	(0.008)	(0.009)	(0.004)	(0.008)
By Age:						
Age 24–34	–0.045**	0.049**	0.005	0.009	0.013	–0.058**
	(0.019)	(0.024)	(0.018)	(0.020)	(0.009)	(0.025)
Age 35–44	–0.014	0.017	0.001	–0.012	–0.011***	–0.003
	(0.012)	(0.016)	(0.013)	(0.015)	(0.006)	(0.016)

[14] The age specific effects are presented as deviations from the average with the use of constrained regressions (Greene and Seaks [1991]).

[15] Age 24–34 for Italy, and 35–44 for Canada.

	Italy vs. Finland		Finland vs. Canada		Canada vs. Italy	
	Italy	Difference	Finland	Difference	Canada	Difference
Age 45–54	0.003	–0.005	–0.002	–0.006	–0.009	0.012
	(0.011)	(0.015)	(0.012)	(0.014)	(0.006)	(0.015)
Age 55–64	0.021**	–0.20	0.001	–0.022	–0.021*	0.042*
	(0.010)	(0.016)	(0.015)	(0.016)	(0.007)	(0.015)
Age 65–74	0.010	–0.016	–0.005	0.013	0.008	0.003
	(0.010)	(0.018)	(0.019)	(0.021)	(0.008)	(0.015)
Age 75+	0.024***	–0.025	0.001	0.019	0.020**	0.004
	(0.013)	(0.024)	(0.025)	(0.027)	(0.009)	(0.018)
Housing						
Overall	0.080*	–0.003	0.087*	0.019	0.106*	–0.026***
	(0.010)	(0.018)	(0.019)	(0.020)	(0.007)	(0.014)
By Age:						
Age 24–34	–0.062**	–0.013	–0.081*	0.006	–0.075*	0.013
	(0.029)	(0.013)	(0.032)	(0.036)	(0.015)	(0.039)
Age 35–44	–0.016	–0.002	–0.020	–0.056***	–0.076	0.059**
	(0.021)	(0.031)	(0.029)	(0.031)	(0.012)	(0.029)
Age 45–54	0.028	–0.035	–0.011	–0.042	–0.053*	0.082*
	(0.019)	(0.030)	(0.029)	(0.031)	(0.013)	(0.027)
Age 55–64	0.043**	0.042	0.088**	–0.047	0.041*	0.002
	(0.018)	(0.033)	(0.035)	(0.038)	(0.016)	(0.028)
Age 65–74	0.008	0.024	0.034	0.036	0.069*	–0.615**
	(0.018)	(0.045)	(0.051)	(0.054)	(0.017)	(0.028)
Age 75+	–0.001	–0.020	–0.009	0.103***	0.094*	–0.095*
	(0.021)	(0.052)	(0.060)	(0.063)	(0.019)	(0.032)
Income						
Overall	0.369*	–0.152*	0.227*	0.023	0.250*	0.119*
	(0.015)	(0.032)	(0.035)	(0.037)	(0.011)	(0.022)
By Age:						
Age 24–34	0.007	0.072	0.077	0.165***	0.242*	–0.236*
	(0.046)	(0.080)	(0.083)	(0.089)	(0.031)	(0.065)
Age 35–44	–0.053**	–0.002	–0.048*	0.134**	0.086*	–0.139*
	(0.027)	(0.048)	(0.050)	(0.053)	(0.018)	(0.039)
Age 45–54	–0.009	0.075	0.070	–0.063	0.007	–0.017
	(0.028)	(0.047)	(0.047)	(0.051)	(0.018)	(0.039)
Age 55–64	–0.018	–0.069	–0.085***	0.009	–0.077*	0.058
	(0.027)	(0.048)	(0.050)	(0.054)	(0.019)	(0.038)
Age 65–74	0.019	0.080	0.089	–0.203**	–0.114*	0.133*
	(0.029)	(0.076)	(0.088)	(0.091)	(0.023)	(0.042)

	Italy vs. Finland		Finland vs. Canada		Canada vs. Italy	
	Italy	Difference	Finland	Difference	Canada	Difference
Age 75+	0.054	–0.156***	–0.103*	–0.041	–0.144*	0.199*
	(0.035)	(0.092)	(0.106)	(0.110)	(0.027)	(0.051)
Fixed Effects		1.037*		0.978*		0.075
		(0.342)		(0.382)		(0.267)

Note: Significance level * –1%, ** –5%, *** –10%.
* The variables indicate the presence of children.
Source: Authors' calculations based on the Luxembourg Wealth Study (LWS).

This pattern also holds for the housing wealth effect at younger ages. For all three countries, the housing wealth effect is lower for younger age groups. The lowest effect is observed for those between 24–34 in Italy and Finland, and for those between 35–44 in Canada. The housing wealth effect is strongest for those 55–64 in Finland and Italy and those 75 and over in Canada.

The income effect works in the opposite direction with respect to age. It is higher for younger households and declines for older ones. This is especially observed in case of Canada.

Wealth effect within countries by family type and gender

We distinguish four family types: singles, lone-parents (single parents), couples without children, and couples with children. As before, we use the first column for each country in Table 6 (white columns) to investigate within country differences in the wealth effect. We consider the financial wealth effect, housing wealth effect, and income effect on consumption.

Table 6.

Within and between country differences in the wealth and income effect across age groups (dependent variable: *total* expenditure; standard errors in parenthesis)

	Italy vs. Finland		Finland vs. Canada		Canada vs. Italy	
	Italy	Difference	Finland	Difference	Canada	Difference
Wealth effects of:						
Financial Assets						
Overall	0.037**	–0.017	0.020**	–0.035*	–0.014*	0.052*
	(0.017)	(0.017)	(0.008)	(0.009)	(0.004)	(0.019)
Single	–0.008	0.026	0.019	–0.003	0.016**	–0.024
	(0.017)	(0.020)	(0.014)	(0.015)	(0.006)	(0.022)
Lone parent	0.008	–0.014	–0.004	0.009	0.005	0.003
	(0.044)	(0.047)	(0.018)	(0.021)	(0.011)	(0.056)
Couple no children	–0.001	–0.002	–0.004	0.000	–0.004	0.003
	(0.017)	(0.019)	(0.012)	(0.013)	(0.006)	(0.022)

	Italy vs. Finland		Finland vs. Canada		Canada vs. Italy	
	Italy	Difference	Finland	Difference	Canada	Difference
Couple with children	0.000	–0.010	–0.012	–0.006	–0.017*	0.018
	(0.016)	(0.018)	(0.010)	(0.012)	(0.006)	(0.021)
Housing						
Overall	0.064*	0.003	0.072*	0.005	0.077*	–0.013
	(0.022)	(0.026)	(0.019)	(0.020)	(0.009)	(0.028)
Single	0.013	–0.001	0.013	–0.018	–0.005	0.019
	(0.024)	(0.035)	(0.032)	(0.035)	(0.013)	(0.033)
Lone parent	–0.076	0.049	–0.034	0.019	–0.015	–0.062
	(0.062)	(0.071)	(0.042)	(0.047)	(0.021)	(0.080)
Couple no children	0.019	0.009	0.034	–0.006	0.028**	–0.009
	(0.025)	(0.032)	(0.025)	(0.027)	(0.011)	(0.033)
Couple with children	0.043***	–0.057***	–0.012	0.005	–0.008	0.052***
	(0.024)	(0.030)	(0.023)	(0.025)	(0.011)	(0.032)
Income						
Overall	0.315*	–0.114**	0.212	0.051	0.264*	0.052
	(0.038)	(0.047)	(0.034)	(0.037)	(0.014)	(0.049)
Single	0.068***	–0.139**	–0.074	0.047	–0.027	0.096***
	(0.042)	(0.056)	(0.047)	(0.051)	(0.018)	(0.055)
Lone parent	–0.172	0.177	0.002	0.058	0.060**	–0.231***
	(0.110)	(0.128)	(0.083)	(0.090	(0.034)	(0.146)
Couple no children	0.099**	–0.082	0.014	–0.106	–0.092*	0.190*
	(0.042)	(0.054)	(0.043)	(0.046)	(0.017)	(0.055)
Couple with children	0.005	0.044	0.058	0.002	0.060*	–0.055
	(0.040)	(0.053)	(0.043)	(0.046	(0.018)	(0.053)
Fixed Effects		0.657		–1.264*		0.711
		(0.504)		(0.411)		(0.528)

Note: Significance level * –1%, ** –5%, *** –10%.
* Variables indicate the presence of children.
Source: Authors' calculations based on the Luxembourg Wealth Study (LWS).

Significant differences within countries for any type of effect are only found in Canada and Italy. Lone-parents do not exhibit a significantly different wealth effect within countries. For the financial wealth effect, significant within-country differences are found for Canada only. We observe that in Canada the financial wealth effect is higher than the average for singles and lower than average for couples with children.

We then turn to within-country comparisons of the housing wealth effect. The effect is higher than average for couples without children in Italy and couples with no children in Canada.

We also examine whether gender differences exist in the wealth effect in Finland and Italy (the data for gender of household head is not available for Canada). Estimation results are reported in Table 7. In Finland we do not observe any gender differences for wealth effects. In Italy, the women have a significantly lower housing wealth effect than men. When it comes to income effects, we see no gender differences in Italy, but we do see a significantly higher effect for females in Finland. These results also hold for non-durable expenditures.

Table 7.

Gender differences in the marginal propensity to consume out of wealth and income

	Total Expenditures		Non-Durable Expenditures	
	Male	Female Difference	Male	Female Difference
Finland				
Financial Assets	0.016*	0.009	0.008	0.010
	(0.006)	(0.011)	(0.005)	(0.009)
Housing Wealth	0.084*	–0.026	0.068*	–0.025
	(0.013)	(0.022)	(0.010)	(0.018)
Income	0.196*	0.109*	0.201*	0.062**
	(0.021)	(0.039)	(0.017)	(0.032)
Italy				
Financial Assets	0.035*	–0.002	0.029*	0.007
	(0.006)	(0.011)	(0.006)	(0.010)
Housing Wealth	0.108*	–0.041**	0.094*	–0.038**
	(0.012)	(0.019)	(0.011)	(0.018)
Income	0.353*	0.026	0.332*	0.021
	(0.017)	(0.028)	(0.016)	(0.027)

Note: Significance level * –1%, ** –5%, *** –10%.
Source: Authors' calculations based on the Luxembourg Wealth Study (LWS).

Besides comparing within country differences we also examine whether there are between country differences in wealth effects by estimating equations (5)–(7).

Differences in age wealth effect between countries

Looking at the first column for each set of countries in Table 5 we found that among households age differences exist in the wealth effect for the youngest group, those aged 55–64, and those 75 and over. In this section we examine whether these differences are significant across countries. The second column in Table 5 for each set of countries indicates the between country differences in the wealth effect. Significant country differences in the financial

wealth effect for the 25–34 age group exist between Italy and Finland, and Canada and Italy, but not Finland and Canada. Country differences also exist for those aged 55–64 in Canada and Italy.

In terms of the housing wealth effect, we do not find any country differences between Italy and Finland. Differences exist for virtually all age groups for Canada and Italy and for those 35–44 and 75 and over in Finland and Canada. For the income effect, differences between Italy and Finland exist only for ages 75 and over; and the two younger groups and the two older groups between Finland and Canada, and Canada and Italy. For the overall effect we find differences in the financial effect for Finland and Canada, and both the effects between Canada and Italy.

Differences in family and gender wealth effect between countries

Across family types there are no significant country differences in the financial wealth effect (second, fourth and sixth columns in Table 6). For the housing effect, country differences exist for couples with children between Italy and Finland, and Canada and Italy. For the income effect, there are differences for singles in Italy and Finland, and between Canada and Italy for most family types.

Table 8.

Between country differences in the wealth and income effect by gender (dependent variable: total expenditure)

	Italy vs. Finland	
	Italy	Country Difference
Financial Assets	0.035*	–0.020*
	(0.006)	(0.009)
of which: Women	–0.002	0.008
	(0.010)	(0.015)
Housing	0.106*	–0.028
	(0.012)	(0.018)
of which: Women	–0.038*	0.013
	(0.018)	(0.029)
Income	0.353*	–0.167*
	(0.017)	(0.028)
of which: Women	0.019	0.080
	(0.027)	(0.049)

Note: Significance level * –1%, ** –5%, *** –10%.
Source: Authors' calculations based on the Luxembourg Wealth Study (LWS).

7. Conclusions

This study presents empirical evidence to support the claim that the wealth effect out of housing wealth is different from that out of financial wealth. Additionally, wealth effects differ across demographic groups. We find that the overall wealth effect out of housing is stronger than the effect out of financial wealth for all countries in the sample. We find within- and between-country differences in wealth effects. The financial wealth effect for the oldest group (75+) is significantly higher in Canada and Italy. In all three countries, the youngest group (24–34) exhibits a housing wealth effect below the average, while the housing wealth effect for those in 54–64 age group is significantly above average. These results are consistent with the predictions from the standard life-cycle hypothesis.

Within-country differences in the wealth effect for different family types also exist. For instance, singles in Canada have a financial wealth effect that is higher than average. The housing wealth effect is higher for couples with children in Italy and couples without children in Canada. Gender differences in the housing wealth effect exist, but only in Italy.

Additionally, we found some between-country differences in wealth effects. Interestingly, there are no significant differences in financial wealth effect across different age groups for Finland and Canada. Yet, we do find significant differences in wealth effect for the youngest group for Italy and Finland, and for Canada and Italy. For the housing wealth effect, no significant differences for age groups exist for Italy and Finland. However, there are differences for Finland and Canada, and for Canada and Italy. For example, the oldest group (75+) has a stronger wealth effect in Canada than in Finland, and a weaker wealth effect in Italy than in Canada. For family types, financial wealth effects do not differ across countries. The housing wealth effect is different for couples with children, and differences exist in Canada and Finland in comparison to Italy.

In this paper, we made a contribution to literature on wealth effects by showing that there exist within- and between-country differences in two the types of wealth effects using harmonized microdata. We show that, for the countries considered, wealth effects vary with age, across family types and by gender of the head of the household. A fruitful venue for the future research would be to go beyond establishing these differences within and between countries and to investigate some of the causes of these differences.

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Appendix

Table A.1.

Summary of selected previous empirical results

		Wealth		
Study	Parameter	Housing	Financial	Country
Aggregate Data				
Davis & Palumbo [2001]	L.R. MPC	0.08	0.06	U.S.
Pichette & Tremblay [2003]		0.06	0	Canada
Carroll [2004		0.09	0.04	U.S.
Ludwig & Stok [2004]	LR. Elasticity	0	0.023–0.052	panel of 16 OECD countries
Case, Quigley & Schiller [2005]	Elasticity	0.11–0.17	0	panel of 14 developed countries
State-Level Data				
Dvornak & Kohler [2003]	L.R. MPC	0.03	0.06–0.09	Australia
Case, Quigley & Schiller [2005]	Elasticity	0.05–0.09	0.02	U.S.
Household-Level Data				
Disney, Henley & Jevons [2002]	MPC	0.09–0.014	–	U.K.
Lehnert [2004]	Elasticity	0.04–0.05	–	U.S.
Bostic, Gabriel & Painter [2006]		0.06	0.02	U.S.
Bover [2005]	MPC	0.015	–	Spain

Table A.2.

Household characteristic for homeowners by country

	Canada	Finland	Italy
	1999	1998	2002
Male		0.70	0.65
Age	51.31	49.57	57.88
Age Groups:			
Below 24	0.01	0.01	0.00
24–34	0.12	0.12	0.05
35–44	0.25	0.25	0.15
45–54	0.23	0.31	0.21
55–64	0.15	0.19	0.23
65–74	0.14	0.08	0.21
75+	0.10	0.05	0.15
Less than High School	0.26	0.32	0.62
High School	0.48	0.50	0.29
Bachelor's Degree	0.25	0.18	0.09
Children under 18	0.38	0.42	0.24
Married	0.76	0.80	0.71
Parents	0.46	0.54	0.47
Employed	0.78	0.75	0.42
Income	$30,211	$17,236	$14,641
Financial wealth	$44,080	$16,131	$21,319
Housing equity	$89,999	$74,287	$149,733
Risk	0.09	0.21	0.04
Sample Size	9409	2884	5540

Monetary variables are equivalized and in 2002 USD.
Source: Authors' calculations based on the Luxembourg Wealth Study (LWS).

Table A.3.

OLS estimates of wealth effects (dependent variable: *total* expenditure; standard errors in parenthesis)

	Finland			Italy		
	(1)	(2)	(3)	(1)	(2)	(3)
Fianacial Assets	0.01*	0.02*	0.01*	0.03*	0.06	0.03*
	(0.00)	(0.00)	(0.00	(0.00)	(0.01)	(0.01)
Housing Wealth	0.06*	0.09*	0.07*	0.09*	0.16	0.12*
	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)
Age 35–44		–0.03	–0.02		0.05	0.07**
		(0.02)	(0.02)		(0.03)	(0.03)

	Finland			Italy		
	(1)	(2)	(3)	(1)	(2)	(3)
Age 45–44		–0.01	–0.01		0.09*	0.09*
		(0.03)	(0.02)		(0.03)	(0.03)
Age 55–64		–0.17*	–0.13		0.01	0.05
		(0.03)	(0.03)		(0.03)	(0.03)
Age 65–74		–0.32*	–0.22*		–0.06	0.04
		(0.03)	(0.04)		(0.03)	(0.04)
Age 75+		–0.45*	–0.33*		–0.14*	-0.02
		(0.04)	(0.04)		(0.04)	(0.04)
Net worth—2nd Quartile		–0.13*	–0.10*		–0.29*	–.022*
		(0.04)	(0.03)		(0.08)	(0.07)
Net worth—3d Quartile		0.17*	0.14*		–0.34*	–0.28*
		(0.04)	(0.04)		(0.08)	(0.08)
Net worth—4th Quartile		0.15*	–0.12*		–0.36*	–0.31*
		(0.05)	(0.05)		(0.09)	(0.08)
Male		0.03***	0.02		0.02	0.00
		(0.02)	(0.01)		(0.02)	(0.02)
High School		0.05*	0.04**		0.19*	0.12*
		(0.02)	(0.02)		(0.02)	(0.02)
Vocational School		0.19*	0.15*			
		(0.02)	(0.02)			
Bachelor's Degree		0.30*	0.21*		0.29*	0.15
		(0.02)	(0.02)		(0.02)	(0.02)
No. children under 5*		–0.04***	–0.01		–0.08**	–0.03
		(0.02)	(0.02)		(0.03)	(0.03)
No. children 5–18*		0.03	0.03		–0.13*	–0.05**
		(0.02)	(0.02)		(0.02)	(0.02)
Married		0.08*	0.02		0.04**	0.03
		(0.02)	(0.02)		(0.02)	(0.02)
Parent		–0.05**	–0.07*		0.03***	–0.02
		(0.02)	(0.02)		(0.02)	(0.02)
Employed			0.07*			0.05**
			(0.02)			(0.02)
Income[1]	0.35*		0.20*	0.40*		0.34*
	(0.01)		(0.02)	(0.01)		(0.01)
Risk			0.07*			0.17*
			(0.02)			(0.04)
Constant	5.11*	8.25*	6.50*	4.45*	7.46*	4.87*
	(0.16)	(0.14)	(0.19)	(0.13)	(0.17)	(0.19)

	Finland			Italy		
	(1)	(2)	(3)	(1)	(2)	(3)
Adj R-squared	0.22	0.32	0.37	0.28	0.21	0.31
Sample size	2669	2689	2669	4700	4727	4700

Note: Significance level * –1%, ** –5%, *** –10%.
* For Canada the variables indicate the presence of children. For Finland the number of children under 15 and 15–18.
Source: Authors' calculations based on the Luxembourg Wealth Study (LWS).

Abstract This study is a contribution to literature on the impact of wealth on consumption (the wealth effect). We assess within- and between-country differences in the housing and financial wealth effect and analyze these differences according to socio-demographic characteristics. Our interest in separating the wealth effect into two is motivated by increases in housing prices in many industrialized countries. The fact that many developed countries are undergoing demographic changes prompted us to consider the relationship between socio-demographic characteristics and wealth effects. Differences are found in the magnitudes of financial and housing wealth effects by age, gender, as well as family composition of the households in all three countries. This paper reports some of the first findings based on data from a new source, the Luxembourg Wealth Study (LWS), built within the larger Luxembourg Income Study (LIS). LWS is a database containing harmonized wealth micro-datasets from a number of industrialized countries. In our analysis we use data from three countries: Canada, Finland and Italy.