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WEALTH EFFECTS ON CONSUMPTION IN MALTA: EVIDENCE FROM HOUSEHOLD LEVEL DATA

Article published in the Quarterly Review 2020:2, pp. 36-40

BOX 2: WEALTH EFFECTS ON CONSUMPTION IN MALTA: EVIDENCE FROM HOUSEHOLD LEVEL DATA¹

Introduction

Consumers typically spend more when they are either wealthier or perceive themselves to be so. In addition, households' inclination to spend may also depend on their relative position within the economy's wealth distribution.

This Box summarises the main results from a study on wealth effects on consumption in Malta based on household-level data from the 2017 Household Finance and Consumption Survey (HFCS).² Wealth effects refer to a change in spending that accompanies a change in either actual wealth or perceived wealth. In particular, the main focus is on the effects of housing and financial wealth on consumption, as well as on potential heterogeneity that may be present in different levels of wealth.

In this framework, wealth is split into housing wealth and financial wealth. In the Survey, housing wealth consists of the households' main residence and other real estate properties, investments in self-employed businesses, vehicles, and other valuables.

In recent years Malta's economy has expanded rapidly, with developments in the housing market playing an increasingly important role, reflecting the fact that the home-ownership rate exceeds 80%. Financial assets are deposits, securities (bonds), listed shares, voluntary pension scheme investments in mutual funds, and life insurance and other financial assets. Consumption is defined as the amount spent by private households on goods and services.³ All data are in nominal terms and are based on the replies (including subjective valuations) of Survey respondents aged between 25 and 75, from 872 households.

The empirical model is based on a linear consumption function expressed in logarithmic form. In particular, the basic model is:

$$\log C = \beta_1 \log Y + \beta_2 \log HW + \beta_3 \log FW + \sum_{i=2}^N \beta_{5i} K_i + \sum_{j=1}^J \beta_{6j} L_j$$

where C is consumption expenditure, Y is household income, HW is net housing wealth and FW is gross financial wealth. K_i is a dummy for the age of the reference person of a household, while L_j controls for different socioeconomic characteristics. The set of the control variables contains the work status and education level of the reference person, household size and quintiles of net wealth. Moreover, three dummy variables are included. The first relates to credit-constrained households while the second dummy indicates whether a household has received inheritance or gifts in the last three years preceding the interview.

¹ Prepared by Ilias Georgakopoulos. The author was formerly an economist in the Economic Analysis Department of the Central Bank of Malta. Helpful comments by Alexander Demarco, Aaron G. Grech, Rita Schembri and Brian Micallef are gratefully acknowledged. Any errors, as well as the views expressed in this article, are the author's sole responsibility.

² For more details see Georgakopoulos, I. (2019), "Wealth Effects on Consumption in Malta: Evidence from Household Level Data", *Applied Economics and Finance*, Vol. 6(4), pp. 28-35.

³ The one-shot question about spending on goods and services may be an imprecise measure of total consumption and could suffer from downward bias. However, data from one-shot questions have been successfully employed in a number of research papers (e.g., Browning, M., and Crossley, T. (2001), "Unemployment insurance benefit levels and consumption changes", *Journal of Public Economics*, Vol. 80(1), pp. 1-23).

The third dummy variable controls for the subjective expectations of the reference person regarding the evolution of household income in the year right after the interview.

Results

This section presents the estimates of the basic model tested. Wealth effects are reported as elasticities of consumption with respect to different components of wealth. In addition, to explore the existence of a life-cycle pattern in consumption, estimates for households belonging to different age groups are presented. Similarly, to analyse the impact of household heterogeneity in wealth effects on consumption, estimates for households by net wealth quintile groups are also provided.

Table 1 presents the results of the baseline model. Overall, the estimates for income and the two wealth components are positive and statistically significant. In particular, the estimated elasticity of consumption with respect to income is positive, at 0.21%, and considerably higher than the elasticity of consumption with respect to wealth.⁴ As expected, the

Table 1
REGRESSION RESULTS

Percentage

Variable	Coefficient		Standard Error
Income	0.21	***	0.04
Net Housing Wealth	0.08	*	0.04
Gross Financial Wealth	0.05	***	0.01
Age 35–44 years	0.01		0.06
Age 45–54 years	-0.03		0.06
Age 55–64 years	-0.12	*	0.07
Age 65–75 years	-0.19	*	0.09
Inheritance	-0.18	***	0.05
Secondary Education	0.09		0.08
University Education	0.25	**	0.09
Self-employed	-0.10		0.09
Retired	0.18	*	0.09
Other	0.06		0.07
Household Size	0.08	***	0.02
Credit Constraint	-0.18		0.14
Positive Income Expectations	-0.09	*	0.05
2nd Net Wealth Quintile	-0.22	***	0.07
3rd Net Wealth Quintile	-0.34	***	0.09
4th Net Wealth Quintile	-0.43	***	0.10
5th Net Wealth Quintile	-0.24	*	0.14
Constant	5.63	***	0.60

Sources: HFCS; author's calculations.

*Significant at the 10% level, **Significant at the 5%, ***Significant at the 1%.

⁴ This is in line with results derived from an aggregate consumption function for the Maltese economy which forms part of the Central Bank of Malta's main macroeconomic model (see Grech, O. & Rapa, N. (2016), "STREAM: A structural macroeconomic model of the Maltese economy", *Working Paper WP/01/2016*, Central Bank of Malta).

elasticities for net housing wealth and gross financial wealth are also positive, with respective estimated values of 0.08% and 0.05%.⁵ It should be noted that the effect of gross financial wealth, though lower than that of net housing wealth, is highly statistically significant, reflecting the fact that households own at least some form of financial wealth, which is a highly liquid wealth constituent component.

The proxy for future income expectations in total household income has a negative and significant effect. This may suggest that Maltese households tend to consume a lower share of their current income or save up a big part of it when they are pessimistic about future income, everything else being equal.⁶ Moreover, this finding may provide evidence in favour of the existence of a direct wealth effect on consumption apart from that through the confidence channel.

With regards to the socioeconomic variables, households whose reference persons are older than 54 years tend to consume less than younger households, although this effect is only statistically relevant at the 10% level of significance. The negative coefficients for older people suggest a decreasing pattern over the life-cycle in line with Arrondel et al. (2019).⁷ Lastly, household size is positively and significantly associated with consumption levels.

As expected, credit constraints tend to lower consumption, although the elasticity is not statistically significant in the specification considered here.

The role of age

According to the life-cycle theory, households smooth consumption over their lifetime, doing so by saving, borrowing against their human capital at the early stages of their lifetime and dissaving when they are retired. The notion of consumption smoothing would imply that age itself is not necessarily a significant explanatory variable for the level of consumption, when controlling for all other factors correlated with both the level of consumption and age. However, age may affect the proportions in which different components of wealth and income are used to fund consumption.

In view of this consideration, a regression with interaction terms of the age dummies and income and wealth components is performed. The results are reported in Table 2. Overall, the estimated elasticities provide evidence of a life-cycle pattern in consumption patterns, based on the net housing wealth variable across different age groups. The elasticity of consumption with respect to this variable rises steadily with age, peaking at 0.32% for households with a reference person aged 45-54 years. This finding is in line with the life-cycle hypothesis. These households are most likely to be downsizing their home and realising their housing wealth gains ahead of retirement.⁸ Similar results are obtained for the

⁵ A sensitivity analysis conducted using the same regression model shown in Table 1 on the HFCS 2013 wave indicates that the results are very robust. Using the 2013 wave, the elasticities on income, net housing wealth and gross financial wealth stood at 0.19, 0.07 and 0.05, respectively. The elasticities of the other statistically significant variables in Table 1 are also robust.

⁶ This is in line with results presented in Gatt, W. (2014), "The determinants of household saving behaviour in Malta", *Working Paper WP/03/2014*, Central Bank of Malta. The latter study is based on macroeconomic aggregate data, rather than survey micro data as used in this Box.

⁷ See Arrondel et al. (2019), Does inequality matter for the consumption-wealth channel? Empirical Evidence. *European Economic Review*. Vol. 111, pp.139-165.

⁸ See Lehnert, A. (2004), "Housing, Consumption, and Credit Constraints", *Finance and Economics Discussion Series 63*, Federal Reserve Board.

Table 2
REGRESSION RESULTS AND THE ROLE OF AGE

Percentage

Variable	Coefficient		Standard Error
Income	-0.04		0.07
Age 35–44 years	0.37	***	0.13
Age 45–54 years	0.24	**	0.10
Age 55–64 years	0.02		0.11
Age 65–75 years	0.37	***	0.11
Net Housing Wealth	-0.11	***	0.04
Age 35–44 years	0.04		0.06
Age 45–54 years	0.32	***	0.06
Age 55–64 years	0.23	***	0.07
Age 65–75 years	0.16	***	0.05
Gross Financial Wealth	0.02		0.02
Age 35–44 years	-0.03		0.03
Age 45–54 years	0.00		0.03
Age 55–64 years	0.06		0.04
Age 65–75 years	0.06	**	0.03
Age 35–44 years	-3.88	***	1.37
Age 45–54 years	-6.38	***	1.10
Age 55–64 years	-3.64	**	1.34
Age 65–75 years	-6.32	***	1.26
Inheritance	-0.19	***	0.05
Secondary Education	0.07		0.08
University Education	0.24	**	0.09
Self-employed	-0.12		0.09
Retired	0.13		0.09
Other	0.04		0.07
Household Size	0.08	***	0.02
Credit Constraint	-0.14		0.15
Positive Income Expectations	-0.07		0.05
2nd Net Wealth Quintile	-0.16	**	0.06
3rd Net Wealth Quintile	-0.22	***	0.08
4th Net Wealth Quintile	-0.30	***	0.09
5th Net Wealth Quintile	-0.14		0.12
Constant	10.47	***	0.94

Sources: HFCS; author's calculations.

*Significant at the 10% level, **Significant at the 5%, ***Significant at the 1%.

elasticity of consumption with respect to financial wealth, although the elasticities are less statistically significant in this case.

The role of asset-holding decisions

Endogeneity in asset-holding decisions could potentially affect the robustness of the results. For instance, risk preferences or time might not be fully captured in the model, even if they could still affect consumption and asset allocation. To address this limitation, two separate regressions were estimated to check whether the results presented in Table 1 would still

Table 3
REGRESSION RESULTS AND THE ROLE OF ASSET HOLDING DECISIONS

Percentage

Variable	Coefficient		Standard Error
Income	0.21	***	0.04
Net Housing Wealth	0.12	***	0.04
Gross Financial Wealth	0.05	***	0.01
Net Housing Wealth * Homeowners	-0.03	***	0.01
Constant	5.50	***	0.60
Variable	Coefficient		Standard Error
Income	0.20	***	0.04
Net Housing Wealth	0.08	**	0.04
Gross Financial Wealth	0.02		0.02
Gross Financial Wealth * Bondholders	0.02	***	0.00
Constant	5.81	***	0.53

Sources: HFCS; author's calculations.

*Significant at the 10% level, **Significant at the 5%, ***Significant at the 1%.

hold when accounting for homeowners and bondholders. To this end, in one regression, the net housing wealth variable is interacted with a dummy variable reflecting home ownership while in the other gross financial wealth is interacted with a dummy variable reflecting households that are bondholders.⁹

Results are largely in line with those in Table 1 and indicate a limited degree of heterogeneity when it comes to the response of consumption to housing and financial wealth (see Table 3).

Conclusion

Prior to this study, the impact of wealth on consumption in the Maltese economy had only been studied at an aggregate level. Other studies of consumption that utilised micro data from household surveys could not discern the impact of wealth as information on this component was not available.¹⁰

Overall, evidence from the HFCS indicates that, as suggested by aggregate data, both housing and financial wealth have a positive effect on household consumption, although the effect of housing wealth is larger.

Moreover, the life-cycle pattern in consumption is confirmed by comparing differences in wealth effects across different household age groups. Given the high home-ownership rate in Malta, one may argue that these heterogeneities may have to be considered when performing welfare analysis.

⁹ Only estimates of the main variables of interest are presented.

¹⁰ One example is Gatt, W. (2015), "A profile of household saving behaviour in Malta", *Quarterly Review* 2015:1, pp. 35-38, Central Bank of Malta. This study had utilised data from the Household Budgetary Survey.