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INCOME AND WEALTH INEQUALITY IN MALTA: EVIDENCE FROM MICRO DATA

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BOX 3: INCOME AND WEALTH INEQUALITY IN MALTA: EVIDENCE FROM MICRO DATA¹

Introduction

The Maltese economy has undergone a strong and job-rich expansion in recent years, leading to higher household incomes, historically low unemployment rates and a booming property market. In many countries, such episodes have frequently been characterised by rising inequality, as some categories of households were not in a position to benefit from such an expansion, with the latter losing out in relative or, in some cases, even in absolute terms.

This Box summarises selected results from a study of the distribution of income and wealth in Malta based on data from the Household Finance and Consumption Survey (HFCS).² The survey is conducted by the Central Bank of Malta every three years as part of a Euro-system project coordinated by the ECB. It was conducted for the first time in 2010 and repeated in 2014 and 2017.³ The HFCS contains a wealth of information on households' balance sheet, income and consumption patterns. Most of these questions are answered by the most financially knowledgeable household member (the 'reference person').⁴

Distributional analysis

Table 1 reports some widely used measures of inequality for gross household income, net wealth, real assets, financial assets and liabilities, for the whole sample of participating households and households with a reference person of working age. The full sample results show that, according to the Gini coefficient, financial assets are the most unequally distributed variable among the ones chosen. Furthermore, their distribution on this basis has become more unequal over time. This statement is partly supported by other measures of inequality, such as the P-ratios, which represent ratios between different percentiles of the distribution, although in these cases the development is not linear over time.

The distribution of gross household income is less concentrated than that of net wealth, as evidenced by lower values of the Gini coefficient and P-ratios. Furthermore, while the P50-P10 ratio – that is, the ratio between the 50th percentile (median) and the 10th percentile, which covers the bottom half of the distribution – indicates rising inequality across the three waves, the P90-P10 ratio suggests decreasing inequality in the upper half of the distribution.

In 2016, households at the top of the income distribution earned 2.31 times more than those at the median of the distribution, down from 2.38 in 2010. Concurrently, households in the middle-to-upper parts of the distributions saw higher income increases relative to

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

² A more detailed discussion on the topic is available in Georgakopoulos, I. (2019), "Income and Wealth Inequality: Evidence from Micro Data," Working Paper 03/2019, Central Bank of Malta.

³ Although fieldwork was conducted in these years, data refer to preceding year, except for the first wave of the survey, where the data are for 2010. Figures are expressed in nominal terms.

⁴ For a detailed discussion about the survey see HFCN (2013), "The Eurosystem Household Finance and Consumption Survey: methodological report for the first wave", *Statistics Paper Series*, No.1, ECB.

Table 1
SUMMARY STATISTICS FOR THE SAMPLE AND WORKING-AGE HOUSEHOLDS

EUR; number

	Sample households				Working-age households			
	Median	P90/P50	P50/P10	Gini	Median	P90/P50	P50/P10	Gini
Gross household income								
2010	20,562	2.38	2.82	0.378	25,872	1.99	2.56	0.334
2013	22,718	2.42	2.99	0.396	28,665	2.08	2.81	0.342
2016	25,417	2.31	3.31	0.409	33,301	1.96	2.64	0.357
Net wealth								
2010	204,908	3.12	12.86	0.566	218,672	2.94	9.07	0.565
2013	212,067	2.89	14.83	0.562	214,859	2.65	5.89	0.567
2016	236,529	2.93	18.75	0.598	237,690	2.87	7.72	0.601
Real assets								
2010	193,511	3.02	36.51	0.573	204,709	2.92	28.62	0.576
2013	209,840	2.74	10.84	0.538	215,448	2.60	5.35	0.552
2016	225,752	2.85	24.05	0.584	228,752	2.80	13.07	0.581
Financial assets								
2010	23,454	4.47	12.50	0.622	22,937	4.49	17.13	0.586
2013	22,150	6.33	8.14	0.653	22,067	4.99	7.53	0.614
2016	22,512	5.78	12.86	0.679	21,520	4.65	13.54	0.654
Liabilities								
2010	17,122	6.14	34.52	0.682	18,701	6.04	37.40	0.667
2013	19,273	6.85	48.09	0.643	24,900	5.54	53.27	0.619
2016	40,000	4.07	40.00	0.559	45,946	3.81	38.29	0.531

Sources: HFCS; author's calculations.

lower income groups. This has resulted in a small increase in the Gini coefficient over the period under review.⁵

With reference to inequality in household liabilities, the Gini coefficient dropped to 0.559 in 2016 from 0.682 in 2010. Inspection of the percentile ratios reveals that the main driver of the observed reduction in the Gini coefficient was the increasing availability of housing loans to households, particularly to those around the middle of the distribution of liabilities since 2010. This finding is reflected in the reduction of the P90-P50 ratio from 6.14 to 4.07 by the end of 2016.

As regards net wealth, the Gini coefficient rose from 0.566 in 2010 to 0.598 in the third wave of the survey. The P90-P50 ratio suggests that divergence within the top half of the distribution became less pronounced over time, indicating that the net wealth of the middle 50% exerts more weight on the distribution. It should be noted that real assets are more equally distributed than financial assets, partly due to the prevalence of home-ownership in Malta, which might also explain why net wealth is more equally distributed than financial assets. However, inequality in the bottom half of the distribution has increased over time, as indicated by the rise in the P50-P10 ratio. This ratio also remains significantly higher than the other relative measures of inequality considered here, which may reflect the fact that households at the lower end of the distribution may still find it challenging to acquire real assets.

⁵ See also Darmanin, J., Georgakopoulos, I. and Knoppe, C. (2018), "Income Distribution, Inequality and Mobility in Malta," *Research Bulletin 2018*, Central Bank of Malta.

In order to investigate what drives the observed inequality, the focus of the analysis is shifted to households whose reference person is between 20 and 60 years old, which broadly corresponds to the working-age category in Malta (see Table 1).

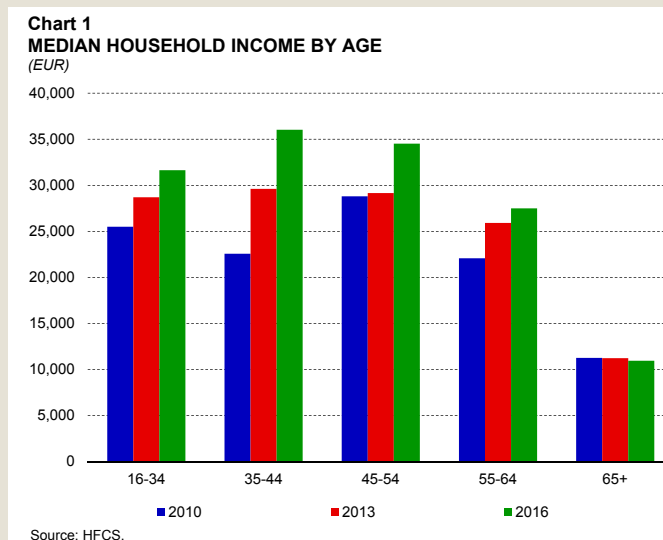
Comparison of the distributional statistics for the two sample sizes suggests that the picture of inequality changes slightly for gross household income and financial assets. For instance, the Gini coefficient for gross income is lower by some 0.04-0.05 compared with the whole sample, while all of the displayed percentiles ratios are lower. Therefore, it appears that the group of pensioners pushes up overall measures of inequality since their incomes are considerably lower compared to those of other low income households. Similarly, inequality in financial assets also decreases, based on the Gini coefficient, when households with a retired reference person are excluded from the sample.

According to the Gini coefficient, life-cycle features appear to be important for income and financial assets, however, their impact on real assets and net wealth is limited. Most of the inequality indicators for the working-age group are close to those of the whole population. This is most likely because most pensioners are asset rich but income poor at the household level.

Income and wealth distribution by age

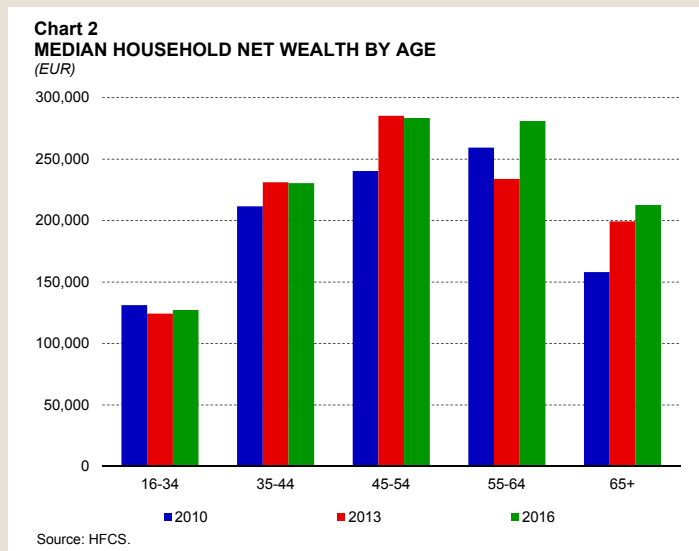
Chart 1, which depicts the distribution of median income by the age of the reference person in the household, shows a large gap between the income level of older households (65+) and that of younger ones. Over the three waves of the survey, this gap has increased, with the 65+ category being the only category that did not experience an increase in income across surveys. This suggests that old age pensions have lost their relativity with median income. Moreover, old age pensions have only increased in line with the cost of living during the period under review, while they are also subject to a cap on pensionable income.

Chart 2 shows the distribution of net wealth by age group. This exhibits the expected hump-shaped pattern often found in the literature.⁶ Indeed, in Malta, median net wealth rises steadily with age, reaching its peak in the 45-54 age group on average. Households whose reference person is over 65 experienced



⁶ See Azpitarte, F. (2010), "The household wealth distribution in Spain: The role of housing and financial wealth", *Hacienda Pública Española*, IEF, 194(3), pp. 65-90.

a marked increase in their net wealth in the period under review. This is related to a higher self-assessed value of their housing wealth as well as due to an increase in the perceived value of financial assets over time. On the other hand, net wealth of households in the 16-34 group remained broadly stable over time, as their increases in income were offset by a decrease in their financial assets coupled with a notable increase in their debt holdings by 2016.



The joint distribution of income and net wealth

This section examines the relationship between income and wealth and in particular, the factors that influence the position of a household in the wealth distribution. For this purpose, the author estimates a generalised ordered logit model for the probability of a household to be in a net wealth quintile given its position in the income distribution, after controlling for socio-economic and demographic features.

The estimated coefficients of the income quintiles are positive and in most cases significant (see Table 2). A rise in income increases the probability of being in a higher wealth quintile with the exception of the fourth income quintile in the first wealth threshold. Conversely, within a given wealth threshold, the estimated coefficients tend to increase with income, suggesting that the probability of being in a given wealth quintile increases along the income distribution.

With regards to socio-economic and demographic features, the age of the reference person in a household is found to have a positive impact on the position in the distribution of wealth. Gender seems to have mixed effects on the position of a household in the wealth distribution, but this dummy variable is not statistically significant. One possible explanation for these results is the relative homogeneity in gender across the distribution of wealth.⁷ As regards labour status, households with a self-employed reference person are more likely to be in a higher wealth quintile (compared to households with an employed reference person) because they hold high value assets. The effect of household size is ambiguous and statistically insignificant. This could be attributed to the similar household structure

⁷ See Fessler, P. and Schürz, M. (2015), "Private Wealth across European Countries: The role of Income, Inheritance and the Welfare State", *Working Papers Series No. 1847*, ECB, September 2015 and Mathä, T., Porpiglia, A. and Ziegelmeier, M. (2014), "Household Wealth in the Euro Area: The Importance of Intergenerational Transfers, Homeownership and House Price Dynamics", *Working Paper Series No. 1690*, ECB, July 2014 for a discussion about such findings.

Table 2
GENERALISED ORDERED LOGIT REGRESSION RESULTS

Odds ratio

	1st Wealth threshold	2nd Wealth threshold	3rd Wealth threshold	4th Wealth threshold
2 nd Income quintile	0.115	0.591 **	0.434 *	0.825 **
3 rd Income quintile	1.038 **	1.281 ***	1.122 ***	1.279 ***
4 th Income quintile	0.928 *	1.642 ***	1.340 ***	1.758 ***
5 th Income quintile	1.662 ***	2.117 ***	2.252 ***	2.879 ***
Gender	-0.282	-0.104	0.185	0.041
Age of reference person	0.429 ***	0.456 ***	0.375 ***	0.418 ***
Household size	-0.049	0.141	0.055	-0.146
Secondary education	0.926 ***	0.349	0.354 *	0.397
Tertiary education	1.425 ***	1.111 ***	1.103 ***	1.155 ***
Self-employed	0.757	1.223 ***	1.844 ***	2.426 ***
Retired	-0.329	0.135	0.173	0.508
Other	-1.156 **	0.001	0.116	0.388
Owner outright	5.251 ***	3.484 ***	4.622 ***	17.273
Owner with mortgage	3.961 ***	2.406 ***	3.527 ***	16.704
Credit-constrained households	-1.707 ***	-0.451	0.338	0.763
Inheritance/gifts	0.953 ***	1.149 ***	0.877 ***	0.491 **
Pseudo R2	0.28			
N.Obs	996			

Sources: 2016 HFCS; author's calculations.

*** denotes significant at 1 per cent level; ** denotes significant at 5 per cent level; * denotes significant at 10 per cent level.

All estimates are weighted using household weights and take the multiple imputation structure into account.

across wealth quintiles. Lastly, a tertiary level of education has a positive impact on wealth distribution.

For households who own their homes with an outstanding mortgage, there is a positive and significant impact on the probability that a household would be in a higher quintile in the wealth distribution, except for the highest wealth quintile. Therefore, households that can save up enough money to partly or fully finance the purchase of a house have a high probability of being in the wealthiest quintiles in the future. With regards to households with a mortgage, this variable explains the position of households in the wealth distribution in a positive and significant way. This is related to the fact that households with a mortgage typically have higher (expected) incomes and therefore represent a lower risk to financial institutions.

Credit-constrained households in the first wealth quintile are negatively affected by the lack of credit, but there is no statistically significant effect on the rest of the wealth distribution.⁸

⁸ Credit-constrained households are defined as those who responded affirmative to any of the following questions: (i) In the last three years, has any lender or creditor turned down any request you (or someone in your household) made for credit, or not given you as much credit as you applied for? (ii) In the last three years, did you (or another member of your household) consider applying for a loan or credit but then decided not to, thinking that the application would be rejected?

In addition, having received gifts or inheritance has a positive impact on the household position in the wealth distribution.

Conclusion

To sum up, wealth inequality is more pronounced than income inequality. Furthermore, although wealth inequality increased moderately between 2010 and 2016, it widened at a quicker pace than income inequality. In relative terms, the distribution of wealth and income changed somewhat in favour of households in the upper parts of the distributions. In contrast, older households have seen stable pension income but were unable to keep up with the overall increase in national median income.

The financing structure of a household, in particular its ability to take a mortgage for its main residence, plays a crucial role in explaining its position in the wealth distribution. Furthermore, household income and the incidence of having received inheritance or gifts are among the most important determining factors of a household's position in the wealth distribution.