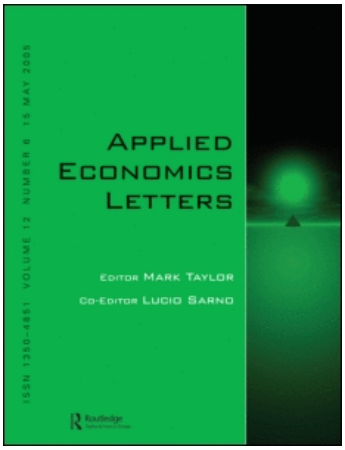

Applied Economics Letters
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713684190

Financial wealth effect: evidence from threshold estimation

Sherif Khalifa[a]; Ousmane Seck[b]; Elwin Tobing[c]
[a] Department of Economics, California State University, Fullerton, CA, USA [b] Department of Economics, University of Texas, El Paso, TX, USA [c] School of Business and Management, Azusa Pacific University, Azusa, CA, USA

First published on: 07 March 2011

To cite this Article Khalifa, Sherif , Seck, Ousmane and Tobing, Elwin(2011) 'Financial wealth effect: evidence from threshold estimation', Applied Economics Letters,, First published on: 07 March 2011 (iFirst)
To link to this Article: DOI: 10.1080/13504851.2010.535777
URL: http://dx.doi.org/10.1080/13504851.2010.535777

Applied Economics Letters, 2011, 1–3, iFirst

Routledge
Taylor & Francis Group

Financial wealth effect: evidence from threshold estimation

Sherif Khalifa[a,*], Ousmane Seck[b] and Elwin Tobing[c]

[a]*Department of Economics, California State University, Fullerton, CA 92834, USA*
[b]*Department of Economics, University of Texas, El Paso, TX 79901, USA*
[c]*School of Business and Management, Azusa Pacific University, Azusa, CA 91702, USA*

Using Hansen's (1999) threshold estimation technique and Panel Study of Income Dynamics (PSID) data set for the waves of 2001, 2003 and 2005, we estimate the effects of the fluctuations in financial wealth on the consumption behaviour of households for different endogenously determined income groups. We found a threshold income level of almost $130 000, below which the financial wealth effect is insignificant, and above which the effect is 0.004.

I. Introduction

Several studies have examined the impact of changes in household financial wealth on the consumption behaviour. This financial wealth effect depends on the underpinnings of the life cycle theory that predicts that the level of consumption is a function of permanent income. It argues that households adjust their saving and wealth over time to keep their planned spending levels steady in the face of uneven income streams. To quantify the financial wealth effect on consumption, studies typically measure the marginal propensity to consume out of a dollar increase in financial wealth. Most of these studies reached a consensus on the range of estimates for the marginal propensity to consume in the United States, indicating that a one dollar increase in financial wealth increases consumption by about 2–5 cents, as in Girouard and Blondal (2001), Benjamin *et al.* (2003), Case *et al.* (2003, 2004) and Bostic *et al.* (2009).

Little is known whether the financial wealth effect is different across different income households. According to previous studies, the consumption behaviour depends on the income category of the household. For instance, Carroll (2000) found that the marginal propensity to save of the rich is higher than that of the poor. This is because, according to the precautionary saving incentive, consumers with small asset stocks tend to compress their consumption so that their marginal propensity to consume out of wealth is higher than that of those holding larger asset stocks. Therefore, we expect the financial wealth effect of the poor households to be different than that of the rich households. The issue is how to split the sample along the income levels. Instead of imposing an exogenous criterion for splitting the sample by income levels and estimating the financial wealth effect of each income category, we use the threshold estimation technique developed in Hansen (1999).

This article is organized as follows: Section II describes the data and estimation. Section III presents the results. Section IV draws some concluding remarks.

II. Data and Estimation

The data set used is extracted from the Panel Study of Income Dynamics (PSID) waves of 2001, 2003 and 2005. We exclude all observations for families that did not know or were not able to estimate their consumption, income and financial wealth variables. We also focus on households whose head is between 25

*Corresponding author. E-mail: skhalifa@fullerton.edu

and 65 years old in 2003, as it is standard in the literature. We choose households who continued to have the same head during the three waves and delete those who have a nonpositive wealth value in any of the given years. This gives our sample of 2732 households.

The specification estimates consumption as a function of income, financial wealth and a vector of households' characteristics that include demographic variables. The threshold estimation model is, thus, given by

$$C_{it} = \begin{cases} \mu_i + \beta_1 FW_{it} + \phi_1 Y_{it} + \phi_2 D_{it} + e_{it} \text{ if } Y_{it} \leq Y^T \\ \mu_i + \beta_2 FW_{it} + \phi_1 Y_{it} + \phi_2 D_{it} + e_{it} \text{ if } Y_{it} > Y^T \end{cases} \quad (1)$$

where the subscript i indexes the household, and the subscript t indexes the time. The dependent variable C_{it} denotes the nondurable consumption spending of family i in year t. The variable FW_{it} denotes the financial wealth of family i in year t. The variable Y_{it} denotes the income of family i in year t. The variable D_{it} is a vector of family characteristics that includes demographic variables such that D_{it} = [*age, region, family size, sex, education, marital status*] of family i in year t. A detailed description of the variables is as shown in Table 1.

In this context, the observations are divided into two regimes depending on whether the threshold variable Y_{it} is smaller or larger than the threshold level Y^T. The regimes are distinguished by differing regression slopes, β_1 and β_2. Another way of writing the equation of interest is

$$C_{it} = \mu_i + \beta_1 FW_{it} I(Y_{it} \leq Y^T) + \beta_2 FW_{it} I(Y_{it} > Y^T) + \phi_1 Y_{it} + \phi_2 D_{it} + e_{it} \quad (2)$$

where $I(.)$ is the indicator function. Summary statistics of the variables used in the estimation are provided in Table 2.

To determine the number of thresholds, the model is estimated by least squares allowing for zero, one, two and three thresholds. The test statistics F_1, F_2 and F_3 along with their bootstrap[1] p-values are shown in Table 3. The test for a single threshold F_1 is not significant with a bootstrap p-value of 0.0633. The test for a double threshold F_2 is also not significant with a bootstrap p-value of 0.3266. However, the test for a triple threshold F_3 is significant with a bootstrap p-value of 0.0266. Thus, we conclude that there is evidence that there are three thresholds in the regression relationship.

Table 1. Variable definitions

Variable	Definition
C_{it}	Annual family spending on nondurable goods
Y_{it}	Annual family income
FW_{it}	Estimated value of financial wealth
Age_{it}	Age of head of family
$South_{it}$	= 1 if the family lives in the South
$North\ East_{it}$	= 1 if the family lives in the North East
$Midwest_{it}$	= 1 if the family lives in the Midwest
$Size_{it}$	Number of family members
Sex_{it}	Sex of the head of the family; = 1 if male
$Marital_{it}$	Marital status of the head of the family; = 1 if married
$High\ School_{it}$	= 1 if head of family's highest education is high school degree
$Some\ College_{it}$	= 1 if head of family's highest education is some college
$College_{it}$	= 1 if head of family's highest education is college degree

III. Results

The point estimates of the thresholds are \$101 729.999615, \$104 200.000177 and \$130 800.000261. The regression slope estimates, conventional OLS SE and white-correlated SE are reported in Table 4. The estimates of primary interest are those on financial wealth. Financial wealth has an insignificant effect on consumption if income is below the first threshold, between the first and second thresholds and between the second and third thresholds. However, for income above \$130 000, the financial wealth effect is significant with a coefficient of 0.0045.

There are several possible explanations for this result. First, the holdings of financial wealth is concentrated within the high-income households, and therefore we find a significant financial wealth effect in this income category. In addition, the largest component of financial wealth held by low-income households is in restricted accounts, such as pensions, which cannot be easily withdrawn for consumption. Finally, in the period 2001 to 2005, the housing boom allowed households to extract equity from their housing wealth to increase their consumption, and accordingly rely less on their financial wealth.

IV. Conclusion

This article estimates the effects of financial wealth on the consumption behaviour of households. We use the threshold estimation technique developed in Hansen (1999) to endogenously split the sample by income levels and estimate the effects for each income

[1] Three hundred bootstrap replications are used for each of the three bootstrap tests.

Table 2. Summary statistics

	Minimum	25% quantile	Median	75% quantile	Maximum
Consumption	5010	16 184	24 675	37 404	860 044
Age	18	38	46	53	67
Financial	1	1000	10 000	73 999	3 569 7000
Income	5400	43 100	67 999	101 999	5 499 999

Table 3. Tests for threshold effects

Test for single threshold	
F_1	15.8802
p-Value	0.0633
(10%, 5%, 1% critical values)	(10.9998, 17.0737, 30.8649)
Test for double threshold	
F_2	7.5561
p-Value	0.3266
(10%, 5%, 1% critical values)	(19.8020, 39.4358, 113.7042)
Test for triple threshold	
F_3	22.7476
p-Value	0.0266
(10%, 5%, 1% critical values)	(12.1663, 16.2256, 25.2445)

Table 4. Regression estimates

Regressor	Coefficient estimate	OLS SE	White SE
Age_{it}	−6.058472	21.134729	8.110588
Y_{it}	0.011240	0.004630	0.008241
$South_{it}$	−1958.328414	6062.425651	3543.108603
$North\ East_{it}$	−2539.354782	8078.323925	5028.037715
$Midwest_{it}$	1348.699763	6419.040378	3596.190948
$Size_{it}$	2774.400523	608.425206	364.992619
Sex_{it}	1049.914186	5354.301351	3670.328729
$Marital_{it}$	−1050.483870	2275.754664	1465.785217
$High\ School_{it}$	−2091.027266	3844.165489	1608.137486
$Some\ College_{it}$	−2036.248682	3492.564469	1819.511283
$College_{it}$	4860.436912	3187.042716	2607.298850
$FW_{it}I(Y_{it} \leq Y^{T1})$	0.002061	0.002058	0.002115
$FW_{it}I(Y^{T1} < Y_{it} \leq Y^{T2})$	0.041381	0.009635	0.034271
$FW_{it}I(Y^{T2} < Y_{it} \leq Y^{T3})$	−0.002589	0.002028	0.003062
$FW_{it}I(Y_{it} > Y^{T3})$	0.004490	0.000797	0.000989

category using the PSID for the waves of 2001, 2003 and 2005. Our results suggest that there is a threshold income level of almost $130 000, below which the financial wealth effect is insignificant, and above which the effect is 0.004. Our results underline the notion that households with low-income levels tend to restrain their consumption out of financial wealth than those with higher income levels.

Acknowledgements

We thank Christopher Carroll. Remaining errors are our own.

References

Benjamin, J. D., Chinloy, P. and Jud, G. D. (2003) Real estate versus financial wealth in consumption, *Journal of Real Estate Finance and Economics*, **29**, 341–54.

Bostic, R., Gabriel, S. and Painter, G. (2009) Housing wealth, financial wealth, and consumption: new evidence from micro data, *Regional Science and Urban Economics*, **39**, 79–89.

Carroll, C. (2000) Why do the rich save so much?, in *Does Atlas Shrug? Economic Consequences of Taxing the Rich* (Ed.) J. Slemrod, Cambridge University Press, London.

Case, K., Quigley, J. and Shiller, R. (2003) Home-buyers, housing and the macroeconomy, in *Reserve Bank of Australia Conference on Asset Prices and Monetary Policy*, 18–19 August 2003, Sydney.

Case, K., Quigley, J. and Shiller, R. (2004) Comparing wealth effects: the stock market versus the housing market, *Advances in Macroeconomics*, **5**, 1–32.

Girouard, N. and Blondal, S. (2001) House prices and economic activity, OECD Economics Department, Working Paper No. 279, OECD, Paris.

Hansen, B. (1999) Threshold effects in non-dynamic panels: estimation, testing, and inference, *Journal of Econometrics*, **93**, 345–68.