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SAVINGS BEHAVIOR IN 17 OECD COUNTRIES

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This article compares savings behavior in a sample of 17 OECD countries over 24 years. On the basis of an analysis of variance and of a life-cycle-hypothesis-based equation, we test the homogeneity of households' savings behavior. It appears that one cannot really speak of a homogeneous saving behavior across countries. This is a relevant finding in times of increasing economic and financial integration.

1. INTRODUCTION

When surveying the evidence on the rate of savings in the OECD countries, one is struck by the wide disparities across countries and the lack of convergence over time. To account for these two well documented facts, one can think of two stories. First, there is a well founded theory of savings which applies equally to all these countries. The diverging savings rates would be due to variations over time and across countries in the values of the main determinants of savings. Second, there would not be a homogeneous model of savings which indifferently applies to most, if not all countries. There would be several country specific models which would account for the observed disparities in national savings rates.

These two competing stories remind one of a pattern which can be found in many other areas and which opposes sociology and economics, two fields which adopt different goals (universality for economics, specificity for sociology) and different methodologies (axiomatic theory, econometric testing for economics, impressionistic cross-cultural comparison for sociology).[1] More concretely, the sociologist would emphasize differences in national culture and in generational values to explain variance in savings rates; the economist would stress traditional economic differences in determinants such as disposable income, growth rate and inflation.

In this paper, we try to test the relative contribution of those two approaches to explain variations in savings rates across countries and over time. Anticipating what follows, we show that both variables "country" and "time" explain a large

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[1]See Lestaeghe and Meekers, 1986.

part of these variations, thus leaving a meager but significant share to traditional economic variables. Focusing on the latter, we try to sort out a subset of countries which tend to have a quite homogeneous behavior towards savings, as expressed by a life-cycle theory based savings equation.

The outline of the paper is as follows. First, we decompose the variation in savings rates of our cross-section-time-series sample to check the importance of the systematic components associated to the country and the year. Then, we test a savings equation which incorporates the main economic and demographic variables assumed to affect household savings behavior and that is consistent with the available data. By introducing dummies for time or countries, we emphasize the cross-section or the time-series feature respectively. On the basis of those results, we distinguish in our sample the countries which seem to behave differently towards savings than the majority. It appears that there is no such a thing as homogeneous saving behavior among those 17 countries. In a concluding section, we try to integrate the sociology and economics of savings, arguing that both approaches are needed for fully explaining variations in savings rates.

2. Variability of Savings Rates Over Time and Across Countries

The data set used here covers 17 countries and 24 years.[2] When so pooling time-series and cross-section data, one is faced with two types of explanatory variables: the quantitative variables (here the economic determinants) and the qualitative variables (here the periods and the countries). It is worth starting by decomposing the variance of the savings variables to obtain the systematic effects associated with the year and with the country and thus isolate what has to be explained by the model.[3]

Let us denote the level of savings of a country i in year t by s_{it} ($i=1,\ldots,N$ and $t=1,\ldots,T$). We define $s_{..}$ as the total average over time and across countries; $s_{i.}$, average savings in country i over time; $s_{.t}$, average savings in year t across countries. With this notation, we now introduce several types of variance (up to the constant $N.T$).

Total variance:	$v=\Sigma_{it}(s_{it}-s_{..})^2$
Between country variance:	$v_{bi}=T\Sigma_{it}(s_{i.}-s_{..})^2$
Within country variance:	$v_{wt}=\Sigma_{it}(s_{it}-s_{i.})^2$
Between time variance:	$v_{bt}=N\Sigma_{it}(s_{.t}-s_{..})^2$
Within time variance:	$v_{wi}=\Sigma_{it}(s_{it}-s_{.t})^2$
Residual variance (within country and time):	$v_{wit}=\Sigma_{it}(s_{it}-s_{.t}-s_{i.}+s_{..})^2$.

One can then easily check the following identities:

$$v=v_{bi}+v_{wt}=v_{bt}+v_{wi}=v_{bi}+v_{bt}+v_{wit}. \tag{1}$$

The last one is of interest here. It is at the heart of any variance analysis. It yields the systematic components associated with the two qualitative variables

[2] A detailed list of countries and years covered by the data is given in the Data Appendix.
[3] For these distinctions, see Mundlak, 1978.

and the residual component. In Table 1 this decomposition is provided for the level and the rate of household savings.[4]

TABLE 1
DECOMPOSITION OF VARIANCE HOUSEHOLDS' SAVINGS

Variance	Savings Level	Savings Rate
	%	%
v	100.0	100.0
v_{bi}	83.5	86.1
v_{wt}	16.5	13.9
v_{bt}	3.0	3.2
v_{wi}	97.0	96.8
v_{wit}	10.9*	10.9*

*These values do not verify the last identity in equation (1) because of unbalanced data.

Taking the example of savings rates, the cross-country variance is much larger than the time-series variance. The first explains 83.5 percent of the total variance whereas the latter explains 3.0 percent. Further, the share of variance which is explained by both country and year is overwhelming.

3. THE BASIC SAVINGS EQUATION

It thus appears that a large part of savings variation is attributable to the spatial dimension. Does that mean that we can already conclude to the heterogeneity of savings behavior across countries? Not really; it is possible that beyond those basic national differences which can be accounted for by dummy variables, households of each country behave similarly with respect to standard economic determinants. To see that, let us first introduce our basic model.

The form of the savings function that is employed here is a simple linear equation based on the life-cycle hypothesis and closely related with that often used in earlier works concerned with international panel data.[5] It can be written as:

$$(2) \qquad s_{it} = \alpha + \beta_1 y_{it} + \beta_2 g_{it} + \beta_3 u_{it} + \beta_4 z_{it} + \beta_5 d_{it} + \beta_6 x_{it} + \beta_7 r_{it} + \varepsilon_{it}$$

where the α and $\beta_k (k = 1, \ldots, 7)$ are coefficients to be estimated. Observations run over countries ($i = 1, \ldots, 17$) and years ($t = 1965, \ldots, 1988$). The variables, defined in detail in the Appendix, are *per capita* household savings, s_{it}; *per capita* household disposable income, y_{it}; growth rate of *per capita* GDP, g_{it}; unemployment rate, u_{it}; expected inflation rate, z_{it}; *per capita* public deficit, d_{it}; average income tax rate, x_{it}; and ratio of population over 64 to total population, r_{it}. The last term, ε_{jt}, is a random error term assumed to have the usual properties $[N(0, \sigma_\varepsilon)]$.

[4]For more complete results, see Table A.1 in the Appendix.

[5]See, e.g., Barro and MacDonald, 1979; Feldstein, 1980; Koskela and Virén, 1983; Kessler *et al.*, 1986; Perelman and Pestieau, 1993.

Equation (2) depicts the savings level as a function of economic and demographic variables. We expect savings to rise in response to an increase in income and to decrease with income taxation. As to the other variables, both the sign and the significance of their coefficients depend on whether one focuses on the cross-section or on the time-series feature.[6] In a time-series setting, growth rate is expected to have a positive effect on savings; unemployment as a proxy for business cycle as well as aging should have a negative effect. The role of public deficit is ambiguous; according to the Ricardian equivalence hypothesis, it should increase savings. Finally, there is no clear-cut prior as to the role of inflation. In a cross-sectional setting, the effect of population and of economic growth is to foster savings. As to the other variables, expectations are rather mixed.

The OLS estimation results for the savings equation (2) are reported in Table 2. Four cases are considered. In the first (a), years and countries are treated indifferently. In other words, French savings in 1970 is treated the same way as, say, Japanese savings in 1980. Case (b) focuses on the time-series problem. To neutralize inter-country differences, each variable is normalized by taking its deviation with respect to its average value over years. Doing that, the inter-country variance vanishes ($v_{bi} = 0$) and only the intra-country variance (v_{wt}) is considered. This procedure is analogous to that consisting of using dummy variables per country. In accordance with the terminology used in variance analysis all the models that include binary variables to control for individual or time specific effects are known as "within effects models."

Case (c) focuses on the cross-sectional problem. Intertemporal differences are neutralized by substituting for each variable its deviation with respect to its average value across countries over the period.[7] In other words, the inter-temporal variance vanishes ($v_{bt} = 0$) and the estimation explains only the intra-temporal variance (v_{wi}). Finally, in case (d), each country and each period are given a dummy variable to neutralize both "between" effects.

Overall estimates are presented in Table 2. As expected, they vary according to the specification adopted. In Table 3, we summarize the sign and the significance of the estimates of cases (b) and (c) which are mainly used in the following.

Table 3 shows variations in the signs and the significance (at 99 percent) of regression coefficients between the two types of approach. Focusing on the cross-section or on the time-series feature makes some difference. In particular, as observed elsewhere, a cycle variable such as inflation is important in the time-series approach whereas demographic variables such as aging particularly matter in cross-sectional studies.

Concerning the latter, one is surprised by the positive effect of aging on savings. It seems to confirm recent findings that show that over the last decades aged people have radically improved their financial situation and behave more and more as net savers. The negative effect of direct taxation is that expected, as is that of the growth rate in the cross-section setting.[8] Finally, the government

[6]The variance decomposition of all the variables present in equation (2) is reported in Table A.1 in the Appendix.

[7]Note that in the following the time variable is represented by two-year periods. This change is introduced in order to avoid a "degrees of freedom" problem.

[8]See Baumol *et al.*, 1989, chapter 8.

TABLE 2

SAVINGS EQUATIONS

(Dependent variable: per capita households' saving)

	Independent Variables	General Model (*a*)	Within Effects Models: Times-series (*b*)	Within Effects Models: Cross-section (*c*)	Within Effects Models: Times-series Cross-section (*d*)
	Intercept	−247.9	country effects	time-effects	country and time effects
y	Per capita disposable income	0.146 (10.6)	0.238 (17.1)	0.162 (9.9)	0.308 (13.9)
g	Growth rate (per capita GDP)	25.4 (2.4)	−6.0 (1.5)	24.5 (2.2)	−10.4 (2.8)
u	Unemployment rate	−12.6 (1.7)	4.1 (1.1)	5.4 (0.6)	14.8 (3.9)
z	Expected inflation	14.2 (2.6)	15.2 (6.9)	10.4 (1.7)	7.5 (2.8)
d	Per capita government deficit	0.354 (5.2)	0.069 (1.9)	0.370 (5.3)	0.173 (4.6)
x	Tax rate	−30.6 (9.2)	−42.6 (10.7)	−29.9 (8.7)	−28.5 (6.6)
r	Ratio of population over 64	69.8 (5.3)	−30.2 (2.1)	86.2 (6.3)	41.2 (2.5)
R^2		0.452	0.584	0.471	0.518
SSE (10^6)		69.15	8.48	64.7	6.6
n		384	384	384	384

Note: See the Data Appendix for variable definition and sources. The *t*-ratios are given into brackets.

TABLE 3

SIGN AND SIGNIFICANCE OF THE ESTIMATES

Variable	Time-series	Cross-section
y	+*	+*
g	−	+*
u	+	+
z	+*	+
d	+	+*
x	−*	−*
r	−*	+*

*Indicates that the coefficient is significant [$Pr(\beta_k \neq 0) > 0.99$] on the basis of a *t*-test.

deficit happens to have a positive effect on savings when we consider the cross-section model (column *c*). This result seems to partially confirm the Ricardian hypothesis that households anticipate the burden of future taxes.

Returning to the quality of the fit of cases (*b*) and (*c*) one should keep in mind that these equations explain the "within" variations in savings levels. For example, taking households savings, we know from Table 1 that 83.5 percent of its variance is explained by the variable "country." From Table 2, it appears that 58.4 percent of the remaining 16.5 percent are explained by the model.

It would be both naive and careless to conclude that our sample of countries behave homogeneously towards savings solely on the basis of these results. It is indeed likely that the mold of this savings model is too constraining for a number of countries or to put it otherwise, excluding them from the sample model would improve the quality of the fit. The next section tries to pinpoint those countries which tend to behave marginally, in contrast to the majority.

4. Inter-Country and Inter-Temporal Heterogeneity

In our class of 17 pupils, which ones seem to behave at odds with the general saving pattern? This question calls for a distinction. There are indeed two ways one can be marginal vis-a-vis the savings pattern expressed by case (b) in Table 2. First, one or several countries' actual behavior can be poorly explained by this pattern which is a good fit for the saving behavior of the majority. We then say that this or these countries have a nonuniform behavior. Second, it may happen that for one or several countries the quality of the fit could be seriously improved if they could have their own coefficients for the saving equation (2). In other words, the model given by case (b) in Table 2 is too constraining and inappropriate for these countries.

To illustrate these two sources of divergence, we use the example of a simple savings function on Figure 1. Saving is plotted against income. There are three items: the scattered points depict the actual time-series data for a given country A; line π represents case (b), namely a time-series-cross-section estimation controlling for the inter-country variation; line δ represents the estimation of equation (2) just for country A. Incidentally, one might note that a non-linear savings function could have given a perfect fit (denoted γ) implying that the functional shape of equation (2) is an important matter. To test the uniform

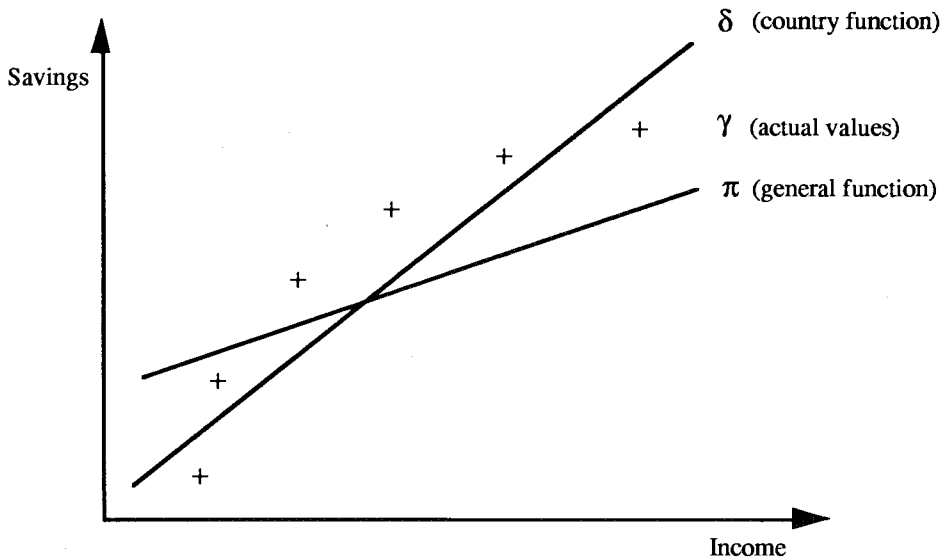

Figure 1. Two Sources of Differences

behavior of our 17 countries, we oppose for each of them actual data to the estimated value given by π. To test the appropriateness of the model, we contrast δ and π.

Results of these tests are given in Table 4. In column (a), ρ_i^2 provides the simple correlation between actual savings levels and saving values estimated on the basis of case (b), in Table 2. From this first test, it appears that the United States and Finland do not have a uniform behavior as compared to the other countries. According to that test, one could be quite satisfied as to the homogeneous behavior of the majority of countries in our sample. This is however an incomplete and somehow misleading test. The next test is concerned with whether the aggregate estimation is a good fit for the behavior of those countries.

In column (b), R_i^2 gives the value of the coefficient of determination obtained from estimating equation (2) for each individual country. Going back to Figure 1, ρ_i^2 measures the quality of the fit of π and R_i^2, the quality of the fit of δ. According to this latter statistic, equation (2) estimated individually is appropriate for all countries but Finland and, to a lesser extent, for the Netherlands, the United Kingdom and the United States. This means that these countries do not behave like the majority and furthermore this behavior is not well explained by the model. One cannot compare R_i^2 and ρ_i^2 which do not measure the same reality. To compare the two fits (π and δ on Figure 1), one might compare the sum of squared errors (SSE_i) obtained for each country on the basis of the aggregate estimation and of the individual estimation respectively. The difference between them—columns (c) and (d)—gives what can be gained from individualizing the estimation. As expected, individual estimations are more accurate for all the countries.

Another way to check that point is to alternatively allow each country to have specific coefficients for each regressor in the general estimation. Then, by the way of a joint F-test, we can test if the individual parameters are significantly different from those obtained for the rest of the countries. The values of these tests are given in Table 4, column (e), along with the probability of accepting the hypothesis of equivalence in savings behavior between country i and all the other countries [column (f)]. According to that test, six countries seem to have a non-uniform behavior (with probabilities superior to 99 percent): Canada, Denmark, Italy, Spain, the United Kingdom and the United States. The last column (g) of Table 4 gives the variables towards which the most important deviance, if any, has been noticed. Not surprisingly, they vary across countries. Expected inflation, z_{it}, appeared as the most important source of deviation for 4 European countries (Austria, Belgium, Greece and Spain). The level of income, y_{it}, seems to affect differently savings behavior in at least four cases: Denmark, Italy, Japan and the United Kingdom. Finally, note that for Canada the deviant variables are the unemployment rate and the government deficit, while for the United States it is the rate of aged people in total population.

Similar tests for cross-sections over time are presented in Table A.2 in the Appendix. It appears clearly that there is more homogeneity over time than across countries. This is confirmed by the correlation coefficients presented in columns (a) and (b), the closed values observed for the SSE statistics in columns (c) and (d) and the F-tests reported in column (f). This is not surprising as savings

TABLE 4

TESTING COUNTRY DIFFERENCES IN HOUSEHOLDS' SAVING BEHAVIOR

		Correlation Coefficients		Sum of Squared Errors		Tests on Model Heterogeneity		
Country	n	$\rho^2(\delta)$ (a)	$R^2(\pi)$ (b)	SSE(δ) (c)	SSE(π) (d)	F-test (e)	$Pr[(\beta_{(\pi)}-\beta_{(\delta)})=0]$ (f)	Deviant variables (g)
				(10^6)	(10^6)			
Australia	16	0.710	0.989	301.8	5.3	1.91	0.067	—
Austria	24	0.806	0.901	227.5	63.2	1.034	0.407	z^*
Belgium	24	0.880	0.944	409.5	69.9	2.280	0.028	z^*
Canada	24	0.955	0.976	546.4	112.9	3.050	0.0001	u^{**}, d^*
Denmark	18	0.800	0.970	1089.5	75.3	7.882	0.001	y^{**}, d^{**}, r^{**}
Finland	24	0.378	0.331	295.8	176.0	0.817	0.575	—
France	24	0.918	0.968	192.1	36.0	1.066	0.385	—
Germany (F.R.G)	24	0.812	0.946	202.2	31.9	1.084	0.373	—
Greece	24	0.880	0.980	356.1	30.9	2.091	0.044	z^*
Italy	24	0.603	0.970	1451.7	68.0	11.490	0.0001	y^{**}, x^*
Japan	24	0.983	0.986	286.9	34.0	2.056	0.047	y^*
Netherlands	19	0.654	0.739	162.2	71.4	0.561	0.789	—
Spain	24	0.717	0.938	323.1	14.1	3.238	0.003	z^*
Sweden	19	0.724	0.845	268.0	70.6	1.989	0.055	—
Switzerland	24	0.839	0.953	308.2	44.5	1.722	0.102	—
United Kingdom	24	0.602	0.789	516.0	133.1	2.768	0.008	y^*
United States	24	−0.040	0.811	154.8	89.8	12.025	0.0001	r^{**}

Note: * and ** indicate that the corresponding parameters are significant at the 10% and 5% level, respectively. (δ) indicates the global model estimation and (π) the specific country estimation (see Figure 1).

functions are usually considered rather stable over time. Nevertheless, looking to the last column of Table A.2 where deviant variables are identified, the estimated model seems to be better suited for the years after the oil crisis.

To sum up, we have shown that to test the homogeneity in savings behavior across countries, one has to go beyond the first sight impression one can draw from a cross-section-time-series estimation. According to that first impression, most countries in our sample appear to react similarly to the major economic determinants of savings. Yet, if one goes further and checks whether individualizing the estimation does not improve the quality of the fit, it appears that several countries behave specifically towards savings. This result calls for much caution in interpreting works based on international panel data.

5. Conclusion

This paper has presented a comparative analysis of savings behavior across a sample of 17 countries. This is by no means the first work on the subject. Comparative studies of saving are quite usual with the intent of accounting for differences in savings rates[9] or checking whether they converge over time.[10] In this type of work, the emphasis is usually put on savings rates over a long period and one of the key issues is whether available data correctly account for the reality of savings. Our purpose is quite different. We do not want to compare savings rates *per se* but rather savings behavior as represented by a savings equation.

The first finding is that a large part of the variation in savings behavior of our sample studied over 20 years is attributable to the in-between variation across countries. In another paper dealing with savings in the European Community, we have tried to check whether those savings differences could not be accounted for by non-economic factors such as religion, geography, ideology, culture.[11] These factors are indeed shown to contribute to a large share of the variation in savings. This result is not surprising. In-between variations across countries are closely correlated with these non-economic factors. Differences across countries are indeed nothing but differences in religion, ideology, geography and culture. We have then attempted to explain the variation in savings which is not accounted by these factors through an aggregate savings function. It appears that for most countries such an approach is dominated by an approach based on individualized estimation. In other words, one cannot really speak of an homogeneous savings behavior across our sample of 17 countries. This is a relevant finding in times of increasing economic and financial integration.

Can we conclude that the sociological (read non-economic) approach is more powerful that the economic approach in explaining savings? This question calls for two final remarks.

In fact, the explanatory power of economics is more important than a quick reading of results indicates. For forecasting purposes, one focuses on the time series feature and thus neglects the international divergence. Then, the traditional

[9]Lipsey and Kravis, 1987.
[10]Carroll and Summers, 1987, Baumol *et al.*, 1989, chapter 8.
[11]Kessler *et al.*, 1988.

determinants are quite significant, particularly in an individual study. Second one could argue that the attitudes and the values which are specific to a country and which seem to induce a particular savings behavior are themselves shaped by economic factors. Studying this interaction between economics and taste formation is beyond the scope of this paper.

Data Appendix

Variables	Definitions
s	Net households' savings (OECD, a).
y	Households' disposable income (OECD, a).
g	Rate of growth of *per capita* GDP (OECD, a).
u	Unemployment as percentage of total labor force (OECD, b).
z	Expected inflation rate: $z_t = \lambda p_t + (1-\lambda)p_{t-1}$, with p_t: average rate of growth of consumption prices and $\lambda = 0.1$ (IMF).
d	Deficit in current outlay and income transactions of general government (OECD, a).
x	Tax rate: total direct taxes and social security contributions in total household income (OECD, a).
r	Ratio of population over 64 to total population at the middle of the year (OECD, b).

Note: variables s, y and d are in per capita values and in 1985 U.S. dollars. The adjustment variables are:

(a) estimated total population at the middle of the year (OECD, b),

(b) price index in private consumption, 1985 = 1.0 (OECD, a), and

(c) purchasing power parities in units per U.S. dollars mean values for 1985 (OECD, a).

The countries and years covered by the data are:

Australia [1973-88], Austria [1965-88], Belgium [1965-88], Canada [1965-88], Denmark [1971-88], Finland [1965-88], France [1965-88], Germany (F.R.G.) [1965-88], Greece [1965-88], Italy [1965-88], Japan [1965-88], the Netherlands [1970-88], Spain [1965-88], Sweden [1970-88], Switzerland [1965-88], the United Kingdom [1965-88] and the United States [1965-88].

Sources: OECD, a, *National Accounts Statistics.* OECD, b, *Labour Force Statistics.* IMF, *International Financial Statistics.*

APPENDIX

TABLE A.1

DECOMPOSITION OF VARIANCE

	Variable[1]		v	v_{bi}	v_{wt}	v_{bt}	v_{wi}	v^2_{wit}
s	Per capita households savings	(10^6)	126.14	105.27	20.87	3.74	122.40	13.7
		%	100.0	83.5	16.5	3.0	97.0	10.9
y	Per capita disposable income	(10^6)	1,264.67	793.79	470.88	406.69	857.98	45.0
		%	100.0	62.8	37.2	32.2	67.8	3.6
s/y	Saving rate		21,733	18,723	3010	688	21,045	2,358
		%	100.0	86.1	13.9	3.2	96.8	10.9
g	Growth rate (per capita GDP)		2,380	275	2,105	949	1,431	1,206
		%	100.0	11.6	88.4	39.8	60.2	50.7
u	Unemployment rate		5,941	2,097	3,844	2,271	3,669	1,616
		%	100.0	35.3	64.7	38.2	61.8	27.2
z	Expected inflation		9,304	2,508	6,796	3,734	5,570	3,107
		%	100.0	27.0	73.0	40.1	59.9	33.4
d	Per capita government deficit	(10^6)	76.20	47.92	28.28	13.75	62.45	144.9
		%	100.0	62.9	37.1	18.0	82.0	19.0
x	Tax rate		39,494	32,527	6,967	8,045	31,449	1,234
		%	100.0	82.4	17.6	20.4	79.6	3.1
r	Ratio of population over 64		2,086	1,612	474	407	1,679	80
		%	100.0	77.3	22.7	19.5	80.5	3.8

[1]See the Data Appendix for variable definitions and sources.
[2]Due to unbalanced data: $v_{wit} \neq v - v_{bi} - v_{bt}$.

TABLE A.2

TESTING TIME DIFFERENCES IN HOUSEHOLDS' SAVING BEHAVIOR

Period	n	Correlation Coefficients		Sum of Squared Errors		Tests on Model Heterogeneity		
		$\rho^2(\delta)$ (a)	$R^2(\pi)$ (b)	SSE (δ) (c)	SSE (π) (d)	F-test (e)	Pr $[(\beta_{(\pi)}-\beta_{(\delta)})=0]$ (f)	Deviant variables (g)
				(10^6)	(10^6)			
1965-66	26	0.517	0.456	3,978	2,943	0.842	0.554	u^{**}
1967-68	26	0.630	0.612	4,013	2,561	1.220	0.290	g^{**}, u^{**}
1969-70	28	0.733	0.616	5,221	3,776	1.211	0.295	y^{*}, g^{**}
1071-72	32	0.696	0.555	6,472	5,509	0.831	0.563	g^{**}
1073-74	34	0.768	0.617	5,182	4,696	0.411	0.896	—
1075-76	34	0.745	0.610	5,504	4,813	0.592	0.764	—
1077-78	34	0.760	0.624	5,287	4,643	0.542	0.804	d^{*}
1079-80	34	0.808	0.694	4,659	3,818	0.728	0.650	—
1981-82	34	0.772	0.624	4,485	4,135	0.302	0.952	—
1983-84	34	0.658	0.487	5,325	4,645	0.590	0.766	—
1985-86	34	0.572	0.352	6,500	5,569	0.846	0.551	—
1987-88	34	0.548	0.353	8,066	6,665	1.292	0.252	z^{*}

Note: * and ** indicate that the corresponding parameters are significant at the 10% and 5% level, respectively. (δ) indicates the global model estimation and (π) the specific period estimation (see Figure 1).

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