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Albert Ando

Luigi Guiso

Daniele Terlizzese

Daniel Dorsainvil

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ABSTRACT

Both young and old consumers appear to dissave too little for their behaviour to be consistent with a strict life cycle model. We concentrate on young households and document their behaviour drawing from Italian and Japanese data. We also provide a theoretical set-up which can account for the observed fact without relying on assumptions about the working of credit markets or the degree of foresight of consumers.

Albert Ando, NBER
Daniel Dorsainvil
University of Pennsylvania
3718 Locust Walk
Philadelphia, PA 19104

Luigi Guiso
Daniele Terlizzese
Bank of Italy
Research Department
Via Nazionale, 91
00184 Rome - Italy

I. Introduction (*)

The life cycle theory in its present form generates, at the individual level, the prediction that total saving, over the whole consumer horizon, is zero, whereas consumers reduce current savings in response to an increase in future expected income. At the aggregate level, two facts characterize saving: first, it is positive and represents a non-negligible proportion of current income; second, the saving rate is positively correlated with the rate of growth of aggregate income. Reconciliation of the predictions of the theory at the individual level with the above properties of macro data is generally achieved through the aggregation of consumers at different points in the life cycle. The process of aggregation, in so far as productivity or population growth assign a larger weight to consumers in their accumulation phase, might produce aggregate savings which tend to increase with growth.

The effects of aggregation are, however, unambiguous only when the preferred age pattern of consumption and the lifetime earnings profile are such that families do not dissave before retirement. If young individuals dissave significantly, given the larger weight assigned to them in a growing economy in the process of aggregation, total saving might very well end up being negatively correlated with growth.

(*) This paper is a short version of a broader article, which is part of a research project on savings sponsored by the Bank of Italy. Basic computations using Japanese data and the construction of the cohort means were completed in 1986-87 at the Osaka University, when Ando was given access to data from the 1979 and 1984 national surveys of family income and expenditure. We wish to thank Angus Deaton for helpful discussions and all the participants in the Helsinki conference for their comments. We also thank Luigi Sciamplicotti for valuable research assistance.

We will document, using micro data for Japan and Italy, that families and single persons both save and accumulate net worth throughout their working life, even when they are quite young and their current income is low relative to future income. Given this fact, the positive correlation between the rate of growth of aggregate income and the saving-income ratio can be explained quite easily.

The need for explanation, however, moves a step back: the earnings profile appears to rise steeply with age in most countries, especially for those with rapid growth such as Italy and Japan. It is then natural to expect (because of the consumption smoothing principle) young people to dissave. We must explain, therefore, why young people do not dissave. This is a shift in emphasis from the recent literature, in which much of the effort was devoted to devise modifications of the life cycle theory that could accommodate the relatively small dissaving by the older, retired families.

The mere lack of dissaving by very young households may be explained with the presence of liquidity constraints or myopia. The ingenious interaction of liquidity constraints with uncertainty, recently proposed by Deaton (1991), can even explain, within a buffer stock argument, a limited amount of saving; it is, however, probably inadequate as an explanation of the significant saving by very young households when their income is relatively low. We propose instead an explanation based on the possibility that, for very young households, due to the occurrence of (future) opportunities not available today, higher future income might be accompanied by larger "needs". The increase in current consumption induced by an expected increase in future income might then be small (or even negative). According to this interpretation, consumption will then be concentrated in those periods in which the opportunities are better. Opposite to the consumption smoothing, we obtain what might be called a "consumption lumping" principle.

In the next section we present evidence that young

families and individuals with relatively low current earnings anticipating rapidly increasing future earnings nevertheless save a significant proportion of their current income. We show that the reaction to anticipated changes in income is negligible for very young families; it becomes however sizeable and significantly different from zero for older cohorts. We also show that the level of net worth has a strong positive effect on consumption, indicating that families do follow a fairly long plan of asset accumulation. These evidences cast doubts on the hypothesis of myopic behaviour. On the other hand, given that the consumption level of very young households (aged less than 30) is relatively low, the fact that the consumption level of the slightly older age group (30-34 years old) remain quite low might be explained by the presence of habit persistence. In our data for Japan we do not find, however, evidence supporting this hypothesis.

In the last section, we outline a theoretical explanation and offer an illustrative example. We conclude with a general discussion where we contrast our theoretical explanation and empirical findings about young consumers behaviour against alternative explanations put forward in the recent literature.

II. The saving behaviour of younger households: an empirical assessment

In a recent interesting paper Carrol and Summers (1991) have presented a composite and well documented picture of consumption behaviour that is difficult to square with standard versions of the permanent income or life cycle theories. In particular they rely on micro data to show that the basic implication of a simple life cycle model is not borne out: there seems to be little evidence of low frequency consumption smoothing, as both young and older households dissave too little.

The behaviour of the second group has been thoroughly investigated, both empirically (Ando, Yamashita and Murayama (1986), Ando and Kennikell (1986), Hayashi (1986), Hayashi, Ando and Ferris (1988) among others), and theoretically (Davies (1981), Hurd (1986)).

Here we shall focus on the behaviour of younger consumers. Their behaviour is crucial to assess the consequences of aggregation for the level of total savings and its correlation with the growth of income. In principle, both positive savings and the positive correlation with the growth rate of the economy are consistent, in general equilibrium, with a representative agent model; the latter seems to require, however, too large a sensitivity of consumption decisions to interest rates as compared with the one usually estimated (or too large movements in interest rates as compared with those currently observed; see also Carroll and Summers, 1991). The aggregation of consumers at different points in the life cycle appears thus to be the most reliable mechanism to explain the macro correlation between savings and growth.

On a different level, whereas simple extensions of the life cycle theory have been able to account for the small dissaving of the old, the behaviour of the young has proven to be more difficult to rationalize. Liquidity constraints or myopia are often invoked to explain the lack of borrowing out of the higher future stream of income; while useful, these hypotheses are not entirely convincing (see the discussion in the last section). We hope that a greater emphasis on young people would eventually lead to discriminate among alternative interpretations of the saving behaviour.

II.1 Descriptive evidence: high saving rate by the young and a potential sample selection bias

Table 1 shows savings rates by age for Italian and Japanese households, together with the cross-section

earnings profile. The latter appears to be increasing with age. Adjusting it for increases in productivity, given the high growth experienced by both countries, would make the two profiles extremely steep, especially at the beginning of life¹. One would consequently expect life-cycle young consumers to decumulate substantial amounts of wealth (if endowed with any at the beginning of their working life) or to run negative saving.

The evidence is just opposite: younger households save a considerable proportion of their current income. Combining cross-section data for different years and looking at the annual change in net worth of the average household belonging to the specific age cohort, while giving a rather different measure of net accumulation, confirms the basic fact: in spite of steep earnings profiles young households, both in Italy and Japan, accumulate wealth².

A potentially important bias might arise from the fact that younger consumers still living as dependents within their families do not appear in the surveys. If (for whatever reason) they tend to consume more than what they earn (or, equivalently, if the young consumers who become independent are thriftier), the observed "oversaving" of the young might be a statistical illusion. Given the tendency for younger consumers both in Japan and Italy to live in their parents house long after they start working, this sample selection problem might potentially be important.

1. Assuming a rate of growth of productivity of 4 % in Italy and 5 % in Japan (approximately equal to the average growth of GDP per worker in the last 30 years in the two countries) the adjustment for growth would lead to a level of earnings in the oldest age bracket 2.2 times as large that in the youngest age bracket in Italy, and 2.6 times in Japan.

2. The larger estimate for saving implied by the change in net worth is partly due to capital gains on housing which have been substantial in Japan and Italy between the two years used to construct the figures reported in the table.

Before we proceed with more elaborate analysis, we check in the simplest possible manner if the living status of younger dependents makes a significant difference. Table 2 shows mean values of some key variables for a number of relevant groups. Our comments refer to Japan but, as can be easily checked, the same conclusions hold for Italy. Row A corresponds to families with one working adult aged 25-29 living in it (extended families), row B corresponds to pure nuclear families, while row C corresponds to a single, working person aged 25-29 living alone. For row A the saving-income ratio is .22 while for the sum of rows B and C, which represents a fictitious family comparable with the extended one, it is .16. Thus, while the level of income is basically the same (5,556 for row A and 5,731 for the sum of rows B and C), the saving-income ratio is 6% higher for the extended families. The conclusion that we draw from this table is that, if anything, younger working dependents save proportionately more than independent consumers of comparable age. Overall, it is thus difficult to interpret the behaviour of young households within a standard consumption smoothing paradigm. However, the issue deserves further scrutiny, both because of the potential shortcomings of univariate correlations and of the need to consider the response of younger consumers to (expected) future changes in earnings.

II.2 Young consumers and future income changes

If longitudinal data on both earnings and consumption were available it would be possible to construct measures of expected future earnings for each single consumer, and test for its effect on current consumption. Unfortunately, longitudinal data on both consumption and earnings are not usually available. However, combining-cross sectional data at different points in time it is possible to construct cohort average data for consumption and current and future earnings.

The basic idea is illustrated in fig. 1, which shows

two cross-section patterns of earnings for individuals (the head of the household) with specific characteristics (occupation, education etc.) over all ages. Suppose that the cross-section age-earnings profile aa was observed in year t , and bb was observed in year $t+h$ (to be specific, let t be 1979 and $t+h$ be 1984, the two years of the available Japanese surveys). Suppose further that the position p represents the actual earnings of a group of individuals who are aged 35 in 1979. They will be aged 40 in year 1984, and hence they will occupy the position s in 1984. This position we take to represent the expectation, in 1979, of five years ahead earnings, held by individuals who, in 1979, occupy position p . Note that this group's path of earnings over life is considerably steeper than aa or bb ³ and is in general quite different from the path that would be obtained by adjusting aa for the growth in the overall productivity of the economy.

The main problem in using a sequence of cross-sections to approximate panel data comes from the possibility that, between 1979 and 1984, the household changes its type: single persons may get married, married couples may divorce and so on. Since the mean income of those different household types is different, a careful handling of the type changes is required to obtain reasonable estimates of expected future income. Clearly, the issue is of

3. The movement from position p to position s represents two factors. The first, from s to q , is the age effect, which might include improvements in skills and therefore an increase in productivity that cannot be distinguished from other components of age effects. The second component of the movement, from q to s , is the productivity increase specific to calendar year, which is common to all members of the work force independently of age. Distinguishing empirically between these two sources of earnings change could be important since it is likely that changes due to calendar year productivity increases are more likely to be subject to surprises. Thus, the distinction is potentially fruitful to assess the "surprise" explanation of the observed savings-growth correlation in high growing economies.

particular relevance for younger consumers who are at the center of our attention⁴.

Consider then the population of ordinary households (husband and wife, their children and perhaps other members) aged between 30 and 35 that existed in 1984. Let us focus our attention on the male head of each household. He could have come from one of four groups. Firstly, he may have already been the head of the same household. Secondly, he could have been a single person living independently. Thirdly, he could have been a working dependent adult in someone else's household, most often that of his parents'. The fourth possibility, namely, the person may have been a non-working adult dependent in some one else's household, can be dismissed for our purposes since there are very few non-working dependent adult males once they reach the age of 25.

We shall refer to type i families, $i=(OF, SF, DA)$, and type j families, $j=(GOF, GSF, GDA)$, where the symbols represent, respectively, ordinary families with married couples at the core, male single person families, and working male dependent adults in 1979 and 1984, and G is mnemonic for grown. They are aged 25-29 in 1979, and 30-34 in 1984.

We do not have information to match precisely each type i family with a type j family. By making strong assumptions, we can however deduce the transition probabilities. We assume, first of all, that all families in OF will move to GOF . Since the divorce rate in Japan is extremely low and the mortality rate at such young age is also low, this seems a reasonable assumption. We also assume that families in SF will be either in GSF or in GOF and families in DA will be either in GDA or GOF , that is we assume that a single person does not become a dependent adult, nor a dependent adult becomes a single person. This

4. A similar problem, arising from older people merging into one of their children households, has been tackled by Ando (1986) and Hayashi, Ando and Ferris (1988).

may not be a reasonable assumption, but without it, it would become extremely hard to proceed. The possible transition paths are illustrated in Figure 2. From the number of families and individuals belonging to those groups, obtained from the 1980 and 1985 censuses, we estimated the transition probabilities, that are then used in the computation of the expected future earnings of each type i family. We verified that the number of corresponding families and individuals in the samples of the National Survey of Family Income and Expenditure, multiplied by sampling ratios, approximate the census figures fairly well.

The remaining step is to divide these family types into smaller groups so that we can construct a set of cohort means to be used in the estimation. We have used occupation, location, and the number of children as classificatory variables, and we have managed to obtain about 70 cohorts both for the 25-29 years old age groups, and the 30-34 years old groups.

As mentioned before, we depart in this paper from the standard approach in constructing expected earnings, that adjusts for the general productivity gains over time the cross-section pattern of earnings followed by families with characteristics similar to those of the household in question. For each cohort in 1979 the level of future expected earnings is defined as the mean earnings of the corresponding cohort in 1984, using as weights the transition probabilities computed as shown above; that is we assume a perfect foresight forecast⁵.

II.3 Empirical findings.

The regression results relative to the 1979 survey

5. This procedure has the shortcoming that it covers only five years. For the young groups with which we are dealing here, the relevant expected earnings should cover the major portion of their working life and hence some 30 years or so.

are shown in Table 3, part A. Regressions were run dividing all variables by earnings in 1979 (Y79). For ease of interpretation, results are presented rescaled to the level form. The two columns refer respectively to households whose head is aged 25-29 and 30-34 in 1979. Considering first the younger consumers, we note that the coefficient of current earnings (after the terms KID and MEM are taken into account), is .584, against the .052 for expected future earnings (denoted as EY84). Further, the coefficient of EY84 is not at all significant. This result appears to confirm the contention of Carroll and Summers (1991) and Carroll (1989) that expected future income does not have much effect on consumption or savings. On the other hand, the coefficient of net worth in 1979, W79, is quite large, .05, with a t-ratio of 4.58. This means that, contrary to the shortsightedness explanation, younger consumers plan for the future, although they adjust very slowly if they find that there is a significant gap between their current and planned pattern of asset accumulation.

The most troublesome feature of this regression is that the constant term is quite large, as it accounts for about 20% of the mean value of the dependent variable. In earlier work by Ando, Yamashita and Murayama (1986), using the 1979 survey, a similar equation for the age group 20-29 was estimated, although EY84 was not present. The constant was significant, and they showed that it represented the effect of the position of the household in the distribution of earnings. We believe that the large constant terms on the regression estimates reported here result from the same cause.

For the older age group, the coefficient of current income is considerably smaller (.294, taking into account terms in KID and MEM), and the coefficient of expected income is large, .169, and significant. This is a clear indication that the older group takes future earnings into account in determining their consumption. Net worth has a somewhat

smaller coefficient, but it remains an important variable in the regression⁶.

It is difficult to square these results with the hypothesis of myopic behaviour. Also, simple models of consumption with liquidity constraints appear to be contradicted⁷. It is interesting, in our view, that the effect of future earnings on current consumption becomes significant only for households who are at a later stage of their life cycle, although they are still quite young. A possible explanation is that liquidity constraints, while binding for very young households, cease to bite fairly soon. An alternative one, that is consistent with the approach presented in the next section, turns on the possibility that young consumers might be motivated to save by the anticipation of future opportunities that might be lost, or ineffectively exploited, had too large a fraction of lifetime resources been already used up. The reaction of consumption to future expected income might be initially negligible, as changes in income could be matched by changes in consumption opportunities. We argue, however that, due to learning, the flow of new opportunities that the consumer can reasonably anticipate drains away as he grows older. As a result, the standard life cycle behaviour would then tend to prevail.

In table 3, part B, the results relative to the 1984

6. To assess whether changes in earnings due to calendar year increases in productivity have a different impact on consumption from changes due to the age effect, according to the classification made in note 3, we have run a regression splitting EY84 into these two components. Unfortunately, for the present such a distinction has been possible only for the younger group; in this case both components turned out to be not significantly different from zero.

7. A positive effect of future expected income on current consumption might be consistent with the presence of liquidity constraints in the Deaton's model, in which the anticipation of higher future income reduces the need for precautionary saving.

survey are reported. Since we have only two surveys available, we cannot construct the perfect foresight earnings forecast for the 1984 cohorts. We investigate instead the possibility that past consumption (C79) might have some effect on current consumption, representing habit persistence. It turns out that C79 is completely insignificant in these regressions and we conclude that, for this set of data, habit persistence is not an important factor in the determination of current consumption.

III. The life cycle of opportunities

In the conventional approach, economic agents are identified with a given preference relation defined over a given consumption set. Although this description is inherently static, some of the goods could be interpreted as available only in the future, and the preference relation could be dependent on the state of the environment, as the description of each good involves the contingencies in which it will be consumed.

However, in the absence of a complete set of markets in which, at the beginning of the agent's life, all the commodities so defined can be exchanged, it seems more natural to define not only agents' decisions but also their "identities" as coming out of a sequential process.

At the start, each agent has a preference relation involving a (usually small) set of commodities, namely those with which he is most familiar, perhaps because of his parents' behaviour. But he probably does not have a clear opinion about other goods, certainly those not yet invented but also, and more significantly, all those consumed in different social strata.

As the agent grows older and follows his career, his position in the social ladder changes, he moves to different places and the composition of his family evolves; he gets acquainted with new people, observes new habits and comes

across new consumption patterns. Indeed, the agent's own social identity, as defined by his relationships with other people, can be said to evolve with age.

More precisely, at the beginning of their working lives individuals face a wide range of possible paths all of which might involve not only different patterns of lifetime earnings, but also a different structure of needs and preferences. Later on in life some of the original possibilities, as a result of both choice and chance, will no longer be feasible, and each individual will eventually settle down in what might be called a "social niche".

The social niche to which the individual belongs entails, to some extent, a preferred consumption structure and, for this reason, we interpret the discovery of the niche as providing the opportunity for improving consumption choices. It is then intuitive that people have an incentive to postpone some of their purchases until they have learned in which social niche they will end up.

To use a more formal language, we are describing a situation in which the utility is the joint product of consumption and (social) environment. The two "factors" are complementary, so that a better environment entails higher marginal utility of consumption.

III.1 An example

Several models exemplifying these ideas could be constructed. The social niche, for instance, might be identified with the agent's "true tastes", unknown at the beginning of his life and progressively discovered.

It can be shown (see for details Ando, Guiso and Terlizzese (1991)) that the opportunity of learning about his own preferences leads the younger consumer to accumulate resources for the time when, having grown up and "discovered himself", he will be able to extract higher utility from consumption. Ignoring the evolution of preferences over the

life cycle leads to underpredict the saving of the young cohorts (or to overpredict their borrowing).

A second example, presented here in more detail, identifies the niche with the job position. Suppose that there are various jobs in the economy differing in income, working conditions and the overall social environment with which they are associated⁸. They can often be ranked according to a dominance criterion, as some involve both a larger income and a nicer environment. To take one example, consider the difference between a mine worker and a university teacher. The switch from the first to the second job, quite apart from the higher income, dramatically improves the health conditions and the cultural and social attributes of the living environment. Similar, though less extreme, differences are usually involved in the change from a job as an unskilled worker to a skilled craftsman, from the latter to a managerial position and, more generally, whenever there is a change in the type of job.

We believe that it is reasonable that the better the conditions in which work takes place and the stronger the positive externalities generated by the relationships with colleagues and the social circle associated with a given job, the higher is the utility of each unit of consumption (on this point, see also Arrow, 1974).

Consider then an economy in which there are two types of jobs, σ_h and σ_l , corresponding to two rungs of the social ladder (high and low respectively). σ_h dominates σ_l , as it entails both a better environment and a higher income ($y_h > y_l$). Consider also an agent who lives for 2 periods, consumes c_i in period i ($i=1,2$) and works, in the first period, in job σ_l . The future can, however, bring the opportunity of social promotion and the agent anticipates that, with probability p ,

8. The idea that there is a strict connection between the consumer job position and the social niche he belongs to, i.e. his social status, is emphasized by Solow (1990).

he will be offered the better job.

Following our previous discussion, we assume that

$$(1) \quad u_1(c, \sigma_h) > u_1(c, \sigma_l)$$

where $u(\cdot)$ is the instantaneous utility function, the subscript on the $u(\cdot)$ denotes partial derivative⁹.

The agent then solves:

$$\text{Max} \quad u(c, \sigma_l) + (1-p) u(c_1, \sigma_l) + p u(c_2, \sigma_h)$$

$$\begin{aligned} \text{s.t.} \quad c + s &= y_l \\ c_1 &= y_l + s \\ c_2 &= y_h + s \end{aligned}$$

where s represents saving and, for the sake of simplicity, the subjective discount rate is set equal to the interest rate and both equal to zero. This problem, under assumption (1), will be referred to as problem (A).

To have a benchmark, consider in the previous problem the case in which the only difference between the two jobs is the income they offer, so that the utility function is independent of σ and, in particular, assumption (1) is replaced by:

$$(2) \quad u_1(c, \sigma_h) = u_1(c, \sigma_l) .$$

We shall refer to this modified problem as problem (B). It is useful to write down explicitly the first order

9. We assume that the agent utility depends directly on his position in the social ladder. Alternatively one might assume that utility only depends on goods, some of which are not marketable but can be acquired by status. A similar approach is taken by Cole, Mailath and Postlewaite (1991) who also emphasize the interaction between agents social status and savings decisions in a general equilibrium context.

conditions of both problems, for the sake of simplicity assuming interior solutions:

$$(FOC1) \quad u_1(y_1-s, \sigma_1) = (1-p) u_1(y_1+s, \sigma_1) + p u_1(y_h+s, \sigma_h)$$

$$(FOC2) \quad u_1(y_1-s, \sigma_1) = (1-p) u_1(y_1+s, \sigma_1) + p u_1(y_h+s, \sigma_1)$$

For given p , let us call $s^*(p)$ the solution of (FOC1) and $s^\wedge(p)$ the solution to (FOC2); the latter case is the one usually considered in the literature.

Considering now (FOC1) and using assumption (1), it is straightforward to show that $s^*(p)$ is larger than $s^\wedge(p)$ and, provided that the gain from social promotion is large enough, s^* can be positive even when s^\wedge is negative.

As shown in Ando, Guiso and Terlizzese (1991) a second interesting implication of the model is that the effect on saving of an increase in future expected income can be positive and, if negative, smaller in absolute value than that found in the standard case.

This is so when the increase in expected income is assumed to result from an increase in the probability of the better job. This follows from the fact that a rise in p entails, together with the income increase, an increase of the probability of the opportunity: the larger future income goes hand in hand with a better future environment for consumption, and this offsets, to some extent, the incentive to borrow out of the larger income and increases current consumption.

IV. Discussion

Simple versions of the life cycle theory have difficulty in explaining the observed facts regarding the savings of younger consumers. An amendment of that theory appears to be called for, and two main directions have been explored in the literature: the possibility of liquidity

constraints and that of myopic behaviour.

Liquidity constraints represent a rather obvious explanation of the relatively small amount of borrowing by the youngest generations, as it simply postulates that they cannot borrow.

Although this explanation simply shifts the question one step removed, as the presence of borrowing constraints should itself be theoretically justified, it does capture some important features of the actual working of markets.

There are, however, grounds for doubting whether credit market imperfections are enough to explain the observed deviation of young people's behaviour from that postulated by life cycle theory.

Firstly, taken literally, the borrowing constraint assumption would imply that agents should be on the constraint, consuming all of their income, whereas we observe non-negligible savings, even in the early part of their working lives. On the other hand, Deaton has recently shown that the existence of positive savings can be made compatible with binding liquidity constraints when there is uncertainty and the consumers are either "impatient" or "imprudent"¹⁰. Both assumptions are somewhat unusual, and their nature implies that the savings thus generated are not likely to be large¹¹.

Secondly, and more importantly, the consumption pattern of younger generations follows closely that of income in countries that differ markedly in the degree of development of financial markets, so that the incidence of

10. The role of prudence is not directly examined by Deaton, but a simple extension of his argument to a model with finitely lived consumers establishes the claim.

11. In Deaton's simulations the amount of saving that can be generated is in general smaller than 1% of (mean) income, a relatively small amount when compared with the actual saving of young households.

liquidity constraints is likely to be very different.

The second explanation taken up in the literature, namely short-sightedness, simply implies that people do not borrow against future income, as that is not foreseen.

The status of this hypothesis is not clear, however. It appears as an interpretation, superimposed on models whose structure has little to do with myopic behaviour.

On the empirical side, the short-sightedness is invoked to explain a low (or zero) coefficient on expected future income in regressions explaining current consumption (see Carrol (1989)). In the same regressions, however, current wealth appears to have a coefficient significantly different from zero and smaller than one and this is not consistent with short-sighted consumers.

In this paper we have provided evidence that young people's consumption responds to some extent to future earnings. We have also offered an explanation of the apparently low responsiveness that preserves the forward looking feature of the life cycle theory. We outlined a theory where current savings can be interpreted as a choice of flexibility, as the presence of future opportunities can be an incentive to postpone consumption to those periods in which it yields greater utility.

The idea that resources should be allocated when they produce more utility is, of course, not a distinctive aspect of our theory, as it is just a rephrasing of the assumption that agents maximize their utility. Life-cycle theory is obtained when this assumption is coupled with an uneven temporal distribution of resources (the hump shape of labour productivity). Implicit in the argument is that the opportunities for consumption are evenly distributed over time. Only under this assumption, in fact, does one obtain the well-known "consumption smoothing" principle.

By contrast, we assume that, due to learning, consumption opportunities are unevenly distributed over the life cycle. Together with the first, this assumption implies

that consumption will be (relatively) concentrated in those periods in which the opportunities are better. Instead of consumption smoothing, we obtain "consumption lumping". However, in spite of this apparent contrast our model does not necessarily contradict life cycle theory. Quite the contrary, it can be taken as complementing it in the explanation of the behaviour of young people.

It is also useful to contrast the theory explored in this paper with the precautionary motive, which has recently received considerable attention in the literature. When (earnings) uncertainty is present, agents have an incentive to save in order to "cushion" against fluctuations in available resources. The idea often expressed as "saving for bad times".

The theory of saving we propose also considers uncertainty, but the role of saving is to move resources across time, from periods with less favorable opportunities to periods with more favourable ones. Rather than "saving for bad times", we propose a rationale for the opposite behaviour, namely "saving for better times".

We do not think that the motivation for saving that we consider is necessarily in contradiction with a precautionary motive. The latter, as has recently been recognized, mainly characterizes the behaviour of consumers whose goal is that of smoothing fluctuations of income occurring at "high frequencies". In our theory, the anticipation of better opportunities motivating the saving decision can in principle refer to a point very far in the future. Thus, we see our theory complementing, rather than replacing the precautionary theory of saving.

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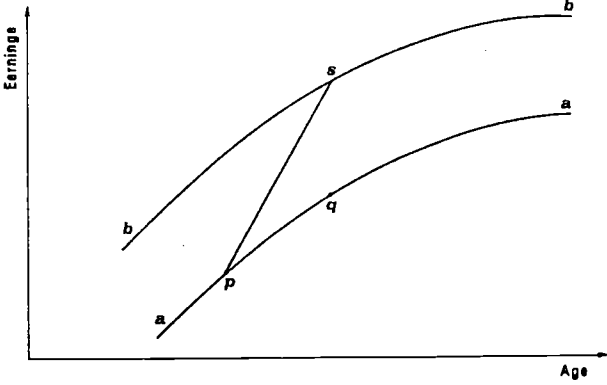


fig 1

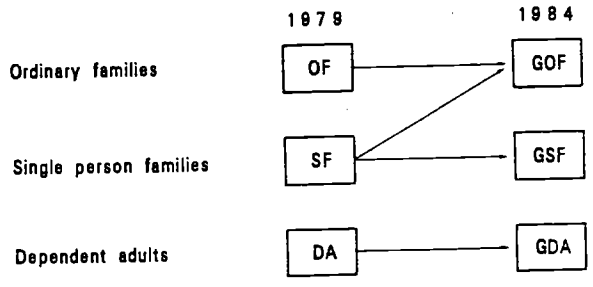


fig 2

Table 1

Younger households saving, disposable income, wealth accumulation and earnings by age. Italy and Japan

Age of the head of the household	I t a l y				J a p a n (3)				
	Saving (1)	Annual change in wealth (2)	Disposable income	Earnings	Age of the head of the household	Saving (4)	Annual change in wealth (5)	Disposable income	Earnings
20 - 23	2,744	-	21,391	15,253	20 - 24	405.2	584.4	1640.5	1577.1
24 - 27	3,504	9,267	23,229	17,232	25 - 29	404.6	745.9	2252.6	2101.9
28 - 31	5,076	12,238	27,109	20,103	30 - 34	391.4	952.5	2943.1	2713.9
32 - 35	6,205	10,103	29,613	23,488	35 - 39	478.3	1090.7	3579.1	3231.9
36 - 39	5,611	16,387	31,786	25,505	40 - 44	586.1	1143.4	4044.3	3620.7
40 - 43	7,903	9,531	33,856	26,971					

Sources: Italy: Indagine sui bilanci delle famiglie, Banca d'Italia, 1987 and 1989. Data are expressed in thousands of 1987 lire. Japan: National survey of family income and expenditure, 1979 and 1984, Status Bureau, Government of Japan. Thousands of yen.

(1) Defined as household's disposable income minus household's consumption expenditure.

(2) Annualized change in net worth between the end of 1987 and the end of 1989, in 1987 prices.

(3) These figures represent a weighted average for ordinary families (married couples, their children and other members such as retired parents), single person households, and working male adults living in another household. See also the explanation in the text on the construction of cohorts.

(4) Defined as household disposable income minus (economic) consumption.

(5) Weighted average of the annualized change in net worth for ordinary and single households between the fourth quarter, 1979, and the fourth quarter, 1985, in 1979 prices, and the saving of male, working dependent adults (mostly living with their parents). For the last group, we are using saving defined as income minus consumption since we do not have information on their assets and liabilities. This concept includes real capital gains and losses, especially on values of the residential property.

Table 2

Disposable income, consumption and net worth by type of households: Italy (I) and Japan (J)

	Disposable income		Consumption		Net worth		Saving rate	
	I	J	I	J	I	J	I	J
A Families with one working adult aged 25-29	46,633	5,556	29,664	4,334	150,075	23,879	.36	.22
B Pure nuclear families	28,411	3,618	21,646	3,174	89,552	15,527	.24	.12
C Single person families aged 25-29	16,932	2,113	16,565	1,667	19,840	4,083	.02	.21
D Combined households (B+C)	45,343	5,731	38,211	4,841	109,392	19,610	.16	.16

Source: Italy: Indagine sui bilanci delle famiglie, Banca d'Italia, 1988 - Data for Italy are expressed in thousands of 1987 lire - Japan: National survey of family income and expenditure, 1979, Status Bureau, Government of Japan. Thousands of 1979 yen.

Table 3

Dependence of younger households consumption on current earnings, expected future earnings and net worth		
(dependent variable: consumption in the 1979 survey)		
A	Age of household head in 1979	
	25 - 29 n. of cohorts = 62	30 - 34 n. of cohorts = 71
constant	454.4 (5.17)	1082.8 (7.15)
Y79	.506 + .049 KID + .016 MEM (2.57) (5.45) (.38)	.198 + .048 + .125 MEM (2.34) (7.61) (3.78)
EY84	.052 (.79)	.169 (3.65)
W79	.05 (4.58)	.025 (2.55)
R ²	.64	.72
Mean of	{ C79 = 2517.1; KID = -1.47; MEM = .41 }	{ C79 = 2880.6; KID = 1.52; MEM = .41 }
Dependence of younger households consumption on current earnings, past consumption and net worth		
(dependent variable: consumption in the 1984 survey)		
B	Age of household head in 1984	
	30 - 34 n. of cohorts = 62	35 - 39 n. of cohorts = 71
constant	1081.0 (4.75)	1012.7 (3.95)
Y84	.420 + .030 KID + .215 MEM (6.08) (3.01) (2.90)	.446 + .030 + .128 MEM (7.34) (3.44) (1.64)
C79	-.75 (-.69)	-.032 (-.22)
W84	.037 (4.66)	.032 (6.25)
R ²	.71	.77
Mean of	{ C84 = 2919.4; KID = -1.54; MEM = .16 }	{ C84 = 3321.8; KID = 1.52; MEM = .18 }

Legend:

KID = Number of children 17 years or younger;
MEM = Number of members in the family, other than husband, wife and their children.