In this assessment we discuss the issues raised by the papers in this issue of the Oxford Review of Economic Policy in the context of economic models of household consumption and saving. We also provide a discussion of what we consider to be some important areas in the current debate surrounding theories and evidence regarding saving behaviour. We highlight the differences that arise from considering partial, as opposed to general, equilibrium models, and in looking at developed, as opposed to developing countries. We also discuss current policy issues relating both to the adequacy of household saving and to the distribution of saving across households, or across asset types, as well as the need for more microdata on saving and asset holding.

I. INTRODUCTION

Saving is an issue of fundamental importance to academic economists and policy-makers alike. While, for an individual household, saving is essentially a way to move resources over time, for the economy at large, the supply of saving represents an important source for the financing of investment. Indeed, the rate of saving of a country has been found to be strongly correlated with investment and growth rates. While different theories, implying different direction of causalities, have been proposed to explain these correlations, they are often mentioned as a motivation for the necessity to increase household saving rates. More recently, a number of important developments have brought the debate on the determinants of household saving to the centre of the policy arena. The large demographic transi-

1 We gratefully acknowledge the financial support of the ESRC Centre for the Microeconomic Analysis of Fiscal Policy at the Institute for Fiscal Studies (IFS). Co-funding has been provided by the Leverhulme Trust under the IFS research programme, entitled ‘The Changing Distribution of Consumption, Economic Resources and the Welfare of Households’, of which this study forms a part. Any errors are attributable to the authors alone.
tions through which most developed countries are going have made most existing pay-as-you-go (PAYG) pension systems unsustainable, at least with the existing parameters. This has stimulated a debate on the reform of unfunded pensions, and the resulting trend towards (partly) privatized and funded pension systems has in turn stimulated a lively debate on the adequacy of household savings in financing consumption after retirement. According to a somewhat paternalistic view, consumers need to be encouraged, educated, or even compelled to save more during their working lives to avoid poverty after retirement. In the absence of evidence showing market failures, this raises separate issues about the degree to which governments should intervene to encourage saving for paternalistic reasons. As a result, research into potential market failures, and more generally the ‘adequacy’ of household and individual saving has become important. Merrill Lynch, using a microeconomic simulation study, has started computing an ‘adequacy index’ which is meant to compare the actual savings a group is making to the optimal level. At the same time, several economists have started to develop models that go beyond the life-cycle and permanent-income models that have taken centre stage in the last 50 years. These models include features such as the lack of self control, time inconsistencies, and so on which could, in some circumstances, provide justification for government intervention.

Related to the perceived necessity to stimulate household savings is the debate on the effectiveness of tax incentives as a tool to encourage saving, either in total, or in a particular form. Even were it desirable to stimulate household saving, however, it is not completely clear what would be the best way to achieve such a goal. The provision of tax incentives and special saving instruments might or might not work, and may work differentially for different population groups. At the same time, changes in the taxation of saving also have implications for the optimal portfolio of assets, for the overall level of distortion introduced by the tax system, and, possibly, for labour mobility.

Finally, the trend towards private and funded pensions (which in some countries, such as the UK, is already well advanced) also generates a number of policy issues related to distributional factors. The downsizing of a progressive public pension system increases inequality and poses legitimate questions about the sectors of society that are excluded, for a variety of reasons, from such a system. The withdrawal of the state from the provision of pensions may or may not be desirable on efficiency grounds, but almost certainly has important distributional consequences. Indeed, the inequality in the distribution of pension and non-pension wealth is substantial, and one area of interest is precisely how such inequality changes with reforms to pensions and the taxation of saving, the difference between the adequacy of mean and median savings, and the degree to which low-wealth households can, or should, be encouraged to save in various forms.

In this issue, we collect several papers that look at these, and other, aspects of the debate about household saving. The papers can be classified in two dimensions. One set of papers looks at various theoretical and empirical developments in the analysis of individual saving behaviour. Another set of papers looks at different regions (the USA, the UK, Europe, and developing countries) and their different policy problems. The aim of this introductory paper is to put the papers into context while, at the same time, filling some of the gaps left by these papers. Neither this introductory paper, nor the issue in general, is a survey of the existing literature. There are some excellent recent surveys on the saving and consumption literature (see Deaton 1992; Browning and Lusardi, 1996; Attanasio, 1999; Browning and Crossley, 2000) and the interested reader is referred to them. This paper, and indeed the whole issue, also focuses solely on household saving. We therefore exclude completely the analysis of both corporate and government saving. This is not to say that these components are unimportant. Third, the papers in this issue are not homogeneous. Indeed, the reader will find not only the analysis of different aspects of saving and of different countries, but also very different opinions. We do not attempt to arbitrate between competing views. Indeed, we actively encouraged a diversity of papers specifically to reflect the current diversity of research into household saving. The main aim of this paper is to provide a discussion of what we think are the most important issues in the current saving debate, both at the academic and at the public-policy level. There is no consensus about which theoretical models best fit the data and which public-policy measures are most effective (not least because one
What is clear is that, when designing policy interventions, a good understanding of the behaviour a policy-maker is trying to affect and of the relevant incentives is necessary. And yet, no agreement exists among economists and/or policy-makers about which model better describes observed saving behaviour. Even were one to know the truth about values of behavioural parameters, it would not be easy to use the models for policy analysis. The fact that they can be analytically very complex and often do not admit analytical solutions does not help. A consequence of this situation is the fact that, while academic economists have been using very elegant mathematical models that can deal in a sophisticated and rigorous way with uncertainty, dynamics, and so on, policy analysis is often only based on simple correlations and descriptions of data. Therefore, the general aim of this issue is to show that an informed policy analysis needs to be grounded on a sound theoretical basis and that the most useful theoretical developments are those that have direct and useful policy implications. In addition to this general point, the papers demonstrate the advantages of analysing individual-level data. Real economies are characterized by large heterogeneity in various dimensions. Aggregation is a serious issue that cannot be neglected when analysing saving behaviour. One of the main implications of the basic model that we consider, the life-cycle model, is that the incentives to save of people of different ages are very different. It is therefore important, even if one is only interested in understanding the aggregate saving behaviour of an economy, to analyse and understand individual data. This is easier said than done. In addition to the analytical and modelling difficulties, as we argue below, one has to deal with the paucity of household-level data of good quality containing information on consumption and savings. These points are relevant for all the most important issues currently present in the policy debate on savings. Pension reform and the consequences of ageing, the adequacy of private savings for financing future retirement, tax incentives to saving and their desirability and effectiveness: none of these issues can be sensibly discussed without a sound economic model and without the measurement of the relevant parameters that one can only derive from micro data.

The rest of this Assessment is organized as follows. We first discuss what we think are the most important theoretical models of saving and consumption behaviour. We then move to discussing what we think are the most important public-policy issues relating to saving, trying to stress the links to the models discussed in the previous section. Section IV concludes the paper.

II. MICRO THEORIES

Saving is an intrinsically dynamic phenomenon. Households save at a given point in time so that they (or their offspring) can consume later. All modern theories of saving behaviour recognize explicitly the dynamic dimension of savings. However, there is little agreement on which is the most relevant model for describing household behaviour. For almost half a century, the life-cycle model has been at the centre of the academic and policy debate. More recently, however, several theories have been proposed that violate one or more assumptions usually made within the life-cycle framework. In this section, we discuss the life-cycle model in its most recent incarnation as well as some of the alternatives that have been proposed recently. The aim of the section is not that of giving an exhaustive survey of the literature. Instead, we want to point out what are, in our opinion, the most promising research directions from a policy point of view.

(i) The Life-cycle Model

There is some confusion in the literature as to what is meant by the life-cycle model and by the permanent-income hypothesis. Some authors label as the permanent-income hypothesis an infinite-horizon model in which consumers’ utility function is quadratic. In such a model, interest rates are typically assumed to be fixed and the only source of uncertainty stems from labour income. The life-cycle model, instead, is often thought of as a situation in which the main motivation to save is the desire to

2 Of course private saving includes also corporate saving. In this paper, however, we focus on household saving.
smooth consumption in the face of changes in income, the largest of which occurs when an individual retires. Finitely lived consumers are typically assumed to face perfect asset markets.\(^3\)

In our opinion, such an interpretation of the life-cycle model is somewhat restrictive. The basic idea behind the life-cycle model is the recognition that one can think of the allocation of resources over time in the same fashion that one thinks of the allocation of resources among different commodities at a point in time. If one takes this logic, then the most important determinants of consumption expenditure (and therefore of saving) become the total amount of resources available over the relevant horizon and inter-temporal prices and preferences. The details of the dynamic optimization problem faced by the consumer are then just that: details. Whether consumers exhibit precautionary savings, whether there is a relationship between expected consumption and income movements, whether individuals save to accumulate bequests, and so on, depend on the nature of preferences (whether the marginal utility of consumption is convex,\(^4\) whether it depends on labour supply, and whether there is an operative bequest motive) and on the markets individuals face (whether it is possible to borrow and at what price). In other words, the life-cycle model is a conceptual framework that needs to be filled with the appropriate details to make it fit to the available data.

Having stressed the analogy between the intra-temporal and inter-temporal allocation of resources, one should also stress, however, two important differences. The first is uncertainty; the second is the fact that inter-temporal trades can be limited either by the lack of the appropriate markets or by technological considerations.\(^5\) Uncertainty is important not just from a theoretical point of view. As we have already mentioned, if the marginal utility is convex (as is perhaps plausible) uncertainty can generate additional saving solely as a result of the so-called precautionary motive. Likewise, constraints to inter-temporal trades are likely to affect in an important way the level of consumption (and therefore saving). The presence of binding liquidity constraints that prevent households from borrowing are likely to decrease current consumption and therefore increase aggregate saving. And even when they are not binding, the possibility of liquidity constraints will affect in an important way current consumption. Indeed, it has been shown that the presence of liquidity constraints induces behaviour similar to that related to precautionary saving.

It took about 20 years from the introduction of the life-cycle model in the 1950s to the rigorous treatment of uncertainty in the late 1970s. Expected utility maximization and rational expectations were the tools that were used to formalize the inter-temporal maximization problem faced by a generic consumer in an uncertain environment. However, the ability to deal with uncertainty came at a price. In most realistic and plausible models it is not possible, without extremely restrictive assumptions, to derive an explicit solution for consumption or saving. Instead, the focus is on the first-order conditions one can derive from the inter-temporal optimization problem, the so-called Euler equations. These Euler equations have been extensively used in empirical consumption research to estimate preference parameters and test various specifications of the life-cycle model.

The Euler equation approach has the advantage of stressing the basic idea behind the life-cycle model (the fact that the ratio of—expected—marginal utilities is made equal to inter-temporal prices) and of providing orthogonality restrictions that can be used to identify structural parameters and test the validity of a given specification. However, the Euler equation, crucially, does not provide a consumption function. The solution to a dynamic problem with uncertainty is difficult because the future affects current decisions in a complicated fashion. Moreover, every aspect of the future affects current decisions. The Euler equation cuts through all this by using the fact that the marginal utility of consumption is equal, in equilibrium, to the marginal utility of

\(^3\) Both models typically assume an inter-temporally separable utility function; that is, they assume that consumption at a given date only affects utility at that particular date.

\(^4\) A convex marginal utility of consumption induces precautionary saving: an increase in the uncertainty about future income faced by an individual will induce consumers with a precautionary saving motive to increase their savings (see Carroll, 1997).

\(^5\) To these one should probably add the possibility of bequests.
wealth. As the latter, according to the model, moves as a martingale, considering the changes in marginal utility gets rid of this complicated and unobservable term. However, in eliminating the marginal utility of wealth, one loses the ability to determine the levels of consumption as a function of the relevant state variables. In other words, one has an equation for the expected changes in consumption but not for its level. This is a big price to pay, as an equation for the level of consumption is necessary to determine the effect of any policy on saving. Only in very restrictive models, such as those with quadratic utility, does one get an equation for the level of consumption.

The simplest textbook version of the life-cycle model is very simple and intuitively attractive. In the face of a hump-shaped income profile, rising with experience and tenure until retirement and after that dropping dramatically, consumption is kept either flat or slightly increasing or decreasing—depending on the relationship between the discount factor and the interest rate. Unfortunately, reality is much more complex than this. While consumption expenditure is likely to affect individual utility, many other variables are also likely to interact with it. Family size and composition have obvious effect on the utility a given amount of consumption affords. Labour-supply behaviour is also likely to affect it, if for no other reason than because our measures of consumption expenditure include labour-related expenses and because labour-force participation is likely to induce the substitution of home-produced services with market goods. It is therefore important to allow for all these factors in our theoretical models if one wants to bring them to the data and hope they fit. Moreover, it is important to take into account and allow for the substantial amount of heterogeneity that one sees in individual data. This implies that tests of the validity of the model are far from straightforward.

While it is easy to reject simple versions of the model, the most recent evidence indicates that it is possible to construct sophisticated versions of the model that are able to fit the data, at least for households in the middle of their life cycles. These versions typically include flexible specifications of the way in which demographic variables affect utility and possibly a role for labour-supply variables.

One of the things that has changed most dramatically over the last 15 years in many countries is the participation rate of women in the paid labour market. It seems likely that such a change has had important implications for saving behaviour. This is apparent if one thinks that home production is not usually measured in available data and that a large part of it might get substituted by market transactions when the woman works, therefore increasing the marginal propensity to consume. In other words, the propensity to consume out of home production income is one. If home production is reduced because of labour income, it is likely that part of this income is absorbed by market goods that substitute for home production. Moreover, increased participation is also likely to induce more complex consumption and saving effects if one considers the possibility that consumption and leisure are not separable in the utility function. Much work still needs to be done to study these effects.

While the empirical success mentioned above is important and suggests the possibility of a very useful tool for policy analysis, much work remains to be done to explain the behaviour of individuals at the beginning and at the end of their life cycle. Moreover, much work is needed to learn how to use the results one gets for policy analysis: the construction of simulation models that incorporate modern life-cycle models is still at an early stage.

As far as the first problem is concerned, the issues are different for young and old consumers. Young consumers are likely to be affected by liquidity constraints and, additionally, are going through the process of household and family formation. Older consumers will be facing retirement, changes in family composition (as children leave the family), as well as possibly dramatic changes in health status and mortality probabilities. The evidence for both the UK and the USA indicates a relatively large drop in consumption at retirement. Banks et al.

---

6 In other words, to the Lagrange multiplier associated with the life-time resource constraint in the inter-temporal optimization problem.
7 See Attanasio (1999) for a recent survey.
(1998) suggest that a sophisticated version of the life-cycle model can only account for two-thirds of the observed drop in consumption growth around this time. Although one possible explanation of the residual is the revelation of bad information around retirement (such as lower than expected pension payments), causing downwards revisions of consumption plans, it seems clear that, more generally, much research is needed to investigate further the phenomenon of consumption smoothing across the work–retirement boundary and to construct models, either standard or non-standard, that are able to explain consumption changes around this time.

The behaviour of the elderly has been the focus of a large empirical literature that has studied the pattern of wealth accumulation. While the textbook version of the life-cycle model has straightforward implications for the dynamics of asset accumulation, in practice things are a bit more complicated, especially once one introduces bequests, public pensions, uncertain mortality, and so on, as made clear in the seminal paper by Hurd (1989). None the less, many studies have looked at the pattern of wealth accumulation and decumulation over the life cycle and interpreted the results as evidence relevant for the life-cycle model.

While the evidence based on the estimation of the Euler equation is very structured and formalized, the analysis of wealth accumulation is much more descriptive and the results are suggestive, rather than being definitive. This is partly due to the difficulty in obtaining closed-form solutions for the pattern of wealth accumulation. In addition to the difficulty in getting closed-form solutions and exact expressions for the pattern of wealth accumulation, the process of validating saving-behaviour models is made difficult by the paucity of data, as we discuss briefly below. Data sets containing information on consumption and saving are few and far between. The same applies to data sets containing detailed information on wealth and its components. Moreover, rarely are the two pieces of information found in the same data set. And the quality of these data is often questionable because of the intrinsic difficulty of getting precise information on complex (and sensitive) subjects such as consumption and wealth.

Most of the tests that have looked at the pattern of wealth accumulation in the context of the life-cycle model (such as Shorrocks, 1975; King and Dicks-Mireaux, 1982; Hurd, 1989) have considered the implication that wealth is decumulated in the last part of the life cycle. However, as stressed by Hurd, if there is an operative bequest motive, the optimal pattern of wealth does not necessarily decrease in the last part of the life cycle. Moreover, additional factors, such as changes in the probability of survival, changes in health status, and the presence of a large component of wealth that is annuitized (social security), complicate matters considerably.

**Further issues**

Once one sets the saving problem within an inter-temporal optimization problem, it is natural to think within the same framework about portfolio choices. Unfortunately, the things that relate to the pattern of wealth accumulation apply here, too: the theoretical predictions and the data available are few. And the small amount of data that is available presents some interesting puzzles. It seems, for instance, that very few households hold well-diversified portfolios. Many households do not participate in important markets, such as the equity market. Recent research has focused on the possibility of transaction costs, among other things, to justify these phenomena.

While liquidity constraints have received a substantial amount of attention in the literature that has tested various versions of the life-cycle model, much work needs to be done to incorporate them in a consistent fashion. In developed countries the problem is likely to be especially relevant for younger consumers, as mentioned above. In developing countries, on the other hand, the lack of smoothing mechanisms and insurance markets can be pervasive, as discussed in the paper by Mark Rosenzweig in this issue. In such economies, in which the large fluctuations in income make the existence of smoothing mechanisms particularly important, the access to and the existence of formal credit markets is very limited. As a consequence, other sources of consumption smoothing are used, ranging from productive assets (see the discussion of bullocks in Rosenzweig’s paper) to informal insurance mechanisms. These markets are often found to deliver far from first-best allocations of resources. An important research agenda is one that attempts to model explicitly the imperfections in these markets, such as information or enforceability problems.
The simplest versions of the life-cycle model assume, mainly for analytical convenience and empirical tractability, that the utility function is intertemporally separable. This implies the exclusion of durables from the analysis and precludes models with habits. The evidence of the importance of the former is obvious. Even if one limits the analysis to non-durable consumption, it is unlikely that the utility function is additively separable between durables and non-durables. Moreover, in analysing behaviour, durable expenditure should be playing an important role, as at least part of it constitutes saving. Once more, data problems make the empirical analysis of durables models very difficult. Very few data sets contain adequate information on the stock of durables households hold, but this is an important topic for future research. The latter problem, the possibility of habit formation, is analytically hard, but might be of great relevance in some situations. Deaton and Paxson (1994) and Paxson (1994), for instance, have proposed models of habit formations to explain the puzzling increases in saving rates observed in Taiwan in the 1980s and 1990s. Very few studies have looked at models of habits with micro data. One paper that does so is by Meghir and Weber (1996), who use US Consumer Expenditure Survey data and do not find much evidence of habit formation, once one controls for the possibility of non-separable preferences between durables and non-durables. A set of more recent papers in the American Economic Review have addressed a number of issues surrounding habit-formation models (see Dynan, 2000; Carroll et al., 2000; Fuhrer, 2000). Dynan’s results, in particular, reinforce the conclusions of Meghir and Weber (1996).

(ii) Alternative Theories

While the life-cycle model has played an important role in the analysis of saving behaviour, it is not the only game in town. One often mis-cited case in this context is the ‘Buffer Stock’ model (see Deaton, 1991; Carroll, 1994). In this model, consumers hold a stock of assets with which to buffer potential income changes, but are not generally adding to, or running down this ‘buffer stock’, sometimes expressed as a target wealth-to-income ratio. Such a model yields a convenient and simple ‘rule of thumb’ which generates the optimal path, and accords with intuition about the way in which high-frequency resource fluctuations may be dealt with on a practical level. However, despite being an important insight, far from being a separate model, buffer-stock behaviour is generated within the standard life-cycle model with only minor modifications, given certain crucial values for preference parameters and the economic environment (more particularly, when income uncertainty and trend income growth are high, as is impatience, and individuals are either liquidity constrained or have a particularly high precautionary motive (see Carroll, 1994, for example)—as such it provides a good description of the behaviour of younger consumers, as shown in the simulations of Attanasio et al. (1999)). Nevertheless, this illustrates that, under certain circumstances, even the conventional life-cycle model can yield behavioural processes that appear, on the surface, to differ from full inter-temporal optimization.

In contrast to this, several models have relaxed various more fundamental aspects of the basic model. We mention briefly three strands of the literature: models that relax the assumption of expected utility; models that relax exponential discounting; and models that relax the assumption that the household is a single decision unit. Further detailed discussion of the first two issues are in the paper by Rob Alessie and Arie Kapteyn in this issue.

The hypothesis of expected utility maximization that underpins the treatment of uncertainty in most conventional formulations of the life-cycle model is made mainly for analytical convenience, despite the abundance of experimental evidence that rejects it. Alternatives that have been proposed include the axiomatization proposed by Kreps and Porteus (1978), which relaxes the separability across states of the world and was usefully parametrized by Epstein and Zin (1989, 1991) and other theories that weight probabilities of various states of the world differently. The Kreps and Porteus axiomatization can be given an interpretation in terms of preference about the timing of the resolution of uncertainty. More recently, Anderson et al. (2000) have proposed an interpretation in terms of robustness by showing the equivalence of Epstein and Zin (1989) preferences with ‘robust’ behaviour.

In an alternative approach, Kahneman and Tversky (1979, 1986) argue that, in contrast to expected utility theory, people treat expected gains and losses differently, in particular overweighting prospective
losses and underweighting equivalent gains. Moreover, individuals appear to respond differently to the same situation, depending on whether it is presented in terms of losses or gains. Finally, when faced with gains, investors appear to be risk averse; however, when facing losses, investors become risk seeking. Further discussion of these issues, as well as other ‘anomalies’ in households’ inter-temporal choices and savings behaviour are discussed in the many papers of Thaler (see Thaler, 1990, for example).

The predictive power of such models in explaining savings ‘puzzles’ is now a significant area for empirical investigation, particularly with the advances in collection of ‘new’ types of data on saving discussed by Alessie and Kapteyn in this issue. As Browning and Lusardi (1996) correctly predicted, it seems that empirical evidence on portfolio allocations and choices may hold more insights for distinguishing between such theories than simply looking at data on households’ aggregate saving or consumption choices. As more detailed information on household portfolios becomes available, and as the modelling of portfolio choices becomes more sophisticated, it is likely that more will be learnt about the processes by which households make inter-temporal choices in the presence of uncertainty.

A further tenet of conventional life-cycle models is that of exponential discounting. This in turn has been relaxed recently by Laibson (Laibson et al., 1998, Laibson and Harris, 2000, for example), developing earlier work by Strotz (1956), and Phelps and Pollak (1968). The underlying idea, stemming from work by psychologists, is that consumers could be time inconsistent in their inter-temporal choices. This might manifest itself through a lack of self control or the indefinite postponement of unpleasant activities (such as dieting, saving for retirement, exercising). A nice and relatively simple formalization of these phenomena is that of hyperbolic discounting: individuals discount adjacent periods in the distant future more than those in the near one, so that the choices between time $t$ and $t + 1$ are evaluated differently when viewed from time $t$ and at time $t - 1$. This strand of the literature is particularly important for saving behaviour, and therefore for the related policy issues, in the sense that it relates directly to the manner in which inter-temporal choices are made. Analytically, the key insights of the theory stem from interpreting inter-temporal decisions as the outcomes of games between current and future ‘selves’. Loosely speaking, it is in the (long-run) interests of the current self to engage in commitment mechanisms that will constrain the behaviour of future selves. Hence, if self control, time-inconsistent preferences, and the like are important problems, this could help to explain the popularity of forms of savings that tie resources until retirement, such as 401(k) accounts in the USA, or even shorter-term commitment mechanisms, such as savings clubs or save-as-you-earn schemes. Of course, there are other characteristics of such assets that may also explain their popularity (not least tax exemptions in some cases, or maybe some differences in accessibility) and a fuller understanding of these types of savings decisions with hyperbolic agents is now an important topic for future research. In this issue, Alessie and Kapteyn consider the importance of survey evidence in this area.

Relaxing the assumption that the household is a single decision unit is, at the same time, important and difficult. Important, because it is likely that in many interesting situations the individuals that make up the households might have different incentives and objectives. In general, there is no way to guarantee that they behave as if a single entity was maximizing a well-defined utility function. The two main alternative models that have been considered in the literature are the so-called ‘collective’ model, in which, even though individuals might have different objectives, the inter-temporal allocation of resources is done efficiently; that is, potential conflicts do not cause waste of resources. This is not excluded by the alternative class of models, where strategic considerations and non-cooperative behaviour can lead to important inefficiencies.

These models are important from a policy point of view for several reasons. When discussing pension reforms and saving incentives, for instance, it might be important to recognize that within a household different individuals might have very different incentives, maybe owing to differences in life expectancy. It has been argued that in developing countries mothers and fathers have very different incentives for the accumulation of human capital, and might have different preferences over children, depending on their gender. In such a situation, changes in the
control of resources among individuals in the household can have important consequences for the inter-temporal allocation of resources.

Most of our discussion so far has been of a partial equilibrium nature. We have discussed the optimization problem solved by a generic consumer, given the institutions and the economic environment she faces, and the implications for observed data. It is important, however, to recognize that smoothing mechanisms, markets, and so on are not exogenously given, but determined by economic forces. In some cases, the importance of general equilibrium considerations is particularly evident. We have already mentioned in passing the recent literature that tries to model explicitly the lack of some markets due to particular problems, such as information and enforceability. These models do not take the presence of liquidity constraints as given, but relate it to specific factors. Another good example of the importance of the general equilibrium consideration is the recent debate on the effects of demographic trends on the working of different pension systems. Within such a context, it is important to recognize that rates of return (and wages) are not independent of the evolution of demographic trends. Indeed, the ageing of the baby boomers is likely to have important consequences for equilibrium interest rates. This is clear from the simulations that form the core of the paper by Mariacristina De Nardi, Selahattin İmrohoroğlu, and Thomas Sargent in this issue.

(iii) The Assessment: Microeconomic Theories of Saving

At some level the life-cycle theory of consumption and saving is almost a tautology, if one believes the law of demand: in essence, it simply says that, other things being equal, if there is a fall in the perceived cost of forgoing consumption today in order to finance consumption tomorrow, then individuals will do more of it. The real issue is whether the costs and benefits of consumption in various periods can be parsimoniously specified in order to operationalize the theory empirically and hence test it or use it in practice. As pointed out above, the costs of forgoing consumption will depend on the current period’s co-determinants of marginal utility, whereas the benefits of future consumption will depend on expectations of future co-determinants (expected family size, for example) relative to future resources, the uncertainty over both these objects, and then the subjective rate of time preference and the individuals’ preferences over risk.

Browning and Crossley (2000) point out that the performance of the theory depends heavily on the frequency of analysis required—over short periods there is evidence of consumption smoothing as predicted by the model, but as the periods lengthen (over a working life, for example) what evidence there is becomes much less convincing. This suggests that fully specifying the model, including the way in which expectations are formed and the information available to individuals, as the period of analysis lengthens is problematic. And even were it to perform well when tested, at lower frequencies plausible specifications of the theory do not deliver many useful predictions on which to base policy. In addition, the role of particular preference parameters, such as the subjective rate of time preference and the coefficient of risk aversion, is crucial. Such parameters are hard to identify, and this further limits the degree to which predictions can be generated.

As a result of the above issues, a growing literature is beginning to look at measuring particular parameters of the model, or even evaluating the plausibility of various models, using direct measurements or experiments. The Alessie and Kapteyn paper discusses the progress of such methods, focusing on what can be learnt by preference elicitation questions in household or individual surveys. Given the difficulty in evaluation of model predictions by other methods, this is clearly an important although ongoing research agenda, and their conclusions are more optimistic in some areas than others.

Despite the above limitations, when considering the importance of theory in informing savings policy choices it is important not to throw the baby out with the bath water. First, even though it may not currently deliver positive predictions, what the theory does provide is a clear structure for policy analysis, highlighting the way in which savings choices will depend on certain current and future variables. Second, modern developments are particularly rigorous in their treatment of uncertainty and in understanding the way in which various types of uncertainty (whether over needs or over resources) can influence households’ inter-temporal decisions. This
in turn has led to an increased reliance on simulations of the model under stochastic conditions which are able to provide predictions about how individuals will react as circumstances change. Although such simulations are, indeed, dependent on key model parameters, the use of calibration-type modelling is beginning to be useful, predominantly in understanding how the predictions of the model are sensitive to variations in preference parameters over various ranges. Finally, the incorporation of more sophisticated modelling of uncertainty has also focused on the processes by which individuals or households form their expectations about the future. This last set of issues will be particularly important to understand when financial or demographic conditions are changing. Currently, for example, there are a number of ‘transition’ generations for whom it is realistic to expect their future circumstances to be unlike those of previous generations (and which we discuss more below). The degree to, and speed with which these generations’ expectations adapt will be an important question, and one that can only be usefully framed within the context of a formal forward-looking model, such as those outlined above.

III. POLICY ISSUES

There is currently a real need to understand household saving choices and the mechanisms by which consumption is smoothed across the life cycle in various circumstances. In developed countries, this is because a set of policy issues is becoming more and more important as the populations of these countries continue to age, and tax and welfare systems evolve. In developing countries, the lack of smoothing mechanisms and well-developed financial markets because of various market failures makes the role of public policy even more important. Moreover, as we discuss below, the development of well-functioning financial markets in developing countries can be relevant in alleviating the general equilibrium effects that the predicted demographic trends are likely to create for the generations that will be retiring in 20 years in the north of the planet.

From a public policy point of view, probably the most important policy questions that developed countries will be facing are those related to the projected demographic trends. These questions are directly related to saving behaviour. Increasing life-expectancies lead to a number of economic-policy issues which we discuss in turn, and many of which are addressed in the papers that follow in this issue. First, there is a need to understand how the allocation of resources over individuals’ life cycles will adjust, and how this will feed into the economic welfare of the elderly, who will be becoming an increasingly large proportion of the population. This latter factor may also have implications for the way in which governments structure the financing of some of their traditional financial transfers (such as pensions or disability benefits). And if these changes result in a move to a private funded system (as we discuss below) then issues such as wealth inequality or financial literacy will all become important, as well as the issue of how, practically, to manage such a transition. Finally, it is also important to understand the general equilibrium effects of large changes in the flows and stock of savings induced by the projected demographic trends and by the proposed policy reforms on asset prices and returns. In what follows we discuss these issues.

As is well known, the fact that birth rates have declined and life expectancies have risen means that the populations of developed countries are predicted to have much higher dependency ratios (the ratio of elderly (retired) individuals or households to younger (working) ones) in the future. Figure 1 illustrates the magnitude of this increase for Great Britain over the next 60 years. The dependency ratio, even in the year 2000, is already substantially higher than that for the British population 30 or 40 years ago, and the rise over the period 2020–40 (when the so-called baby-boomer generation reaches retirement age) is marked. But the trends facing Great Britain are still less severe than in most other countries, with France and the USA, for example, lying towards the middle, and Germany, Italy, and Japan at the top of the distribution (see OECD, 1996, or World Bank, 1994, for example).

The most fundamental question facing policy-makers today is how the increased (average) longevity of future generations (and hence also the increasing representation of the elderly in the population) will affect the welfare of individuals within those generations. Of course there is more to welfare, or quality of life, than economic resources alone, but economic resources, whether provided by individuals from past savings, or from government transfers,
will surely be an important determinant of the quality of life in individuals’ later years. What is immediately clear in this respect is that, if things remain unchanged, the relative living standards of elderly members of the population will decline. But circumstances will not, of course, remain unchanged—both individual behaviour and government policy can reasonably be expected to adjust as the population ages. The precise adjustments expected, or required, however, will depend on a number of unknowns, with one of the major ones, for example, being the degree to which the extension in life expectancy in the population, or in groups of the population, will be correlated with a lengthening of healthy, or productive, lifetimes.

Broadly speaking, there are two directions of policy-motivated research on household saving that are aimed at addressing these issues. The first addresses how an economy can continue to deliver financial support (particularly to the elderly) as the composition of the population ages. The most important case here is social security—the government provision of retirement income. For pension systems that are currently operated on a PAYG basis, where current generations of workers pay taxes that finance current generations of retired individuals, the increases in payroll taxes required to fund such a system at the same level of generosity would be huge. Hence, reform is high on the agenda, with one option being a move to a funded system, whereby each generation (or individual within each generation) pays contributions into a fund while working, which in turn provides a stream of resources while retired. Of course, to the extent that the ageing processes may be correlated across countries (or, equally, if an economy is more or less closed when it comes to capital markets) the movement to a funded system may not be as effective in alleviating this problem as initially hoped—if all countries moved to a funded system presumably asset returns would adjust, particularly at the point where the large generations retire and attempt to cash in their assets to finance their retirements.

Approaches to the problem of social-security reform have differed across countries, as is clearly indicated in the regional papers in this issue. In the USA, there has been a large amount of policy analysis accompanied by, as yet, no reform. In contrast, the UK has seen a succession of reforms to public pensions that have moved to a predominantly privately funded system, although there was remarkably little empirical policy debate prior to these choices being made (what Disney and Johnson, 1998, refer to as a ‘back-door’ privatization). The situation in continental Europe is different still, with very little detailed debate of reform options at the European level, but also very little reform. Incidentally, a further interesting difference is in the nature of the debates across countries, with the US social-security debate being predominantly about macro-
economic, or efficiency, issues, as opposed to what European debate there is being equally, if not more, concerned with distributional issues.

Detailed discussions of specific policy issues in the funding of public pensions are provided in two of the papers in this issue. De Nardi, İmrohoroğlu, and Sargent discuss the general equilibrium implications of various social security options for the USA, using a general equilibrium framework based on the life-cycle model. This shows clearly how asset prices would adjust under different scenarios for reform, and how the resulting welfare of future generations would be affected, both in transition and in the long run. The analysis shows that the welfare effects of different reform designs could vary by as much of a factor of 2 in the long run, but also that the welfare effects in transition vary markedly, according to the design of the reform. The focus of this paper contrasts with the remarkably little attention paid in the policy debate to the general equilibrium effects of pension reforms and demographic trends in Europe. In this issue, Axel Börsch-Supan and Agar Brugiavini highlight how little is known about social security, and savings behaviour more generally, at the European level, and concentrate on providing new empirical evidence about various aspects of European public pension schemes and pointing out how the options for reform are affected by considering EU countries together. They show that patterns of social security and asset accumulation, as well as financial institutions, are extremely diverse across European countries, and yet that overall replacement rates of retirement income are surprisingly comparable.

The regional papers that focus on the USA and the UK look at a slightly different set of issues, surrounding the distribution of saving and wealth in the population, the relationship between different types of savings vehicles, and the adequacy of households’ financial provisions for their retirement. These in turn relate to the second strand of research that is crucial in informing household savings policy choices: investigating how individuals’ choices about consumption smoothing are likely to adjust to the changing financial conditions they face. Of course, once there has been a movement to a privately funded pension system, as there has been in the UK, these issues become particularly pertinent, since individuals without adequate savings are likely to need to be supported by other government welfare payments, or else left as an impoverished group of the population. Partly as a consequence of these changes, but also as a result of more general distributional concerns, the inequality in the distribution of wealth and financial assets has become an object of some policy interest.

Since wealth is the outcome of past savings decisions, one would expect a certain amount of inequality, simply related to age or income. Yet the degree of inequality in savings and wealth holdings is marked, as indicated in Table 1, which shows mean wealth and then the 50th and 90th percentiles of the wealth distribution in the USA and the UK, by age group.

### Table 1

<table>
<thead>
<tr>
<th>Age band of head</th>
<th>Mean</th>
<th>Median</th>
<th>90th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UK\textsubscript{L}</td>
<td>UK\textsubscript{U}</td>
<td>USA</td>
</tr>
<tr>
<td>&lt;40</td>
<td>5.0</td>
<td>9.9</td>
<td>20.2</td>
</tr>
<tr>
<td>40–59</td>
<td>23.5</td>
<td>33.7</td>
<td>60.0</td>
</tr>
<tr>
<td>60+</td>
<td>33.2</td>
<td>42.0</td>
<td>99.2</td>
</tr>
<tr>
<td>All</td>
<td>19.4</td>
<td>26.7</td>
<td>51.7</td>
</tr>
</tbody>
</table>

**Note:** UK\textsubscript{L} and UK\textsubscript{U} refer to lower and upper bounds for estimated wealth respectively.

**Sources:** Banks et al. (2000), calculations from Panel Study of Income Dynamics (PSID) and British Household Panel Study data.
Across all households the ratio of mean to median wealth is around 12 in both countries. Within age groups in both countries the difference between median and mean is less (a ratio of around 6 for those over 60, for example) but is still substantial. The table also shows, however, that median holdings of financial wealth (i.e. not including pensions) are low throughout the age distribution—the median UK household holds between $1,500 and $2,300, i.e. between £1,000 and £1,500. This suggests a different side to the issue about the adequacy of household savings—when one looks at statistics other than the mean, it transpires that many households have very few savings at all. This has led, at least in the UK, to a number of policy reforms targeted at so-called financial exclusion and designed to get low-saving households to save more. Given that such a system requires individuals to choose to save in order to provide for future period of low incomes, the issue of financial literacy, and the provision of adequate information about savings options and their relationship to inequality in the distribution of saving and wealth, also becomes an important one.

There are a number of margins on which, if one believes the life-cycle model, individual behaviour may adjust to longer life-expectancies and the changes in state financial support that such changes can be reasonably expected to bring. The most direct adjustment, as discussed above, is simply for households to save more in working life to finance a longer period of retirement. This is the most common margin that is discussed when looking at the ‘adequacy’ of provisions for retirement. Typically, studies find that most individuals need to save more, or be encouraged to save more, to provide ‘adequately’ for their retirement. But, as pointed out earlier, savings choices are a by-product of consumption-smoothing choices and, if individuals are unwilling to sacrifice consumption today to finance consumption tomorrow, there are other options available. Most importantly, household labour supply may adjust, either within the time-span of conventional working lives (by individuals working more hours, or more household members choosing to work in paid labour markets) or beyond (by households lengthening their working lives past the age at which they would have previously have expected to retire). Clearly, then, the issue of the nature and timing of expected retirement, as well as changes in the labour supply of working-age households, are both objects of interest when assessing future savings behaviour.

Table 2

Labour Market Status at Older Working Ages in the UK

<table>
<thead>
<tr>
<th></th>
<th>Proportion employed (full time or part time)</th>
<th>Proportion full-time employed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>or self-employed</td>
<td>50–4</td>
</tr>
<tr>
<td>Men</td>
<td></td>
<td>50–4</td>
</tr>
<tr>
<td>1969</td>
<td>0.979</td>
<td>0.930</td>
</tr>
<tr>
<td>1979</td>
<td>0.937</td>
<td>0.893</td>
</tr>
<tr>
<td>1989</td>
<td>0.875</td>
<td>0.800</td>
</tr>
<tr>
<td>1999</td>
<td>0.840</td>
<td>0.710</td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td>50–4</td>
</tr>
<tr>
<td>1969</td>
<td>0.575</td>
<td>0.533</td>
</tr>
<tr>
<td>1979</td>
<td>0.682</td>
<td>0.577</td>
</tr>
<tr>
<td>1989</td>
<td>0.712</td>
<td>0.516</td>
</tr>
<tr>
<td>1999</td>
<td>0.713</td>
<td>0.522</td>
</tr>
</tbody>
</table>

Source: Family Expenditure Survey.
working after age 55 than in the past—falling from 93 per cent to 71 per cent among 55–9-year-olds, and from 83 to 46 per cent among 60–4-year-olds. Strikingly, the differences in full-time employment rates are larger: only 30 per cent of men and 36 per cent of women are now working full time in the 5 years preceding the state ‘retirement’ age. This suggests at least two important issues. First, that the interactions between retirement choices (and the financial options associated with retirements at different ages, including sickness or disability benefits) and resources available for retirement need to be acknowledged when designing policy reforms addressing saving and resources for retirement. In addition, the growing disparity between economic activity rates and full-time employment rates suggests that retirement itself is now a very heterogeneous state which needs to be accounted for in policy analysis. Second, since so few individuals are working until the official retirement age, it is not clear how varying this age would actually affect behaviour in systems where this is being considered as an option for reform in order to close implied inter-temporal deficits.

There is one dimension of all this which is particularly important to evaluate, yet also particularly difficult, given our discussion of the relatively weak power of current empirical models at explaining variations in consumption smoothing at particularly low frequencies. This is the degree to which, in the absence of government intervention, individual behaviour would adjust to the prevailing changes in the economic environment, and hence the need for such intervention in the first place. Such ‘encouragement’ to saving could come in the form of information, financial education, or the regulation of financial products. Alternatively, and popular in the USA and UK, tax advantages could be given to certain types of assets in order to encourage saving in these forms. In this case, the issue of how much genuinely ‘new’ saving is generated, as opposed to simple reshuffling of household portfolios to take advantage of tax breaks using existing stocks of saving, is important.

This debate has been well rehearsed in the United States for the introduction of Individual Retirement Accounts and 401(k) private pension plans (for all sides of the debate see Engen et al., 1996; Hubbard and Skinner, 1996; Poterba et al., 1996), but the evidence is mixed. Evidence for other countries is not substantial enough to help resolve the issue. In this issue, Richard Disney, Carl Emmerson, and Matthew Wakefield provide some discussion of the issues surrounding the introduction of private personal pensions in the UK. This latter case was an example of a ‘carrot and stick’ approach to encouragement: a generous tax treatment was given to the private pension alternative, and, simultaneously, the generosity of the state alternative (in this case the State Earnings-related Pension Scheme) was reduced.

An interesting feature of most of the US debate on tax incentives to saving is that it has not used the theoretical framework we discussed in section II. With very few exceptions, most of the studies in this literature have tried to developed theory-independent statistical tests. As a consequence, these tests are based on more or less arbitrary identification assumptions, and the resulting lack of consensus on the issues may, therefore, not be too surprising. The standard life-cycle model predicts that changes in the rate of interest on saving are ambiguous because of the counteracting income and substitution effects. Moreover, often contributions to tax-favoured accounts have limits that are, for many households, binding. For these households, therefore, the relevant marginal rate of return is the one on the last dollar saved and, therefore, not the one on the tax-favoured account. These considerations would indicate pretty small effects of tax incentives. These models, however, ignore other possible effects, such as those due to education or information, that have been recently stressed in the literature.

Some argue that the government should go even further and introduce some degree of compulsion into household saving decisions. In the absence of conventional market failures, such a view could be justified if one takes seriously the economic models in which the lack of self control leads individuals to the incapacity of accumulating the appropriate level of savings (although it has to be said that markets for these types of savings products could develop in the absence of government intervention, so that it is not clear what market failure the government would be addressing by intervening). However, even if one accepts such a paternalistic view, the difficulty in assessing the ‘adequacy’ of household saving for retirement leads to a corresponding difficulty in
implementing compulsion in savings or pensions choices. Even were there to be a simple rule of thumb that could approximate an optimal savings plan, it is unlikely that this rule would be common across large groups of the population, and hence many individuals would potentially be compelled into inappropriate savings behaviour.

Whatever the government’s approach to encouraging saving, however, considering household savings choices as the outcome of inter-temporal consumption-planning decisions makes one thing clear. At the very least, individuals or households benefit from a stable inter-temporal environment in which to plan, and as complete an information set as possible. The UK experience with pensions—a long series of major reforms to the system over the last 20 years—does not stack up well against this benchmark.

While the De Nardi et al. paper focuses on simulations that are calibrated to the US economy, some of the points made in that paper are relevant for most developed countries. Probably the most important is that if one wants to evaluate the welfare effects of the projected demographic trends and/or of specific reform proposals, one needs a general equilibrium analysis. Given the size of the projected trends and changes in population structures in the next 20 years, it is extremely likely that there will be substantial changes in factor-of-production returns and prices. This has profound implications for the return on the savings of the baby boomers. In other words, the same trends that make many current PAYG systems unsustainable, also harm the baby boomers’ welfare in a fully funded system, as the limited number of young workers in 20 or 30 years will cause the return to capital to be low.

Of course, demographic trends are not completely synchronized in the world. Indeed, in many parts of the globe, dependency ratios will be much lower in 20 years than in the north of the planet. This gives the opportunity for large movements of factors of production. If immigration is politically difficult, movements of capital could become a more feasible and politically palatable option. However, these flows require the development of well-functioning financial markets in the south of the planet. It is in this sense that the development of formal markets, which, as discussed in Rosenzweig’s paper in this issue, is particularly needed in developing countries where income is volatile and consumption smoothing mechanisms very limited, might be linked to the policy problems faced by developed countries.

While we believe that the link just mentioned is important, the details of the policy debate relating to saving and its interaction with the functioning of financial markets in developing countries is shown in Rosenzweig’s paper to be quite different. In many situations the development of instruments that allow the absorption of temporary shocks seems to be extremely important. This is particularly relevant for economies where, perhaps because of a process of opening and reform, the variance of income has increased for many low-income households. Moreover, it seems important that the necessity to smooth income shocks does not jeopardize the adoption of productive technologies.

While the necessity for better smoothing instruments and institutions seems to be self-evident, it is hard to determine what types of government intervention are desirable and/or effective. In thinking of government intervention it is necessary to take into account its interaction with the functioning of existing private markets. Extended families, insurance and borrowing networks, saving associations and rotating savings and credit associations (ROSCAs), informal credit markets—they all play a very important role in smoothing income shocks. At the same time, the nature of these institutions is likely to interact with investment choices and, therefore, with growth. It is more and more clear that the government could play a role in the development of the ‘right’ institutions that would overcome some of the most important market failures, such as those originated by information and enforceability problems. But, as is clearly evident from the Rosenzweig paper, a complete understanding of the relevant incentives and economic mechanisms is of fundamental importance for the conduct of public policy.

(i) The Need for Expanding the Evidence Base

It is clear from the arguments above that there are a number of areas where a more detailed empirical understanding of households’ wealth accumulation behaviour would significantly enhance applied policy analysis, in addition to providing the tools to further our understanding of general patterns of economic behaviour. It is also clear that this requires micro
data, given aggregation problems and the difficulties in decomposing age, cohort, and time effects. The applied policy papers in this issue contribute to this ongoing process, adding empirical evidence in a number of policy areas.

Yet one particular feature of the debate about savings policy, as is evident from considering the UK and European papers in particular, is that the potential for empirical analysis is often limited by the data available to researchers. Indeed, the lack of data on savings, assets, and wealth is one of the major factors limiting the expansion of the evidence base in this area, both in the UK and in other countries. With relation to this, Annamaria Lusardi, Jonathan Skinner, and Steven Venti show that the issue of the measurement of household saving—either through changes in stocks of wealth or through measurements of flows directly—is important enough to warrant increased data collection (but also complicated enough to make collecting such data very time consuming). Hence one of the major outstanding policy issues in the field seems to us to be addressing the need for more data in a number of areas relating to savings and wealth accumulation, particularly outside the USA. In particular, there is a need for surveys that directly facilitate research questions relating to ageing populations and the particular policy questions associated with such demographic changes.

Consider the use of descriptive or quasi-structural analysis in informing, ex ante, policy choices and in understanding, ex post, the effects of policy reform. In the UK, and in much of Europe, existing data are inadequate to facilitate such policy analysis. To take one example, during the design process for the Individual Savings Account, introduced in the UK in April 1999, there did not exist any data with which either the government or policy analysts could reliably evaluate the number of individuals potentially affected or the potential exchequer cost of the reform, let alone the magnitude of any potential effects on savings behaviour of households of various types. Similar arguments hold true for the introduction of personal pensions, TESSAs, PEPs, and stakeholder pensions, to name but a few. In comparison with other areas of microeconomic policy (including, for example, welfare and benefit reform, direct or indirect tax reform, or measurements of various dimensions of the income distribution), in the area of savings and wealth the evidence base is singularly lacking.

Looking at the US experience, one might argue that, despite fairly good data, convincing evidence with regard to the relevance of various theoretical models of saving is still fairly weak. Certainly, it is fair to say that empirical evidence in favour of the canonical (life-cycle) model has yet to be strong enough to preclude the investigation of other plausible alternatives, although, as we discuss earlier, there is an issue about distinguishing tests of the model from tests of particular model specifications. However, we would argue that the lack of powerful empirical tests should not distort the need for the collection of survey evidence. In particular, increasing use is being made of international comparative research in policy analysis, and it is essential that such analysis is carried out on comparable micro data. Two good recent examples of this approach are Gruber and Wise (1999), who exploit detailed international microeconomic evidence to generate variation that is used to evaluate the incentive effects of public pensions on retirement choices, and Guiso et al. (2001), who look at evidence on household portfolios.

Finally, one area where potentially valuable new data are coming on stream relates to the wealth, economic status, and health of the elderly. Such data allow researchers to look directly at the outcomes of life-cycle process in terms of the economic and non-economic dimensions of quality of life that individuals experience in their retirement. New panel data are now being collected in the USA (the Health and Retirement Survey) and being designed in the UK (the English Longitudinal Study of Aging) to address precisely these issues. The relatively new aspect of these datasets is the ability to link respondents to their social-security records, and thus provide a more complete picture of earnings histories and social-security contributions or receipts. Our anticipation is that, as comparable studies begin to be collected in other countries, such datasets will become an important resource for applied policy analysis relating to savings over the life cycle and resources in retirement.
IV. CONCLUSIONS

There is much current policy interest relating to household saving. In developed countries, as is evident from the papers in this issue, much of the current debate has focused on the issue of whether households’ private savings are ‘adequate’ to provide resources for financing retirement, when assessed in conjunction with what they might expect from public transfers, most importantly through public pensions. Such a debate has been mainly stimulated by dramatic ongoing changes in the demographic composition of the population. Supplementary issues relate to how best to deliver public pensions (as well as other transfers) in the context of the rapidly ageing populations across the world, what impact, in turn, these changes will have on future cohorts’ welfare in comparison to that of their predecessors, the degree to which the behaviour of these cohorts is automatically adjusting to the changing circumstances and the degree to which policies should be used to generate behavioural change, and, finally, the important issue of differences between or within various groups of households in their provisions for expected future needs.

In developing countries, instead, the focus of the debate has been on the ability of households living in a very risky environment to smooth out income shocks. Saving is one of many possible mechanisms for risk sharing and inter-temporal smoothing. The most important issues in this area range from establishing the extent to which households can smooth shocks and through which mechanisms, to the interaction between the necessity to smooth out shocks and the ability to finance productive investment projects, to the market failures that prevent the developing of well-functioning financial markets. While many of these problems are specific to developing countries, we have argued that there are important connections between the development of well-functioning financial markets in developing countries and the general equilibrium effects implied by the demographic trends in developed countries.

These are difficult questions, and it is clear from this paper, and the other papers in this issue, that economics is currently far from providing answers. What economics has succeeded in providing, however, is a framework within which to analyse these issues. Within this framework it is clear that issues surrounding the level of, and uncertainty about future needs and resources, in comparison to current needs and resources, are crucial in understanding wealth-accumulation profiles, and hence the resources that cohorts will have to finance consumption in the future. It is certainly true that some policy interventions can be targeted at these issues directly. Government policy on future pensions needs to be stable and clearly stated in order for individuals to plan to provide further resources for themselves. Financial services need to be encouraged to provide accurate and relevant information to enable individuals to make informed choices. And there are clear gains to having a population with a level of financial education or knowledge that facilitates efficient choices relating to inter-temporal trade-offs.

Even in these dimensions, however, the papers in this issue demonstrate all too clearly that there is still diversity in the approaches of different countries to policies relating to household and individual saving. At a European level, for example, there is considerable uncertainty about the future of public pensions that, it is fair to say, is probably not conducive to individuals’ long-term planning decisions. This is an issue that is looming large on the horizon and is one that is only now beginning to be addressed. The level of debate has not, for example, reached that of the USA, where, although there remains considerable uncertainty about the future of social security, the options for reform, and their implications for the aggregate economy as well as particular groups, are well discussed. At a national level, the European countries are very diverse, as indicated by Börsch-Supan and Brugiavini in this issue, both in the liabilities they face, the way individuals use private saving over their life-cycles, and in the degree to which governments are addressing resulting problems. Within the UK the situation is particularly idiosyncratic. A series of major pension reforms has had two broad repercussions. First, in terms of pension provision, the UK population is now extremely heterogeneous, so future reform will potentially affect different groups in very different ways, and understanding the resources available to future cohorts for their retirement is a particularly complex problem for policy analysts, let alone for the population at large. Second, and a related point, one expects that individuals’ inter-temporal planning decisions will have been through a period of con-
stant adjustment and revision as a result of the repeated changes to the level and structure of the generosity of expected future state support for cohorts in their retirement. While some revisions and updating of expectations are inevitable, presumably this level of instability in the policy environment is detrimental to individuals’ planning, and it is certainly the case that any ensuing uncertainty about future reform will have a welfare cost.

The papers in this issue provide insights into many aspects of household savings decisions. All show how micro data can be used, within an organizing conceptual framework of inter-temporal economic choices, to understand concepts (whether empirical, methodological, or theoretical) that inform our understanding of savings behaviour. These papers are far from providing answers to questions about how, or how much, individuals save, or how much, and in what forms, they should save. Such answers are beyond the frontier, given current models and data sources. What the papers show clearly, however, is the role that applied economic analysis can play in informing policy choices and research agendas in what is an increasingly important area of economic policy.

REFERENCES


