INTRODUCTION

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The second Banca d'Italia workshop on public finances aimed at providing an overview of the theoretical and empirical problems involved in the assessment of fiscal sustainability. For a long time the issue of sustainability has been addressed only in terms of the effects of the public debt on the economy, but in recent decades it has increasingly come to be associated with the future implications of current budgetary policies. The new perspective has been largely induced by the growth of the public sector, unfavourable demographic trends and large stocks of outstanding government liabilities. The additional tax burden required to finance expected expenditure increases has become the primary concern.

These developments can be seen in a number of studies defining the concept of sustainability and in an even larger number of empirical studies evaluating the implications of current policies in terms of expenditure, tax, deficit and debt trends. While the early work was mostly carried out by international economic organisations, in recent years a large number of government institutions and central banks have provided new estimates and contributed to the methodological debate. The contribution of academic work has also been substantive, including the development of the wholly new approach of generational accounting.

The issue of fiscal sustainability takes on a special relevance in the European Union. It is actually at the core of the budgetary framework underlying European Monetary Union. The Treaty of Maastricht and the

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Stability and Growth Pact have set fiscal rules and monitoring procedures aimed at restraining deficit and debt levels while allowing room for fiscal stabilisation. The assessment of prospective compliance with EMU fiscal rules is crucial to timely corrective intervention.

This volume collects the papers presented at the workshop and is organised along the same lines as the workshop. Papers are divided in four sections, corresponding to the sessions held at the workshop. The first section sets the ground for the discussion by addressing conceptual and definitional issues. The second and the third sections include papers presenting applications of different techniques for the assessment of fiscal sustainability. The former covers expenditure and revenue projections and the latter deals exclusively with generational accounting. The fourth and concluding section focuses on policy issues.

Conceptual and definitional issues

Five papers tackle these issues from different angles. In the opening paper, Balassone and Franco review the literature on fiscal sustainability in order to examine the comparative advantages and disadvantages of different methodologies and indicators and to highlight the areas in which more research effort is still needed.

They contrast the intuitive character of the concept of sustainability with the analytical and operational difficulties met with when trying to arrive at a rigorous definition. On the one hand, the literature has not produced a unique definition of sustainability; furthermore, the problem has only been dealt with in a partial equilibrium framework. On the other hand, the statistical definition of the main variables to be used for the assessment of sustainability is not uncontroversial; moreover, as the assessment is based on long-term projections, it is necessarily subject to wide margins of error.

Balassone and Franco also point out that, theoretical issues notwithstanding, the Treaty of Maastricht and the Stability and Growth Pact set fiscal rules which, if complied with, ensure sustainability according to any definition adopted. Techniques developed for the analysis of sustainability can therefore be used for the assessment of prospective compliance with such rules, a crucial task for both policy evaluation and timely corrective intervention.

In re-examining the pros and cons of available indicators, the first paper categorises the studies on the assessment of sustainability into two main strands: those testing for the sustainability of past policies and those assessing prospective fiscal stances. Among the latter a distinction is drawn between works based on standard national accounting concepts and generational accounting exercises. The paper concludes by stressing the need for further efforts to guide budgetary policy more effectively.

The other papers in the section take up and develop some of the issues introduced by this review. The difficulties related to the concept of sustainability and the analytical limits of available indicators for policy purposes are illustrated by Nigel Chalk and Richard Hemming. The authors examine the present value budget constraint and point to some of its limitations. Drawing on the IMF's extensive work in the field, they highlight the divide between theory and practice in the assessment of fiscal sustainability, with the frequent use of indicators not grounded in economic theory. They review the IMF's practice of taking a broad definition of the sustainability of current policies, in which the macroeconomic context is considered along with other factors, such as prospective infrastructure needs, and they examine how sustainability can be assessed on the basis of different definitions of public debt, taking into account public sector assets and implicit pension liabilities. Chalk and Hemming also consider the implications of non-renewable resources and refer to some empirical work modelling this factor. Finally, they stress the need for an integrated approach to fiscal and external sustainability, that relates the fiscal and the current account deficit.

Paul Hiebert and Massimo Rostagno explore the analytical links between EMU fiscal rules and the theory of fiscal sustainability with a focus on the transition to the equilibrium debt to GDP ratios implied by such rules. The authors argue that such a transition cannot be satisfactorily managed by simply prescribing strict adherence to the safety margins computed by the European Commission for the cyclically adjusted budgets of EMU member countries. This strategy may induce distortions in the way fiscal quantities respond to economic developments. They also point out that indicators like the tax-gap, while useful in signalling a prospective imbalance, do not translate automatically into policy prescriptions. Hiebert and Rostagno therefore explore the properties of a policy rule whereby fiscal variables are adjusted according to the distance between the current and the targeted

fiscal position and find that this allows a flexible pattern of fiscal response to both cyclical and structural changes.

The papers by Francisco de Castro Fernández and Pablo Hernández de Cos and by Niels Kleis Frederiksen provide case studies highlighting some of the practical difficulties met with in the evaluation of fiscal sustainability. The first paper presents a retrospective study of fiscal sustainability in Spain. The authors distinguish between "strong" and "weak" conditions for fiscal sustainability. Strong sustainability obtains when the debt is stationary or the discounted debt follows an I(0) process without drift or if revenue and expenditure are both I(1) and co-integrated. In these cases, if there are no changes in the statistical processes followed by expenditures and revenues, no future deficit problems are expected to arise. Weak sustainability requires the growth of debt to be lower than that of the economy. In this case it is possible that some difficulty arises in the marketing of growing amounts of debt. The ensuing increase in interest rates may affect economic growth. A fiscal adjustment may become necessary. The authors show that Spain in recent years has moved from weak to strong sustainability. They highlight the need for careful and detailed appraisal of available data before drawing policy conclusions and note that retrospective analysis is relevant only in so far as the economic variables involved in the assessment can be expected to follow past patterns.

Niels Kleis Frederiksen evaluates the prospective sustainability of Danish public finances. As an index of sustainability he uses the permanent adjustment of the primary surplus required to satisfy the intertemporal budget constraint. Rather than imposing, à la Blanchard, convergence to an exogenous debt ratio, he refers to a long-term horizon covering the transition to a steady state. The paper shows that current policies are close to sustainability. The negative effects of ageing on public budgets are offset by the positive revenue effects of the deferred taxation of accumulated pension assets and by the reduction in government debt determined by the current budgetary surplus. Frederiksen highlights the margins of uncertainty surrounding long-term demographic and labour force projections and the large effects on prospective sustainability of modest changes in the assumptions concerning these variables. Finally, the paper evaluates the tax-smoothing argument for pursuing sustainable fiscal policies, i.e. that tax rates allowing a reduction in the debt level now would pre-empt the need for future tax increases when ageing becomes more severe. On the basis of

simulations run with a dynamic general equilibrium model he shows that a temporary tax cut followed by a permanent wage tax increase would provide some, albeit modest, efficiency gains. Stable tax rates would therefore have to be justified on other grounds, such as equity aspects.

Different definitions of sustainability and of the empirical counterparts of the variables involved are reviewed in the paper by Michael Artis and Massimiliano Marcellino. They apply retrospective tests for fiscal sustainability along the lines of the paper by Fernandez and de Cos to EU countries and find evidence that debt to GDP ratios are converging. Aware of the need to take into account expectations of the future behaviour of fiscal variables before extrapolating the trends observed on past data, Artis and Marcellino point out that OECD medium-term forecasts seem to confirm a tendency to a decline in the debt-to-GDP ratios in EU countries and that there is a suggestion in the data that the 60 per cent threshold introduced by the Treaty of Maastricht has become an "attractor" for both high and low debt countries.

Nicholas Vanston, in discussing the papers in this section, focuses on the macroeconomic developments that brought to the fore the issue of sustainability during the eighties after the long neglect which followed the early analysis by Domar in the forties. Vanston notes that initially there was not a reference to an analytical notion of sustainability; it was simply that forecasts indicated the prospect of deficits and rising debt ratios "as far as the eye could see". He argues that it is hard to know how seriously the subsequent theoretical refinements were taken at the political level and points out that the Maastricht criteria for debt and deficit seem more in line with the early concerns than with the more elegant, if ambiguous, theoretical analyses to which the papers presented in the section refer.

The discussion by Michael Artis points to the difference between the notions of solvency and sustainability. The former is a technical concept referring to the government capacity to pay its debts via the future set of primary surpluses. The latter is a somewhat more imprecise concept referring to the possibility of maintaining current policies. Sustainability conditions can sometimes be more stringent than solvency conditions. Governments that are solvent may nevertheless have to change their policies to reduce the debt level in order to avoid debt runs. Artis notes that the empirical verification of sustainability is seriously affected by the lack of adequate data. More specifically, the use

of backward-looking techniques is rendered difficult by structural changes in time series. Artis also considers the interaction between the pragmatic approach of policy makers and theoretical analysis. He notes that pragmatic decisions, such as those concerning the Maastricht criteria, while frequently criticised in the economic literature for lack of economic rationale, have often proved effective and have stimulated theoretical work.

Long-term budgetary projections

The six papers included in the second section examine a number of methodologies developed in recent years for evaluating the implications of current policies in terms of public expenditure, revenues, deficit and debt dynamics. Most of the studies focus on the public expenditure items which are particularly dependent on the age structure of the population, seeking to assess the likely change of their incidence on GDP. They basically aim at evaluating the adjustments required to ensure budgetary sustainability. One paper addresses an issue which is relatively new in the field, the sustainability of current revenue trends, considering whether public receipts can be significantly affected by factors out of government control. Altogether the papers provide a comprehensive survey of how long-term projections can be used to approach the problem of sustainability from an empirical point of view.

Werner Roeger analyses the economic and budgetary implications of current demographic projections for Europe and the US over the next 50 years, within the framework of a multi-country dynamic general equilibrium model. Roeger evaluates the labour supply implications of demographic changes and, drawing on previous public expenditure projections, evaluates the effects of ageing on GDP and consumption growth, on the capital to output ratio and on interest rates. The analysis indicates that the effects of population ageing on per capita income and consumption will be sizeable from 2020 onwards. The model indicates that forward looking households can cushion the decline in real consumption by increasing the rate of savings over the next 20 years. This lowers interest rates and increases the capital stock. When dependency ratios peak, households run down their capital stock. Roeger focuses on the implications of financing additional pension expenditure in a PAYG system and on the effects of distortionary taxes on

unemployment rates. The simulation results show that while it will be possible to finance the additional expenditure even using distortionary taxation, the economic and budgetary costs will be large.

Helvi Kinnunen and Pasi Kuoppamäki examine the sustainability of public finances in Finland and the four main euro area countries. The analytical framework is based on intertemporal budget dynamics. The paper shows that, in spite of the increase in age-related expenditure, the policies implicit in the 1997 primary budget balances would lead to a non-increasing debt ratio in almost all countries. The paper evaluates the implications of different growth and interest rate assumptions. The sensitivity calculations indicate that the response of the public debt and deficit ratios is stronger with respect to interest rate changes than it is to growth changes. However, the calculations show that a severe recession would lead to prolonged fiscal imbalances in some countries. Kinnunen and Kuoppamäki also estimate the tax-gaps, i.e. the change in the tax to GPD ratio, required to ensure debt stability or to fulfil the Stability and Growth Pact requirement of a balanced budget. The latter criterion is more demanding than the former. The authors note that comparisons of tax-gaps between countries should be considered very cautiously since they do not provide indications about the constraints that policymakers actually face. They also note that tax competition may significantly affect fiscal policy, in particular in highly taxed countries.

The paper by Henri Bogaert focuses on Belgian budgetary prospects. It presents the Maltese model developed by the Federal Planning Bureau in order to evaluate alternative pension reforms in a broader budgetary context. The model includes a number of interdependent sub-models linking demography to the budget and to deficit and debt dynamics. The paper evaluates the effects of ageing on future primary surpluses in a constant-policy scenario. It computes the level of the "minimal sustainable primary surplus", which is the primary surplus of the non-age-related budgetary items, which, if reached immediately and maintained constant, verifies the intertemporal budget constraint. Bogaert notes that the Stability and Growth Pact implies a different approach to ensuring sustainability. The Pact recommends a balanced budget over the cycle. Such a strategy leads to a primary surplus whose level depends on the debt to GDP ratio. As the latter tends asymptotically to zero, the primary surplus required by the Pact gradually declines. In the case of Belgium, the Pact requires a surplus which is

initially higher than the minimal sustainable surplus, the ensuing fast reduction of the debt in the period 2000-2010, when the ageing problem is not yet very acute, will compensate later for the costs of ageing.

Rocco Aprile and Aurelio Sidoti present the forecasting model developed by the Italian Ministry of Treasury in order to evaluate the long-term prospects of the pension system. The model is characterised by the effort to consider in detail the legal and institutional framework. In particular, it caters for the different solutions introduced by the reforms enacted in the 1990s for members of the various pension plans, and for workers of different age and contributory periods. Individuals are grouped according to several state variables (such as age, pension regime, etc.). For each combination of state variables, the model estimates the average relevant monetary variables (pension, contributions and earnings), the variance and a distribution function. Transition matrices define the probability of moving from one state to another. The paper focuses on recent methodological refinements aimed at improving the analysis of the effects of demographic changes on employment. The paper shows that changes in activity and unemployment rates produce sizeable effects on the expenditure to GDP ratio for several decades but do not affect the steady state level of the ratio, which depends only on the structure of the pension system.

Stephen Miners enriches the set of variables affecting fiscal sustainability by considering not only demographic trends but also factors such as medical technology and nuclear decommissioning. He focuses on the UK budget and compares the results obtained with long-term projections produced in the framework of the Code for Fiscal Conduct with those obtained with generational accounting exercises and with other estimates carried out for the UK by international organisations. Despite the different approaches and assumptions, all studies seem to agree that the UK is not facing significant long-term sustainability problems. While the UK is in a stronger position than most countries with respect to demographic trends, the author argues that the positive results of sustainability tests for the UK also reflect the recent implementation of measures designed to control the risks of unsustainable demand for social security and health spending.

The paper by Carlos Martinez-Mongay differs from the others in this section in that it focuses on the long-term determinants of government receipts rather than expenditure. The author examines the

evolution of revenues in EU countries over the past thirty years as well as the literature on the factors affecting revenue trends in the long run. More specifically, he reviews the role of ageing, economic integration and structural changes. Two sets of econometric estimates are presented. The first is based on a panel of data covering 17 countries (EU members, USA and Japan) over the 1970-1998 period. The second is based on time series analyses at country level for the same sample. Martinez concludes that the long-term determinants of revenues and expenditure are broadly the same: demographic dependency, labour market performance and income. Other structural factors play a secondary role in explaining the evolution of tax burdens in industrial countries. Higher shares of self-employment and manufacturing employment tend to reduce tax receipts, but the effect is relatively small. However, economic integration and technological changes may play a relevant role in shaping tax structures and determining the tax burdens borne by labour, capital and consumption.

The discussion by Geert Langenus stresses the difference between the uncertainty surrounding short and medium-term forecasts by fiscal policy analysts and the risks embedded in the long-term projections used to assess fiscal sustainability. First, there is a difference in the order of magnitude involved; second, there is a qualitative difference concerning the assumptions pertaining a number of economic and non-economic variables that need to be made explicit in a long-term context. Langenus notes that while from a budgetary point of view the problem posed by the ageing of population can be seen as a distributive one, demographic trends also have an impact on the overall size of the income to be distributed. He emphasises the need for an increase in employment and participation rates to compensate the negative effect on production of a fall in the working-age population. In this respect he contrasts the relatively optimistic conclusions reached by Bogaert with the somewhat gloomier perspective taken by Roeger.

Sandro Momigliano argues that long-run projections of tax revenues are especially difficult and risky in the context of EMU as one needs to evaluate the effects of tax competition in a context of growing integration. He contrasts this with the hypothesis adopted by Kinnunen and Kuoppamaki that tax ratios will converge to the current European average. He then goes on to argue that the current balance between the public and the private sector cannot be taken as fixed in the long run. On the one hand, the "constant rules" hypothesis adopted by Miners,

Bogaert and Aprile and Sidoti concerning, *inter alia*, the indexation of pension benefits to prices alone may result in an under-estimation of future expenditures. On the other hand, the hypothesis of an above-unity value of the elasticity of health expenditure – such as in the paper by Bogaert – may result in an over-estimation of expenditures in case of favourable economic developments (e.g. if private disposable income grows fast) as the responsibility for part of health care may be shifted to the private sector. Finally he calls for greater attention to be paid to how agents adapt to changes in rules governing public revenues and expenditures as these may have a bearing on the forecasts. As an example, he stresses the link between pension legislation and saving decisions.

Generational Accounting

The papers included in the third section tackle the issue of sustainability in the framework of generational accounting. This approach, based on the intertemporal budget constraint, allows to take into consideration the implications of fiscal policy for the different generations. While the first paper provides a survey of the results of an international project, the other four papers provide country specific studies. Each paper presents specific methodological aspects. Overall they offer a comprehensive view of the results and prospects of generational accounting.

Willi Leibfritz outlines the purposes and features of generational accounting and reviews the main results of a project applying the technique to 17 countries. In most countries current policies are not sustainable. Future generations would have to pay higher net taxes than current generations. Demographic changes are the main source of the generational imbalances with current public debt playing a significant role in some countries. The paper includes estimates about the alternative expenditure cuts or revenue increases required for correcting the imbalances. It also argues that governments would alleviate the adjustment by reducing debt and deficit levels before the peak of population ageing. Leibfritz concludes with some suggestions for policy and methodological improvements. He notes that the availability of information about the implications of ageing and of alternative policy reactions is a precondition for the implementation of appropriate policies

and that the computation of generational accounts on a regular basis can contribute to improve the decision making process. He suggests that differences from previous estimates should be thoroughly explained and that the base year data should be adjusted to remove the effects of cyclical or temporary factors. He also advises to complement the indicator of intergenerational imbalances with the debt to GDP ratio, which is more familiar to policy-makers.

The paper by Bernhard Manzke examines an application of generational accounting to Germany. The paper highlights the limitations of this approach. In particular, dynamic economic feedbacks are ignored; the base year budgetary situation is projected to the future without considering that it may be affected by special factors; reforms which have been introduced but have not produced effects in the base year are ignored. The paper also stresses that generational accounts cannot be considered forecasts of the most likely future developments, rather they are indicators of the need for adjustment. Manzke argues that a gradual and limited increase in the lifetime tax rate for future generations could be considered acceptable from a distributive point of view having in mind the increase in their incomes. However, the large tax increase projected for Germany implies that future income increases would be significantly eroded by taxation. Moreover, the changes in behaviour induced by the greater tax burden would negatively affect economic growth. The paper shows that the intergenerational imbalance in Germany is determined by population ageing. Under a constant age structure assumption, the imbalance would disappear. Estimates taking the expected increases in the contribution rate to the pension system into account point to a lower generational imbalance. Present generations would carry a part of the burden of the adjustment.

Gerbert Hebbink estimates generational accounts for the Netherlands. He presents a baseline scenario according to the standard generational accounting approach, in which constant productivity growth is assumed in the future. Forecasts for the traditional deficit and debt measures computed with the generational accounting model are also provided. The deficit would gradually increase. The debt would first decline and then substantially increase. Hebbink departs from the standard approach by introducing a link between the share of public investment in GDP and productivity growth: a policy that shifts expenditure from transfers to investment would increase productivity growth and reduce intergenerational imbalances. However, the link does

not significantly affect the results: even doubling the ratio of public investment to GDP would not be sufficient to make fiscal policy sustainable.

Roberto Cardarelli and Nicola Sartor present generational accounting estimates for Italy which is characterised by the very low fertility rate, the high public debt and the large proportion of social expenditure targeted to the elderly. The paper points to the reduction in the intergenerational imbalance achieved in the past decade, but also to the need for further adjustments. The authors show how generational accounting translates the intertemporal budget constraint into a series of generational net fiscal positions that indicate which generation will bear the burden of consolidation. They note that the standard practice of simply comparing the fiscal position of new-born and future generations is unsatisfactory, since it assumes that living generations carry no burden and all future generations necessarily carry the same burden. In this context, there is no distinction between unsustainability and inequality. The one implies the other and viceversa. Therefore, Cardarelli and Sartor consider alternative indicators, such as the immediate and permanent change in tax or spending that would be necessary for all generations to ensure sustainability. The paper extensively analyses the impact of the pension reforms on intergenerational imbalances. It shows that the reforms introduced in recent years have largely reduced the existing imbalances and it evaluates the implications of further reforms. In particular, the authors stress the need for policy actions improving the balance between active and non-active individuals. Finally, they note that any policy reducing the debt to GDP ratio to a specific level within a specific period of time changes the generational distribution of the burden associated with the solvency constraint.

The paper by Carl Gjersem on generational accounting in Norway is particularly interesting for two reasons. First, Norway is the only European country in which generational accounts are regularly presented in official documents to guide policymaking. Each year the National Budget includes a section on generational accounting highlighting the change in general government consumption required to restore balance between generations. Second, the budgetary situation of Norway is much more favourable than that of other developed countries. After examining the state and prospects of Norwegian public finances, the paper gives an account of the development of generational accounting in Norway. It points to two specific features: the need to evaluate

alternative policies for exploiting non-renewable resources (petroleum revenues) and the need to consider the possibility that estimates based on a single year may provide misleading indications in a country with strong business cycles. Intertemporal distribution is at the core of the first aspect. This makes generational accounting particularly well suited for the analysis of alternative policies. Cyclical effects are taken into account via an adjustment of the estimate of the change in public consumption. Gjersem relates the role of generational accounting in official documents to the tradition of long-term planning and analysis and the use of numerical models.

In introducing his discussion of the papers of this section, Harry ter Rele notes that generational accounting can improve the decision-making process in the fiscal domain. It can also enhance efficiency if tax rates are set at a sustainable stable level. Several of his comments aim at making the results of generational accounting more comprehensible to policy makers. Ter Rele criticises some of the standard indicators used in generational accounting studies, such as the absolute difference in net taxation between newly born and future generations. For instance, these measures unrealistically assume that current generations, even new-born ones, fully escape the required adjustment. Ter Rele suggests to express the burden for the various generations in terms of percentage of lifetime income. He also suggest referring to the immediate and permanent adjustment of taxes or transfers as a percentage of GDP to be applied to all generations to correct the fiscal imbalance. He notes that the 5% real interest rate assumed in the studies examined by Leibfritz can be too high in a situation in which savings are relatively high in connection with the ageing of population. Ter Rele objects to Manzke's argument that a moderate increase in the burden for future generations can be acceptable. He notes that if each generation were to argue in this way, the burden of taxation would progressively increase over time with detrimental effects on incentives. Ter Rele considers that the scope for raising productivity by increasing public investment is more limited than assumed by Hebbink.

Policy issues and links with the Stability and Growth Pact

The costs of an unsustainable fiscal stance are relatively obvious; however, sustainability cannot be restored for free. Both costs

have policy relevance and need to be assessed; this is the focus of the last section.

The paper by Anne Brunila is based on the report of a working group set up by the Finnish Economic Council with the task "to evaluate the operating framework of the public sector in Finland, the long-term challenges and pressures for change, and to present different policy options to ensure that the public sector will be able to carry out and develop its main welfare functions in a sustainable manner". The paper describes the challenges faced by the Finnish welfare system: population ageing, increasing number of early retirements and declining labour force participation. Long-term projections based on generational accounting are presented to assess the extent of the ensuing financing pressures. The policy options to address such pressures are discussed and the need for measures aimed at raising labour force participation and productivity is stressed. In addition to removing the incentives for early retirement and the disincentives to work longer, the author argues that a marked reduction of the tax burden targeted on labour would be necessary. Taking into account the objectives set in the Stability and Growth Pact, this tax reduction in turn requires savings in government expenditure.

The decline in labour force due to ageing in the Finnish economy is also at the core of the analysis by Urpo Hautala and Jorma Tuukkanen. The authors' starting point is to note that while a social security system with wide coverage, high benefits and little incentive to work can cause a substantial loss in terms of labour force and production, a properly tuned system can bolster sustainable economic growth and welfare. Hautala and Tukkanen propose a mixed pension system composed of two tiers: an actuarial defined-benefit pension and a defined-contribution account pension. They argue that the new system would provide a suitable trade-off between insurance that balances out risk (defined-benefit) and saving (defined contribution), increasing personal responsibility and encouraging work. The ensuing reduction in expenditure would avoid the increase in the tax burden that would otherwise be necessary to avoid debt accumulation.

The other papers in this section take a broader view considering the interplay between sustainability and other fiscal policy targets in relation to EMU fiscal rules.

Yngve Lindh and Henry Ohlson express concerns about the capability of EMU rules to ensure a symmetric response of fiscal policy to cyclical short-term fluctuations and the capability of fiscal policy to adequately adapt to long-term changes. They point out that during the last decades the Swedish budget cycles have been asymmetric, in the sense that surpluses during expansions have been smaller than deficits during recessions (a common characteristic among European countries). This asymmetry was the cause of a trend increase in public debt. The authors argue that if a short-term horizon is assumed, the crisis the Swedish public finances went through in the early nineties appears to be overcome now. However, they point out that it is less clear whether long-run trends have truly changed. Lindh and Ohlson recognise that EMU fiscal rules and the related "peer pressure" within the union put strong restrictions on deficit and debt. However, they doubt that EMU fiscal rules will by themselves be sufficient to ensure a stable reversal of the negative trend experienced by the Swedish public finances.

Bertholt Leeftink investigates whether a potential trade-off exists between budgetary sustainability and budgetary stabilisation and whether monetary union requires closer budgetary co-ordination than currently envisaged. Leeftink argues that the Stability Pact far from limiting member countries' capability to cushion asymmetric shocks, may even facilitate stabilisation. The reason being that the prudent budgetary policy induced by the Pact reduces uncertainty about the sustainability of fiscal policy and therefore restores the stabilising properties of the budget: by enhancing credibility, sustainability allows effective stabilisation policy. Leeftink also compares the intertemporal stabilisation provided by the national budgets of EU member countries with that offered by the federal budget in the USA and finds that the two systems offer a similar degree of stabilisation.

Finally David Cronin and Daniel McCoy observe that, in contrast to most other EU member states, Ireland is fortunate to have time on its side to deal with the fiscal sustainability issues that an ageing population will present. This is so both because the Irish economy has had several years of strong economic growth to turn around its macroeconomic performance and to put its fiscal balances in a solid position, and because the demographics are such that Irish policy-makers have over fifteen years to prepare for the ageing of population. At the same time, however, the very long-term nature of the problem makes EMU fiscal rules insufficient to provide the incentives to undertake now,

in favourable conditions, the policy reforms that would avoid a problem of sustainability and that would become extremely costly if undertaken at a later stage. Cronin and McCoy also point out that traditional growth theory suggests that since rules for sustainability involve interest and growth rates, one should take into account the stage of development of the economy to which such rules are applied. Therefore, they argue that there is a possibility that an economy with under-utilised resources or underdeveloped capital or deficient infrastructure may need to run larger deficits than allowed for under the Stability and Growth Pact. This possibility will become more relevant with the accession of new member states.

Marco Buti provides an extensive discussion of the issues raised by the papers in this section. He fully shares Leeftink's points on the absence of a trade-off between fiscal discipline and stabilisation policy and on the possibility that discipline may indeed be a prerequisite for effective stabilisation. He is also sympathetic with the view that motivates the papers by Anne Brunila and by Urpo Hautala and Jorma Tuukkanen, i.e. that fiscal prudence cannot substitute for structural reforms if one is to tackle at source the budgetary implications of demographic trends. He recognises that EMU fiscal rules do not provide incentives to pre-fund future pension liabilities in normal or bad times but argues that they do so in good times. Finally Buti shares the view that the "one-size-fit-all" nature of European rules may pose a problem for the level of public investment required by catching-up economies.

In his discussion of the papers of the last section, Platon Tinios notes that economic theory has highlighted a number of structural reasons for the governments not to be fiscally prudent (the finite horizon of politicians, the partisan nature of political parties, etc.). He points out that these factors are all too well confirmed by the experience of most European countries. Tinios also shares the concerns expressed in the papers and remarks that while rules such as those designed for EMU are useful in providing clear signals (the point made in the paper by Leeftink) and as shortcuts to what can be quite elaborate arguments, they should not become substitutes for planning policy actions with a view to a broad spectrum of economically relevant aspects (a risk which is ultimately at the core of the concerns expressed in the papers by Lindh and Ohlsson and by Cronin and McCoy). Tinios stresses the need for a sustained effort by the public finance analysts to provide information so that governments incorporate a budget constraint in their decision process.