Public finance and the role of the state: International perspectives

A B Atkinson

Nuffield College, Oxford and
Institute for New Economic Thinking at the Oxford Martin School

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1. Public finance on the agenda

All round the world, governments are facing fiscal challenges. This is not new. Throughout history, rulers and governments have struggled with the problem of financing the activities of the state. The public finances are at the heart of the state. But today, a number of long-standing issues have come to a head. The ageing of populations is placing ever-increasing pressures on the government budget in the form of state pensions and the public provision of health and care services. These services in turn are facing rising costs on account of their labour-intensive nature and limited scope for productivity increase (Baumol’s relative price effect). On the other side of the budget, globalisation, tax competition, and the virtual economy are making it increasingly difficult for national governments to raise tax revenue. Increased income inequality within countries is accompanied by greater obstacles to taxing the rich, and taxation is increasingly borne by labour rather than by capital. Countries face these problems to differing degrees, depending on their history, their demographic structure, their extent of openness to the world economy, their level of development, and their structure of governance, but fiscal issues are never far below the surface.

The problems of public finance are long-standing, but they have come to the fore in many countries with the financial crisis and recession/slower growth. OECD countries tried, to varying degrees, to protect their citizens against the decline in GDP. As a result of automatic stabilisers and discretionary stimulus packages, household incomes, in much of the euro area, have not borne the full burden of the recession. But this came at a cost in terms of government budget deficits. These deficits added to the national debt, as did the cost of measures taken to rescue financial institutions. The debt to GDP ratio rose. European governments are now cutting back their welfare states.

In the short-term, attention is centred on measures to deal with public deficits. Many countries have adopted, or have been required to adopt, austerity programmes. The focus of this paper however is on the medium-term and long-term fiscal problems, drawing on international experience with the aim of identifying key issues for China. How can fiscal performance be assessed? Do the recent debt financing problems in Europe mean that the European social model is unsustainable? What should be the shape of the fiscal system in an advanced market economy? Is the government budget becoming less effective as an instrument of redistribution? In discussing these questions, I have drawn on the experience with which I am most familiar - that of OECD countries.
Scope of the paper

The paper has 5 main sections (and a concluding Section 7). The next section (Section 2) sets out in general terms some of the arithmetic - often unpalatable arithmetic - of the public finances. It highlights the balance sheet of the public sector, the role of state ownership, and the need for a broad view of the public sector. One of the key components of the government budget is social spending: the welfare state. The extent of public social spending varies across countries, and the balance between public and private provision is the subject of Section 3. What considerations should influence the choice between a European-style welfare state and an Anglo-Saxon greater reliance on private provision?

Such a choice depends significantly on the capacity to raise tax revenue. Section 4 considers the overall design of taxation, often portrayed as a trade-off between efficiency and equity, but where there may be scope for reforms that make progress on both dimensions. It points to the importance of the question of incidence (relevant to both taxes and government spending), which is central to understanding the implications of policy change, and examines the implications of there being a large state-owned sector in the economy, as in the case of China. The choice depends also on the distribution of benefits and burdens. The United States (US) may spend more on health care, but it has more people without health care insurance coverage. Section 5 is concerned with inequality and redistribution via taxes and social transfers. The OECD has recently argued that fiscal redistribution has become less effective (OECD, 2011). The present paper describes the basis for these conclusions and presents some evidence comparing China, the United Kingdom (UK) and Brazil. Rising inequality of pre-redistribution incomes in the OECD is most marked at the top, and the section concludes with evidence from the World Top Incomes Database, which includes figures for China. In addition to transfers, a key role is played by the provision of social services. A major responsibility of the state in an advanced market economy is to ensure that all its citizens have access to high-quality social services, such as education, health, housing, safety, water and sanitation. Section 6 takes up the contribution of public services to living standards, highlighting the importance of the quality of services and the inter-generational aspects of such provision.

The main conclusions are summarised in bullet points in Section 7.

There are many topics not discussed in this paper. Perhaps the most important, in the Chinese context, is the relation between different levels of government. The question of fiscal design is discussed here from the point of view of a country as a whole. Clearly there are serious issues in the implementation of fiscal policy in a situation where much of spending and taxation is carried out by sub-national governments.
2. Public finance arithmetic

The fiscal ratios currently in the news - the sources of political alarm - are the government deficit and the government debt, each expressed as percentages of gross domestic product (GDP). These are important, but do not tell the whole story and should not be the only variables driving the formation of policy. One should not attach too much attention to such ratios. There can be two countries with the same debt to GDP ratio but which face quite different fiscal prospects. Moreover, one must not lose sight of the fact that they are statistical artefacts. It is with this latter point that I begin.

Deficit and debt figures influence the financial markets, and are enshrined in legislation, as in the case of debt ceilings. In the European Union (EU), the Excessive Deficit Procedure (and the new Treaty on budget discipline) requires Member States to limit their deficit/GDP and debt/GDP ratios. It is important, however, to remember that these are based on statistical constructions. It is the task of Eurostat to ensure that there are agreed definitions and that these are applied uniformly, but there is a degree of arbitrariness in the definitions. Measuring the public sector is not like measuring the speed of light. There is room for disagreement about where exactly the boundary of the public sector is drawn. For example, are universities included? What about private hospitals where patients are reimbursed by the state? Equally, the UN System of National Accounts has periodically been revised. The revisions have typically extended the definition of GDP, in particular through the imputation of non-market activities, such as the imputed rent on owner-occupied housing, or the use of indirect measures (FISIM) to calculate the output of financial services.

The conclusion I draw is, not that one should reject use of such ratios, but that they should be interpreted in the light of the end purpose. The aim of the debt/GDP ratio, for example is to provide a measure of the capacity of the state to finance the interest and repayment. As such, it should be related to the potential tax base, which may be less than GDP as now measured. For instance, given that few countries now tax the imputed rent on owner-occupied housing, the effective tax base does not include this item, even though it now represents a significant part of GDP (7 per cent in the UK in 2010). Equally, the taxable value added of the banking sector may not be reflected in the FISIM measure that forms part of GDP. With this qualification in mind, we may examine what the tax ratios show.

Tax ratios

The deficit may be addressed by cutting public spending or by raising taxes. An important public finance question is the extent to which there is a choice
between these two routes. For this purpose, we need to look at the ratio of taxes to the potential tax base (taken, bearing in mind the qualifications above, as GDP). How far can this ratio be raised? Supposing that the tax base contracts as the tax rate rises, is there a maximum to the revenue that can be raised? Turning the question round, can we take the tax ratio (total taxes/GDP) as a measure of “fiscal effort”? From Figure 1, it may be seen that there is wide variation among OECD countries, with the ratio going from 17.5 per cent in Mexico to 48.2 per cent in Denmark, with the unweighted OECD average being around 35 per cent.

From the examples of Mexico and Denmark, it is tempting to conclude that the tax ratio increases with GDP per capita. However, this is not necessarily the case. For example, Bird and Zolt concluded from an analysis of data for 168 countries that there is only a weak relationship between economic development and the level of taxation:

“the relationship between rising income levels and higher taxes is significant only for the poorer countries. As incomes rise in poor countries, the size of the public sector almost invariably becomes relatively larger. After some point, however, this “income determinism” of the tax level declines and the relationship between income and tax levels largely disappears. ... rich countries have more choices, and some rich countries have chosen to levy much lower taxes than others.” (Bird and Zolt, 2003, page 7).

The wide variation in ratios across countries may be seen therefore as indicating that the importance of choice: there is a menu from which governments may make their selection. Against this, it has been suggested that the variation reflects the specific features of each country. Commentators have drawn attention to the difficulties that countries seem to have faced in seeking to increase the tax/GDP ratio. This applies particularly to Latin America. Bird, Martinez-Vazquez and Torgler note that, for example, “one of the most striking features of the various major tax changes that have taken place over the decades has been how very little apparent effect they have had on Mexico’s tax-GDP ratio, which has remained almost constant: it was 10.2% in 1980 and 10.1% in 2004” (2008, page 55). In recent years, however, there have been increases, including in Mexico (although this depends much on the revenue from oil and how it is treated in the statistics) - see Figure 2, which also shows increases of more than 10 percentage points in South Korea and Turkey. In its study of tax revenue in Latin America and the Caribbean, the OECD found that “the average tax to GDP ratio [in 12 counties] rose almost continuously from 14.9 per cent in 1990 to 19.2 per cent in 2009” (OECD, website).

My own conclusion is that, while the menu may not be as wide as from 18 to 48 per cent, there remains considerable scope for choice about the ratio of taxes to GDP in an advanced market economy.
Public sector balance sheets

Much attention is - as above - focused on flows, but the balance sheet position is highly relevant. Taxes are necessary to finance current debt interest and repayment, but it is the stock of debt that determines the long-run prospects. Moreover, it is important not to focus solely on the liability side of the balance sheet. There is here an asymmetry. For most countries, it is easy to obtain statistics on the national debt, but information about the asset side is less readily available. In part this is for good reason. While some assets have an ascertainable market value (such as the shareholding that the UK government once had in BP), most of the assets of the state are not easy to value, and some - such as historic buildings - are scarcely susceptible of valuation. At the same time, perpetual inventory and similar methods can be used to value much of the infrastructure, and hence provide a measure of the change in the value of assets.

The value of such balance sheets may be illustrated by the official balance sheets for the public sector constructed in the UK since the 1950s - see Figure 3. In the early years, the net worth was negative. Government debt outstanding exceeded the estimate value of national assets (schools, roads, land, etc.). Over time, the state net worth became positive, and by 1979 had reached a level equal of some 130 per cent of national income. The government then embarked on the sale of public assets, particularly housing but also public corporations, with the proceeds being used to finance tax cuts. The consequence is that the public sector net worth is now close to zero.

The UK is not alone in this experience. Many countries have dissipated state wealth, notably after the end of the Communist regimes in Eastern Europe and the former USSR. This has obvious lessons for China, where the public sector balance sheet has, I understand, for a long time been large in relative terms, and where the value of state assets, including land and shares in publicly listed companies, has grown greatly in recent years. This brings me to the final point of this section.

Broad view of public finances

In considering the fiscal situation, it is important to take as comprehensive a view as possible of the scope of the public sector. For example, in can be argued that the balance sheets just described for the United Kingdom need to be augmented by taking account of the liabilities of the state for pensions. This applies both to the rights in state pensions that have been accumulated by all workers under the National Insurance scheme and to the unfunded liabilities of the
pensions for public employees. As may be seen from Figure 3, these are considerable. When account is taken of the accumulated past liabilities under the National Insurance scheme, the state was at no time in positive territory. At the best (in 1979), the positive net value of assets matched the state pension obligations (but not those for public sector employees). Since the decline in state assets, the net position, allowing for the accrued liabilities for pensions, has always been negative. Now it can be argued that pension obligations are different from those to bond-holders in that they do not have to be financed or re-financed. There is no counterpart to bond auctions. But the current pension payments represent a claim on tax revenues, and would continue to do so for many years, even if new accruals under the pension schemes were ended.

The extent of pension obligations varies across countries, depending on the balance between funded and pay-as-you-go pensions, and on their generosity, but the problem illustrated in Figure 3 is a widespread one. The maturing of state pension schemes is one major source of the current fiscal problems. This may be obscured where social security is separated from the main government budget, and this is why it is important to have a “whole of government” approach.

There are two further ways in which the net has to be drawn widely, which seem particularly relevant to the Chinese case. The first is the full integration of different levels of government. This applies to the balance sheets of different levels of government, where, in statistics of national debt, it is not always clear whether the debt refers to that of the central government or to that of all levels of government (netting out holdings of each level’s debt). It applies to comparisons of tax rates. For example, in the UK much attention has been paid to the top rate of tax of 50 per cent, which is being cut by the current government, in part on the grounds that the rate was high by international standards. As is illustrated in Figure 4, based on OECD figures for 2010 for a range of countries with sizeable sub-national taxes, it is important to take account of sub-national as well as central government taxes when making such comparisons. The differences in top income tax rates are much reduced when the lower-level governments are included.

The second aspect of broadening, returning to the flow accounts, is the recognition of the parallel between indirect taxes and the charges made for state supplied goods and services. Where state-owned enterprises occupy a significant role in the economy, their pricing policy can materially influence the public finances and the structure of pricing can have distributional consequences. In this context, and in the later discussion, it is important to distinguish between the “control” dimension of state enterprises, where the government - central or local -

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2 This refers to the future payments due to those already retired and to current workers on the basis of past contributions (the “accrued-to-date” liability). It does not include any liabilities that may accrue as a result of future contributions.
can directly influence enterprise policy, and the “beneficial ownership” dimension. Thus, a country can retain, via a privileged share, control over an enterprise, while allowing shareholders to receive the bulk of the profits. Or, conversely, it can own a sizeable shareholding, benefiting fiscally, without exercising influence on the policies of the enterprise.

A broad approach to the definition of the public sector is important when it comes to the design of policy reform. Policy change in one area may have significant implications for other areas. For example, measures that influence the degree of competition between enterprises have potential consequences for the receipt of profit taxes. Whether it is desirable to maintain low energy prices to protect low income households depends on the other possibilities for income support. A broad approach is necessary since the boundary between public and private is not a clear-cut one. Maternity leave, for example, may be funded by the state as a transfer, or it may be mandated that employers provide such paid leave, in which case the cost falls on the employer. A person may contribute to charitable relief, but the cost of such private activity is reduced if the charitable donation can be set against tax. The issue of the boundary becomes important when considering the alternatives to state provision, which is taken up in the next section.
Source: OECD website, Tax Revenue Statistics

Source: OECD website, Tax Revenue Statistics
Figure 3 Public sector balance sheets in United Kingdom 1957-2009

- Not allowing for pension liabilities
- Allowing for National Insurance pension liabilities
- Allowing for all pension liabilities

Source: see Atkinson (2011).

Figure 4 Top income tax rates: central government and sub-national governments

Source: OECD Tax Revenue Statistics. Note: figures for sub-national governments are representative or average rates.
3. The balance between public and private provision

Looking to the future, one of the central questions for fiscal policy is the balance between public and private provision, particularly with regard to the welfare state. For many advanced countries, welfare state spending expanded during the process of industrialisation, notably in Europe, and China is faced with a choice between such a “European model” and the path chosen by the United States, where public spending on welfare is a smaller proportion of GDP (and the tax ratio is, as shown in Figure 1, among the lowest in OECD countries). This choice is being made at a time when European economies are struggling with fiscal problems, and these problems are attributed by some observers to the generosity of the European welfare state provisions.

Social spending and economic performance

Social spending does constitute a major outlay when expressed as a proportion of GDP - see Figure 5, which relates to a year (2005) before the economic crisis. The OECD average was 23.6 per cent. There was also considerable variation across countries. Leaving aside Mexico and Korea, the US percentage was just over half the percentage for Denmark. Within Europe, the percentage was under 20 per cent in the Slovak Republic and Ireland, and above 30 per cent in Austria, Denmark, France and Sweden.

Are these differences associated with differences in fiscal sustainability? In this respect, it is interesting to see the position of those European countries that have struggled most in recent years. While countries that have faced debt problems - such as Spain, Portugal and Italy - had spending above the OECD average, so too did a number of European countries that still enjoy triple A rating for their government debt. Indeed, of the 10 countries triple A-rated by Standard and Poor’s in April 2012, 8 were at or above the OECD average for social spending (as were 3 of the 4 triple A-rated by the Dagong agency). Exposure on the bond markets does not seem to be related in a simple way to the scale of social spending.

Nor is there any simple relation between social spending and growth. In Figure 6 is plotted the increase in GDP volume per capita (PPS) between 1997 and 2007 (i.e. pre-crisis) for each of the 26 countries shown in Figure 5 against the level of social spending. There is a slight (R-squared 0.08) downward tendency - for growth to be smaller with larger social spending - but this disappears if we exclude countries with 1997 GDP per capita below 60 per cent of the OECD average (Czech Republic, Korea, Mexico, Poland, and the Slovak Republic). For the remaining 21 countries, the correlation is close to zero. It is true that Australia and Canada, with spending below 20 per cent, grew more than France and Germany.
over this period, but their superior growth performance was matched by Austria, the Netherlands and the UK, which had spending closer to 25 per cent (or over 30 per cent in the case of Austria). Finland and Sweden grew considerably faster.

What about employment? The standard view has been that the welfare state in Europe has provided social protection but at the cost of jobs. In Figure 7 is plotted the employment rate (for men and women aged 15 to 64) in 2007 against the level of social spending for each of the 26 countries shown in Figure 5. There is no apparent correlation. It is true that the employment rate in the US was 71.8 per cent in 2007, compared with 67.0 per cent in the EU15, but the difference was much smaller than in 2000, when it was more than 10 percentage points. The employment gap between Europe and the US narrowed considerably, and by 2010 it was - after the crisis - down to 1 percentage point (66.7 in the US and 65.7 in EU15).

Since no conclusions stand out sharply for these three dimensions of performance - fiscal sustainability, growth and employment - we have to investigate in greater depth the implications of different policies with regard to social spending. I begin by asking what are the alternatives to public provision of transfers and services; I go on to examine the total cost of the welfare state (drawing again on the work of the OECD); and then consider some of the implications of different strategies.

**Alternatives to the welfare state**

Many of the critiques of the welfare state, particularly those emanating from finance ministries, treat social transfers as a problem, and give little weight to the positive functions that they can perform. People have lost sight of the reasons why social insurance and public services were introduced. While one can point to episodes of political expediency, when social security was seen as a means for buying industrial and social peace, there can be little doubt, in my view, that the welfare state came into being to meet the needs of modern employment. The rise of modern industry employment, where workers had a single employment, meant that they needed protection against the loss through unemployment, sickness or industrial injury or the loss as a result of the ending of that employment through retirement. Employment became a (0,1) activity, in contrast to the earlier portfolio of activities of pre-industrial societies. This was the age of the “invention of unemployment” (Salais, Baverez and Reynaud, 1986) and the “invention of retirement” (Hannah, 1986).

In recent years, the welfare state has indeed been put to the test in the recession that has affected many OECD countries. The sharp fall in GDP in 2008-9 is shown in Figure 8 for the euro-zone and for the US. As the study by Jenkins et al
(2012) brings out, the path of household disposable income was much smoother, particularly in the euro-zone. Household disposable income was virtually flat, in real terms, up to the middle of 2011. The experience of the UK was similar - see Atkinson (2011a). A number of factors were responsible, including employment policy and discretionary fiscal interventions. But the welfare state was an important factor (Brandolini, 2012), providing automatic stabilisation that was important at the level of the individual as well as for the macro-economy. Critics may say that this was simply deficit spending, but it should be noted that, in the preceding boom in GDP, household disposable income lagged behind. In the UK (Atkinson, 2011a), real GDP per head rose by 14.3 per cent between 2001 and 2007, but real household spendable income rose on average by less than half that amount (6.9 per cent).

If the welfare state is to be scaled-back, these functions will have to be taken over by alternative mechanisms for smoothing income, both in the short-term and over the life-cycle. On what alternative mechanisms can we rely? This a question that has to be asked in Europe, but the same question applies to emerging economies such as China currently in the stage of transformation. If they do not construct a welfare state, in what ways can their citizens be protected?

The first - and oldest - route is via the family. Clearly in most societies the family provides a degree of protection for its members, and this remains the case, even if to a lesser degree, in modern welfare states. At the same time, there are large differences in the feasibility of relying on such a source, in the light of geographical mobility and demographic change, and in the extent to which family support is underwritten by cultural and social norms.

Where the family cannot provide, a second route is through private provision. Individuals save for their retirement, and take out private insurance against contingencies such as unemployment, sickness, injury, and death of a partner. The effectiveness of such an alternative mechanism assumes the presence of counter-parties: that there exist fully functioning competitive markets for long-term saving and for risk-bearing. This may not be the case. The issues regarding savings are discussed more fully in the next section. In the case of unemployment and sickness, the problems of moral hazard and incomplete information may well mean that market provision falls short.

The third route is via employers and/or trade unions. Historically, both have played an important role. Employers began to provide pensions for long-serving employees. Trade unions have provided unemployment insurance. It is natural that these should accompany the (0,1) modern employment relationship, but their reach is equally limited. In particular, in a dualistic labour market, social protection may not cover those in the less favoured sector (Atkinson, 1999) - those most in need of protection.
Implications of different approaches

In the longer-term, the arguments for a different public/private balance may turn on the impacts on growth and employment. In Atkinson (1999), I have argued that these arguments are far from straightforward. It is not evident that a move from state to private provision will guarantee an improvement in economic performance. For instance, it is possible that a switch to private pension provision will raise the national savings rate, but this may not be translated into an increase in the rate of capital investment. If private pension provision is accompanied by a greater dominance of pension funds in the capital market, and the managers of these funds are largely motivated by short-term gains, then firms may be forced to pursue short-term profits at the expense of long-run growth and employment. In the labour market, attention has been focused on the disincentive effects of unemployment benefit, but the existence of social insurance may act to encourage people to enter the formal labour market. While state pension schemes may provide incentives for early retirement, the same incentives may be built into employer pension plans. In my view, the issue is not so much public versus private as an issue of the proper design of transfer programmes. The shortcomings that have been - correctly - identified in many state transfer schemes could be remedied by reform of government policy. Indeed, the government has greater control over the operation of state transfers than if they were transferred to the private sector.

The most pressing immediate reason, however, for considering alternative mechanisms is to help restore balance in the public budget. What are the budgetary implications of private provision? Here we have to begin by refining the calculations shown in Figure 5. These give the gross cost of social spending but the impact on the public finances depends also on the induced changes in tax revenue. In a number of countries, social transfers are subject to income tax, so the net cost is reduced. The expenditure out of transfers gives rise to indirect tax revenue. Thus, in Sweden, the country with the highest gross cost in Figure 5, the payment of 34.6 per cent of GDP generates 4.7 per cent of GDP in direct tax revenue on cash benefits and 2.7 per cent of indirect tax revenue.

What happens if private provision replaces public provision? To the extent that the benefits are the same, and are treated in the same way for tax purposes, there will be the same direct and indirect tax return to the government. In addition, where private outlays such as those on pensions, or on insurance, are tax deductible, then the cost to the individual taxpayer is reduced by a factor equal to (1-marginal rate of tax) and the tax revenue is reduced by this amount. For a person paying a marginal rate of 50 per cent, the government is in effect bearing half of the cost. Information about such “tax expenditures” is limited, but that for pensions “was in excess of 1% of GDP in Australia, Canada, Ireland, the UK and the
US” (Adema and Ladaique, 2009, page 43) and is also reported to be significant for the Netherlands.

The net effect on the government outlays, taking account of taxes paid and of tax expenditures, as estimated by the OECD, is shown in Figure 9. (For some countries, the net effect is greater than the gross cost, since the tax expenditures exceed the taxes paid.) The differences across countries remain, but are less marked. Twelve of the twenty five countries are now in the range from 20 to 25 per cent of GDP, which is not far above the 18.5 per cent of the US. We may also note that total social spending - public + private - is quite similar across OECD countries: it was “within a few percentage points of each other in Austria, Canada, Denmark, Finland, Italy, the Netherlands, Portugal and the United States” (Adema and Ladaique, 2009, page 3).

Finally, there is the obvious point that a given total of social spending may have quite different distributional consequences, depending on whether it is publicly or privately funded. In the following sections, both equity and efficiency will be considered.
Source: Adema and Ladaique, 2009, Table 5.5 (the data relate to 2005). Note: AAA denotes triple A graded government bonds by Standard and Poor’s, April 2012; those in boxes are graded triple A by the Dagong agency.

Source: OECD database downloaded 14 April 2012, and Figure 4. Note: Each point corresponds to one of the 26 countries listed in Figure 5.
Figure 7 Employment rate (aged 15-64) and public social spending

Source: OECD database downloaded 14 April 2012, and Figure 4. Note: Each point corresponds to one of the 26 countries listed in Figure 5.

Figure 8 Smoothing of GDP fluctuations in Europe and US (2007Q1 = 100)

Source: Brandolini (2012) from Jenkins et al (2012), Figure 2.3.
Source: see Figure 5. Note the Budget cost estimates include tax costs of private pensions, but this is missing for Denmark, Korea and New Zealand (also missing for the Netherlands, where the amount is believed to be significant, so this country is omitted from the chart).
4. The design of taxation and public spending

The design of taxation is often presented as a balance between efficiency and equity, or, in more pragmatic terms, between growth of national income and the reduction of income inequality. This implies that there is an inevitable trade-off. However, this depends on the starting point. If taxes are introduced into a world where the economy is functioning in a fully efficient manner, then there is indeed an inevitable efficiency cost to almost all kinds of taxation (the only exception being a lump sum tax). Redistribution implies moving inside the first-best possibility frontier.

In reality, the actual starting point is different in two important ways. First, we are not starting from a no-government situation. There are many taxes and spending programmes in force, and the state has, particularly in China, a major influence on the economy. Starting from where we are, it may be possible to define tax reforms, possibly coupled with reforms in other policies, which lead both to greater efficiency and to greater equity. Secondly, leaving aside the government, there may be inefficiencies in the current situation, where corrective fiscal measures may lead to greater efficiency. A tax on certain foods, for example, may both raise revenue and reduce obesity. There is the possibility of a double dividend: a gain in efficiency and a gain in equity.

These considerations imply a different emphasis from that in the optimal tax literature: (1) the adoption of a tax reform approach, seeking improvements from the current situation, and (2) setting the analysis in a context where the no-tax situation would fall short of being fully efficient, rather than assuming an Arrow-Debreu economy of perfect competition, fully clearing markets, and full information. I begin with the second, considering two such departures: inter-temporal allocation with incomplete markets, and market power.

Policy design in imperfect economies

In public economics, it has become standard to apply the analysis of a static economy without modification to a dynamic economy, treating consumption at different dates as literally different goods: the purchase of an hour of housework services next year is a different good from the purchase of an hour today. This literal translation however ignores the limited nature of the transactions that can be carried out today regarding future consumption and poses serious questions about our understanding of intertemporal decision-making. While people can save for the future, they can typically make very few advance purchases; there are very limited future markets. A person may wish, particularly in a society with small families, to purchase today access to personal care in the future (the hour of housework). Such a transaction typically cannot be undertaken. Nor is it enough to
save, since the future price of that care is difficult to predict. It depends on future wage rates, so that even price-indexed bonds are not sufficient. The dynamic economy cannot therefore be treated simply as an extension of a static market place. A much better approximation in my view is to see the economy as a sequence of market transactions linked by savings decisions, as in the Samuelson-Diamond overlapping generations model. There is no presumption, in the absence of a complete set of markets for future purchases (and for risk-bearing), that the no-tax allocation will be efficient.

For this reason, I would be cautious in attaching weight to the far-reaching conclusions that have been drawn regarding the taxation of savings: that there should be no taxation of capital income. One line of thinking attributes this finding to a theorem of Atkinson and Stiglitz (1976), where we made such a literal translation of the Arrow-Debreu model to an intertemporal context. (I should point out that we did not advocate zero taxation of capital income; we simply used the theorem to indicate the circumstances in which a tax or a subsidy would apply.) The objections described above apply, together with others discussed extensively by Banks and Diamond (2010). As they discuss, the reasons for the inapplicability of the theorem carry over to an overlapping generations model of the Samuelson-Diamond type, and in this context Atkinson and Sandmo concluded that “there is no strong reason to suppose that the exemption of saving is desirable on efficiency grounds” (1980, page 546). Such models do not allow for generations to be linked via bequests. A second line of thinking is based on models that take the linking to the limit of assuming that there is a single dynastic decision-maker for each family who is concerned with the consumption of all future generations, wealth being passed on from generation to generation. In such an infinite horizon model, Chamley (1986) and Judd (1985) argue that in the long-run capital income should not be taxed. The limitations of this result are considered by Banks and Diamond, who conclude that it “is not a good basis for policy” (2010, page 580). While I am persuaded that it is important to consider wealth being passed on (in the UK around half the population die leaving a significant amount of wealth), this does not mean that the interests of different generations are fully aligned and that we can limit our attention to a single dynastic welfare function. The design of taxation has to take explicit account of the impact on different generations.

The second departures concerns market power. Whereas the standard optimal tax analysis is centred on a world of perfect competition and clearing markets, we should start by recognising the use of market power and the existence of rents earned because of restrictions on competition or on entry. Of course, there are other government policies directed at limiting the abuse of market power: restrictions on mergers and acquisitions, and competition policy. However, these are only partially successful. We remain in a second-best world. Just to take one example, in the UK the top 4 supermarkets have 87 per cent of the retail grocery market.
The existence of market power has important implications for the design of fiscal policy, as may be illustrated by reference to indirect taxation. In the analysis of indirect taxes, it is typically assumed that these taxes are fully reflected in the prices paid by purchasers. This assumption is routinely made in statistical analyses of the burden of taxation, such as those described in the next section. The assumption underlies the case that has been made for preferring value-added taxes over sales taxes, since the former avoid the cumulation of price increases (the “cascade” effect, where upstream taxes are cumulated as a good moves through different production stages). But the taxes may not be full passed on, particularly where there is imperfect competition. The study of pricing under monopolistic competition has shown that there may be under- or over-shifting. There are circumstances in which the profits of the monopolistically competitive firms rise as a result of the tax, so that we have to consider the impact on profits and rents as well as on consumers. What is more, the tax may be shifted backwards onto suppliers. The UK supermarkets not only have monopoly power vis à vis their customers but also monopsony power vis à vis their suppliers.

Finally, we should note that the classical tax design literature has typically assumed that efficiency and equity are assessed in terms of individual welfare. The efficiency cost is the distortion of consumer choice. But societies may decide - for broader reasons - to adopt other priorities. In China, as I understand it, the government attaches weight to the policy objective of increasing domestic consumption. This means that the government can take a different view about the desirability of saving than that implied by the decisions of individual households. In the European Union, there is an explicit objective, as part of the Europe 2020 agenda, of increasing the employment rate. (The target for 2020 is that 75% of the 20-64 year-olds in the EU should be employed.) This means that the government is not aiming for a level playing field, where individual work decisions are not influenced at the margin by marginal rates of taxation; rather the government is seeking to tilt the playing-field, so that people are encouraged to enter employment and to work longer. In such a context, as noted earlier, there may be a role for state social security schemes that encourage people to enter the formal labour force.

Policy reform perspective

In his recent book, The idea of justice, Sen says that “in contrast with most modern theories of justice, which concentrate on the ‘just society’, this book is an attempt to investigate realization-based comparisons that focus on the advancement or retreat of justice” (2009, page 8). The aim is progressive reform rather than transcendental optimality. It is true that public economics has devoted much attention to optimal taxation and public spending, but many of the exponents of the optimal tax approach have seen the design of policy as one of
adjustment and of seeking improvements, not simply seeking to characterize an optimum. This was made explicit in the theory of tax reform. The article “On the theory of tax reform” by Feldstein begins with a quotation from Woodrow Wilson’s first Inaugural Address as President in 1913: “we shall deal with our economic system as it is and as it may be modified, not as might be if we had a clean sheet of paper to write upon; and step by step we shall make it what it should be” (Feldstein, 1976, page 77). The tax reform approach has been applied in empirical studies such that by Ahmad and Stern (1991) of tax reform in developing countries. The case for this approach is well described by the latter: “the analysis places the status quo in a central position and asks, ‘Given where we are, in what direction should we move?’ … the type of language involved is more easily understood by the policy-maker than the notion of a large move towards some optimum which may emerge from a model of which he is suspicious” (1991, page 61).

The tax reform approach means that we may agree about the direction of policy change, while disagreeing about the final destination. In this way, a broader coalition of support may be built. To give a concrete example, many people may agree that a top personal income tax rate of 40 per cent is too low, and favour 50 per cent, but not necessarily accept that the top rate should be the 83 per cent that emerges from the “preferred estimates” of elasticities of Piketty, Saez and Stantcheva (2011, pages 4-5). Or, many people may agree with the principle of a cumulative tax on inherited wealth (and lifetime gifts) without going as far as John Stuart Mill who wanted to prohibit collateral inheritance and “would lay a heavy graduated succession duty on all inheritances exceeding [a] moderate amount” (Mill, 1871, quoted in Ekelund and Walker, 1996, page 578).

The aim of such a policy reform approach is to identify directions of improvement, and one of the key lessons is that there are many such directions. Starting from where we are now, there may be several reform packages that score better than the status quo in terms of efficiency and equity. Such improvements are not necessarily ones that make everyone better off; there may be losers as well as gainers. But overall income rises and inequality decreases. The message is a positive one. There are options for policy improvement. Austerity programmes, for example, are often presented as though there were no alternatives, but in reality there are choices to be made between spending cuts and tax increases, and between cutting current government spending and investment in infrastructure. A reasoned case has to be made for the specific austerity measures selected.

A policy reform approach does not mean that we should neglect the ultimate destination that we are seeking. The very fact that there may be a choice between alternative reforms means that we have to lift our eyes towards the horizon. The differences that we observe between, say, the US and the EU, reflect the cumulation of a sequence of policy choices but also the sense of where these societies are headed. In the case of the EU, such a sense has been made explicit in
the Europe 2020 agenda, aiming at high levels of employment, productivity, and social cohesion.

The choice between different tax and spending policies to achieve such goals depends on the impact of these policies, which brings me to the question of incidence.

*The incidence of taxes and public spending*

One of the features that distinguish the approach of an economist to the public finances from the approach of lawyers or accountants is the concern of economists with the *incidence* of taxes and spending. Who actually pays and who benefits? Costs and benefits may be borne by others. When old age pensions were introduced in South Africa, it was found that the grandchildren of recipients had better health. When top personal income tax rates rise, football clubs pay their players more, and banks raise the gross pay of their executives. Incidence is important both for assessing the distributional consequences and for considering the impact on the economy. If a tax can be shifted onto someone else, through charging more, or paying less, then the burden is borne differently and the tax may act more or less as a disincentive. The discussion below is cast in terms of taxes, but similar questions arise with government spending, as illustrated by the example of pensions for the elderly.

Our understanding of tax incidence can be no better than our understanding of the operation of the economy. All analysis of incidence has to be based on a view as to how firms and households react to the tax, and as to the functioning of the markets for goods, services, labour and capital. This means that the conclusions reached with regard to incidence may vary with the type of economy. They may well be very different in a small open economy from one in a large economy with little foreign trade. It means that the conclusions may change over time as the economy develops and as the world changes. There can be little doubt for example that globalisation has major implications for tax incidence. Moreover, views about incidence may change as we change our theoretical perspective.

The issues may be illustrated by the case of the payroll tax, a tax on the employment of labour. Payroll taxes have come to play an increasingly important role in many advanced economies, but raise serious questions of incidence. Levied on the employer, they raise the costs of production. The rise in costs may be absorbed in reduced profits, in which case the burden of the tax is borne by the suppliers of capital. But they may also lead to higher prices. In this case, the tax operates like an indirect tax, where the tax rate varies with the degree of labour-intensity. (Labour-intensity has to be calculated allowing for the input-output relations: the tax will raise the price of intermediate goods.) The incidence in this
case would be quite different. We have also to consider the consequences for the
demand for labour (and capital). The firm can offset, at least in part, the rise in
costs by switching to less labour-intensive methods of production. A rise in the
payroll tax may be the signal for firms to invest in new labour-saving machinery. A
reduced labour-capital ratio, combined with a rise in the relative price of labour-
intensive products, means that the demand for labour falls. There is downward
pressure on wages. Part of the tax may therefore be shifted backwards onto
labour.

In fact, the payroll tax may be levied on workers rather than employers (or,
as is commonly the case, divided between them). Does this make any difference?
The standard answer by economists is that it makes no difference whether the tax
is formally levied on the worker or the employer. All that matters is the “wedge”
between the amount paid by the employer and the amount received by the
worker. Many policy-makers however believe that the impact can be different.
And statistical investigations of tax incidence (see Section 5 below) in the UK
subtract the employee’s social security tax from household income but do not
subtract the employer’s share of the tax.

Recognition that incidence may differ according to the formal location of
the tax has come in the “behavioural turn” in public economics, which allows for
aspects of human behaviour that are missing from the standard textbook model
(see for example, Diamond and Vartiainen, 2007). A good example is provided by
tax “salience”. A number of studies in the US have shown that consumers react
less to taxes that are concealed and react more to taxes that are drawn explicitly
to their attention. For instance, drivers’ behaviour has been found to be more
responsive to toll charges when they are paying in cash than when they are using
an automatic electronic deduction system (Finkelstein, 2009). Chetty, Looney and
Kroft (2009) found that increases in excise taxes (which are included in posted
prices) reduce alcohol consumption significantly more than increases in sales taxes
(which are added at the checkout). The latter are less salient, and have less
impact on behaviour, affecting the allocation of the burden. In the case of the
payroll tax, behaviour may therefore be affected by the extent to which the tax is
explicit. The incidence of the tax may be different in countries where the salary is
set in gross terms from that in countries where workers are paid “net”: i.e.
salaries are quoted after all payroll deductions.

This illustrates the point that our view about incidence may change with
changing theoretical perspectives. It also depends on the specific circumstances
and nature of the economy and society. A highly pertinent feature is the extent of
state ownership. As was noted above, a wide definition of the public sector
includes the state supply of goods and services, and the “control”, as opposed to
the “beneficial ownership”, dimension of the public enterprise/production sector
is relevant to the incidence of fiscal policy. Where the state enterprises have
significant market power, they can influence the degree of forward shifting by private enterprises. By acting as price leaders, and absorbing some of the indirect tax increase, they can put pressure on private competitors. In this way, a mixed economy with a significant state element has additional flexibility to deal both with distributional issues and greater ability to offset efficiency costs of taxation.

One aspect of particular concern is the structure of prices and access. Reference was made earlier to the shifting forward of taxes, but taxes may also change the pattern of prices. Where households buy differing quantities (and there is no ready re-sale), as with the supply of energy or water or phones, the price typically varies with the quantity: for example, a fixed charge, coupled with a price per unit. The fixed charge may be a barrier to low income households, so that they are excluded from the market. The price may also vary geographically. Indeed, for remote rural areas, the price may be infinite, where suppliers are unwilling to service the area. In all these cases, control over state enterprises may allow influence to be brought to bear to ensure the continuation of an accessible tariff structure and to underwrite an obligation to supply. (The same applies, of course, to other government objectives, such as the pursuit of environmental sustainability.)

The existence of a sizeable state enterprise sector means that their profits and losses are significant for the public budget. Here we return to the beneficial ownership dimension, and the use to which these profits are put. In the past, I understand, profits have been largely re-invested, but alternative uses should clearly be considered. In this context, we have to take account of the changing macro-economic situation, and of globalisation, both of which are ending to reduce the tax base. If the labour share in national income is falling, reducing this element of the tax base, and if tax competition is limiting the possibilities for capital taxation, then the state ownership of income-generating assets provides a safety valve.

The incidence of taxes and spending is relevant to the empirical analysis of inequality and redistribution, which is the subject of the next section.

5. Inequality and redistribution

As the OECD reported in Growing unequal?, income inequality has been on the increase in most of its member countries since the mid-1970s (OECD, 2008). Its 2011 report, Divided we stand, has a special focus on emerging economies, where it finds that these economies all have income inequality levels above the average for OECD countries, and that, while inequality is recorded as falling, comparing the early 1990s with the late 2000s, in Brazil and Indonesia, there were recorded rises in China, India, Russia and South Africa.
The subtitle of the 2011 OECD report is *Why inequality keeps rising*. As their analysis brings out, an important role is played by increased earnings dispersion and employment trends. Over time, the distribution of income is going to be influenced by human capital investment and the match with the demand for skill in a globalising market needs. But other factors also play a role, such as the patterns of family formation and the changing extent of redistribution through the public budget. In the past, we have seen how these “other factors” can offset what is happening in the labour market. Rising earning dispersion is not a new phenomenon in the US: the earnings distribution began to widen at the beginning of the 1950s (Atkinson, 2008). The widening gap in individual earnings did not however at that time translate into increased income inequality among families: the Gini coefficient for overall income inequality only began to rise at the end of the 1970s. (The Gini coefficient is a widely used measure of inequality, defined as half the relative mean difference, where the relative mean difference is the expected absolute difference between the incomes of any two people selected at random, divided by the mean income.) Until that time, the increase in redistributive social transfers, and the growth of two-earner families, offset the effect of the widening earnings gap.

Today, the reverse is taking place. According to the OECD report, the government budget has become less effective: “from the mid-1990s to 2005, the reduced redistributive capacity of tax-benefit systems was sometimes the main source of widening household-income gaps” (2011, page 18). In the same way, the OECD conclude, in their analysis of emerging economies, that “the benefit and tax systems in the [emerging economies] play a lesser role than in the OECD countries in easing market-driven inequality” (2011, page 49).

*Reduced effectiveness of government budget?*

The effectiveness of the government budget is typically assessed on the basis of evidence from household surveys. For each household in the survey, a calculation is made of the original income received from wages, self-employment, and from rents, dividends and interest. The term “original income” is used here, although some writers refer to “market income”. The latter term is avoided here, since it may give the impression that the income is that which would be generated in a pure market economy, whereas all forms of labour and capital income may be influenced by government intervention (see Wu Jinglian, 2011, for discussion of the Chinese case). For the same reason, the term “original” should not be equated with a situation in the absence of any government.

To original income are added state benefits in cash, including state pensions and other transfers, to give total household gross income. From gross income are deducted direct taxes and employee social security contributions to give...
disposable income. Further adjustments may be made to deduct indirect taxes paid, to give post-tax income, and to add non-cash benefits (such as education or health), to give final income. This pattern is summarised in Figure 10. This diagram is based on that used in the UK; a similar breakdown is given by Lustig (2011) in the study she co-ordinated for Latin America, with the difference that the first and second steps are reversed, with direct taxes first being deducted and then cash transfers added. The UK pattern reflects the fact that most cash transfers, apart from child benefit, are taxed under income tax. (This underlines the importance of the difference between gross and net costs considered in Section 3).

The calculations above are purely arithmetic. To interpret the resulting numbers, it is necessary to make assumptions about incidence, as just discussed in Section 4. Explicitly, or implicitly, it is assumed that “original income” is the same as “income in the absence of taxes and transfers”. In the case of a payroll tax, or a personal income tax, it is assumed that the burden is fully borne by the income recipient. There is no shifting. (It should be noted that the UK calculations do not take account of the employers’ payroll tax, so they treat the employee and employer taxes differently.) Such an assumption may be a reasonable first approximation, but it cannot be assumed to hold in all cases, particularly at the top of the distribution. In the same way, the typical empirical study assumes that indirect taxes are fully shifted into consumer prices. As was observed in the previous section, this may not be the case, particularly where firms have market power. (And any consequent change in profit income would feed back into original income.)

It is equally assumed that the payment of social transfers has no impact on market behaviour and original income. In reality, the payment of an old age pension, for example, may mean that a person can go on living on their own, rather than have to move to live with their child. Such a reaction could mean, if the pension were their only source of income, that the original income distribution contained more households with zero income (and hence was more unequal). To the extent that unemployment benefits allow workers to search longer for a suitable job, the existence of such a transfer may render the distribution of original income more unequal at the same time that the transfer offsets the effect on disposable income. A more generous welfare state may well have a more unequal distribution of original income. These qualifications need to be borne in mind when considering the results of such an empirical analysis of the redistributive impact in the government budget. The calculations may measure correctly neither the current position nor changes as a result of policy reforms.

The qualifications outlined above should be borne in mind in considering the results of any statistical analysis, such as that made by the OECD (2011), results from which are summarised in Figure 11. It should be noted that these results are partial in that they relate only to those living in “working age” households, not to
the total population, and that the redistributive measures are limited to direct
taxes and cash transfers. Figure 11 shows the extent to which these elements of
the government budget offset the inequality of original income, measured by the
Gini coefficient, contrasting the situation in the mid-1990s with that in the mid-
2000s (source: OECD, 2011, Table 7.3). In the case of Finland, for example, the
Gini coefficient for original income in 1995 was 37 per cent, but this was reduced
to 21 per cent for disposable income by the action of direct taxes and social
transfers. The reduction of 16 percentage points represented 43 per cent of the
original income Gini coefficient, and this is shown by the bar in Figure 11. In 2004,
the inequality of original income had increased by 2 percentage points, but that
for disposable income by more (3 percentage points), so that the amount of
redistribution went down to 15 percentage points, or 38 per cent of the original
Gini coefficient. Of the 11 OECD countries shown, 7 saw a reduction in the extent
of redistribution achieved by the government budget. According to the OECD, “the
main reason for less effective redistribution over the past 15 years was on the
benefit side: levels were cut and eligibility rules tightened to contain expenditures
for social protection” (2011, page 18).

These findings suggest that, while governments in OECD economies
intervene extensively to alter the secondary distribution of income by taxation and
transfers, rendering it far less unequal than the primary distribution, a majority
are doing so less today than two decades ago. This could be interpreted in two
different ways: either that countries are now, in the face of globalisation, more
constrained as to their scope for redistribution, or that they have chosen a less
redistributive option from the menu in order to promote growth and employment.
However, as we have seen in Section 3, it is not evident that a scaling back of the
welfare state is required. There are a number of countries with high social
spending that still enjoy Triple-A rating on the bond markets. To the extent that
governments could have chosen to redesign social benefits, rather than scale them
back, it was a matter of choice. This is underlined by the fact that, in 4 of the 11
countries in Figure 11, the degree of redistribution increased, or was unchanged.
Moreover, as we have seen earlier, eurozone welfare states have played a
significant role in smoothing the fall in household income during the recent
recession.
Figure 10 Different stages in calculating redistributive impact of budget

Figure 11 Extent to which government budget reduces original income inequality in OECD countries: mid-1990s and mid-2000s compared

Source: OECD, 2011, Table 7.3.
Quantitative evidence on household incomes in China, the UK and Brazil

Calculations similar to those described above for OECD countries have been made for Chinese households, and in this section I compare them with those made for the UK for 2009/10 and for Brazil for 2008/9. I am grateful to Li Shi for putting me in touch with the work of Wang Yake on the redistribution of income in China in 2002 and 2007. I do not have details of the underlying Chinese household data, which is from the China Household Income Panel, but the calculations appear closely similar to those made in the UK, which are based on the Living Costs and Food Survey (formerly the Family Expenditure Survey). Studies of the incidence of taxes and spending have a long history in the UK, with the annual series dating back to the 1960s. Over the years, considerable efforts have been made to reduce measurement error, including in the case of income asking respondents to consult their payslips where possible. Original income consists of earnings plus property income. Benefits include social relief and pension. Gross income is original income plus benefits. Disposable income is reached by subtracting income taxes and social security contributions in urban areas, and all sorts of fees in rural areas. In view of the apparent similarity, I take as a basis for comparison the UK results for 2009/10 given by the Office for National Statistics (Barnard, Howell and Smith, 2011), where I have used the results for households ranked by disposable income (Table 24). It should be noted that the underlying household survey in the UK had a response rate of only 50 per cent. The data for Brazil are taken from the study coordinated by Lustig (2011).

The data for China cover the first part of redistribution: the addition of benefits and the subtraction of taxes and fees. I therefore compare original and disposable income. The Gini coefficient for original income in China and the UK is similar: 50.1 per cent in China in 2007 and 52 per cent in the UK. The disposable income Gini is however much lower in the UK: 33 per cent against 45.3 per cent in China. Government intervention reduces the Gini by 19 percentage points, or 37 per cent of the original Gini, compared with a reduction of some 10 per cent in China. The difference largely arises from the benefit side. Figure 12 shows benefits as a percentage of original income by decile group (in both countries the decile groups are those ranked by disposable income). Benefits are, by this standard, much more progressive in the UK. For Brazil, the Gini for original income was rather higher, at 57.2 per cent, and the reduction achieved in moving to disposable income is less than 5 percentage points.

The full distributions are compared in Table 1, which shows the cumulative decile shares in the 3 countries for original and disposable incomes. The shaded entries for the UK and Brazil are those where the cumulative shares are larger than the corresponding shares in China. This brings out the importance of not just relying on summary statistics such as the Gini coefficient. The Gini coefficients for
original income are similar for China and the UK, but this conceals the fact that the original income distribution in China is estimated to be less unequal than in the UK right up to the top decile. The income share of the bottom 50 per cent is 21 per cent in China but only 14 per cent in the UK (similar to that in Brazil). Such a pattern is consistent with the UK welfare state making it possible for people to live on low or no earnings. Turning to the distribution of disposable income, we see that China lies between Brazil and the UK. The share of the bottom 50 per cent is 20 per cent, compared with 24 per cent in the UK and 16 per cent in Brazil.

How are the distributions changing in China? Table 2 shows the estimates of Wang Yake for 2002 and 2007. These figures suggest that both the original and the disposable income distributions have become more unequal, with the share of the top 10 per cent in disposable income rising from 28 per cent to 34 per cent. In their study of the same period, 2002-2007, Li, Luo and Siccular found that, while China had made major progress in reducing poverty, there had been an increase in income inequality: the Gini coefficient for income adjusted for purchasing power differences between urban and rural areas and between provinces rose is estimated to have risen from 39.5 to 43.3 per cent (2011, Table 2.3). Finally, I consider in Table 3 the distribution among urban households in China and make the comparison again with the UK - a comparison that is perhaps more meaningful than that with the whole of China. The original income distribution in urban China is less unequal than that in the UK, but the intervention of the government budget in the UK is sufficiently large that the distributions of disposable income are quite close.
Table 1 Comparison of cumulative decile shares in China 2007 and UK and Brazil

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<th>Decile</th>
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Source: see text.

Note: China and UK deciles are ranked by disposable income.

Brazil deciles are ranked by original income.
### Table 2 Comparison of cumulative decile shares in China 2007 and 2007

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Note: Deciles are ranked by disposable income

### Table 3 Comparison of cumulative decile shares in urban China 2007 and the UK

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Note: Deciles are ranked by disposable income

Source: see text.
**Top incomes and taxation in a global economy**

The figures in the previous section showed the proportion of total income accruing to the top 10 per cent - a third in the case of China in 2007, up 5 percentage points from 2002. Increasing interest is however being shown as to the distribution within the top 10 per cent. The top 10 per cent within the top 10 per cent - i.e. the top 1 per cent - have a disproportionate share of this group’s total income. In many countries, the top of the distribution follows broadly the Pareto law: wherever you stand, the people above you have on average a fixed multiple of your income. Moreover, unlike what was believed by Pareto when he articulated the law at the end of the nineteenth century, the multiple is not constant: it is increasing in quite a number of OECD countries. Inequality is increasing at the top.

Evidence on top incomes for different countries is shown in Figure 13, using data for the mid to late 2000s taken from the World Top Incomes Database. (It should be noted that the data for China are drawn from household surveys, whereas the other data are from tax records.) The graph shows the Pareto multiple. (This is a transformation of what is usually called the Pareto coefficient. If the latter is $\alpha$, then the multiple shown in Figure 13 is $\alpha/(\alpha-1)$. ) The multiple for China at 1.48 is considerably lower than in the other countries shown, and about half that in the US. (It is possible that the lower value for China is due to the use of household survey data, rather than tax records, and the relationship between the two types of source needs further exploration.) At the same time, the multiple has increased in China since the 1980s: in 1986 it was 1.22 (Piketty and Qian, 2010). In this respect, it was following the same pattern as in the other countries. To varying degrees, all countries show a rise since 1980 in the Pareto multiple - the upward slope of top incomes.

What is the cause of the rising income gradient? A number of explanations seem worth exploring. These include globalisation, which tends to be associated with the loss of low-paid jobs in OECD countries, but it may be equally important at the top of the earnings scale, with the move to winner-take-all markets, notably in the field of technology. Two decades ago I was using word-processing software written in Manchester; my custom has now (perforce) moved to Seattle. But one element in the rise of top income shares is likely to have been tax policy. From cross-country evidence on top shares, Piketty, Saez and Stantcheva conclude “that there is indeed a strong correlation between the reductions in top tax rates and the increases in top 1% pre-tax income shares from 1975-79 to 2004-08 ... For example, the United States experienced a 35 percentage point reduction in its top income tax rate and a very large ten percentage point increase in its top 1% pre-tax income share. By contrast, France or Germany saw very little change in their top tax rates and their top 1% income shares during the same period” (2011, page 1).
As Piketty, Saez and Stancheva (2011) suggest, the strong reaction of top pre-tax incomes to reduced top tax rates could arise through three different channels: through increased economic activity, or through a greater extraction of rents, or as a result of reduced tax avoidance, so that more income is recorded as taxable. If the first of these were responsible, then we should expect to see increased output; in the other two cases, there would simply be a redistribution of existing output. Since they find no correlation between rates of growth of total output and cuts in top tax rates, and since their estimate of the avoidance element is small, at least in the US, they conclude that the rise in shares is due more to the appropriation of a larger part of the surplus. As a result, the optimal tax rate on top earnings is higher than if the tax reduced economic activity. There may also be reverse causation, with other factors having led to higher top income shares, and these shares have financed political campaigns for less progressive taxes. This seems particularly likely to occur in countries with political systems such that financing from particular interests is a key determinant of electoral success.

The main limitation on the application of more progressive income taxation lies in international tax competition: the threat that high income recipients will re-locate or that businesses employing high earners will shift their operations. This highlights the need for cross-country co-operation, and possibly the institution of an international tax regime for top income recipients (Landau, 2004). Such an international regime would have the added advantage of ensuring greater certainty of taxation for taxpayers, for whom there is often at present a lack of clarity regarding tax residence and the reach of world-wide taxation.
Figure 13 The Inverse Pareto coefficient in mid-late 2000s

Source: World Top Incomes Database.
6. Public spending and living standards

I have discussed economic performance in terms of growth, but in quite a number of countries there is concern that growth measured in terms of gross domestic product (GDP) is not being translated into a comparable rise in living standards. In India, for example, there has been a long-running debate about the difference between the rate of GDP growth and the apparent rate of growth of household incomes. In part, this is a matter of different data sources. As noted by Deaton, “poverty counts and inequality measures are undermined by major discrepancies between national accounts and household surveys in many countries, not only in levels, but also in rates of growth” (2011, page 16). But in part, the difference is real, and reflects, among other things, the fact that GDP includes the provision of public services that are not recognised by households as part of their own resources and from which they may not indeed be benefiting. In this final section, I consider some aspects of the role of public services.

Contribution of public spending to living standards

Public services encompass have both collective and individual dimensions. The former includes, for example, defence, civil administration, and environmental protection; the latter includes, for example, education, health, and personal social services. I am concerned here with the latter - the individually consumed public services. For this class of services, with individual beneficiaries, there is of course the possibility of charging for the service, in which case the situation is parallel to that of privately-marketed services. Here however, I focus on non-marketed services.

In the statistical studies discussed in Section 5, such benefits in kind are typically allocated to households. In the UK estimates for 2009/10, for example, the average annual disposable household income was £29,143 (£1 is approximately US$1.60), to which was added £6,636 benefits in kind, of which £3,923 represented health services and £2,552 education services (Barnard, Howell and Smith, 2011, page 61). As in the case of taxes, consideration has to be given to the incidence of this spending: for example, the possibility that the operation of the National Health Service may have affected the remuneration earned by doctors. But we have also to investigate the basis for the valuation and the method by which the total benefit is allocated to households. The overall valuation affects our evaluation of the overall contribution to living standards, and the allocation to households affects our assessment of the distributional consequences.

The first of these questions has a parallel at the level of national accounts. For many years, the contribution of public services to GDP was measured simply by the amount spent: it was an input-based measure. The 1993 UN System of National
Accounts (SNA) proposed that in volume indicators of GDP countries should move to a valuation based on the output of the public services. This was important given that these services account in many countries for up to 20 to 25 per cent of measured GDP. Following the 1993 SNA, there was a move to the use of output indicators, seeking to measure the contribution of the services to improving outcomes. In the aggregation of these indicators, however, there is a need for weights, and these have continued to be cost-based. Ideally, we would like to use weights that reflect the marginal value to the consumer. Moreover, the weighted indicators provide a measure of change over time, but not of the level of output.

The resolution of this valuation issue may be sought in the conditions determining the level of services provided. If there is an efficient level of provision, then the marginal value to the consumer is equated to the cost of production multiplied by the marginal cost of public funds. Where the marginal cost of $1 of tax revenue exceeds $1, then the provision is less, but equally the valuation is higher.

The attribution to individual households of a given total value of public sector output raises further issues. From the standpoint of the household, the value of public provision may be seen on an ex ante or an ex post basis. The latter values the services actually received, in which case, for example, the benefit would be assigned to households that actually received medical treatment. If medical services are more accessible to urban than to rural households, or to rich rather than to poor households, then this inequality would be captured. Where however the household would, in the absence of public provision, have taken out insurance, then the saving is on the payment of the insurance premium (this would be an ex ante calculation).

**Importance of the quality of public services**

The issues identified above are particularly important where the provision of public services is fragmented and varies geographically. It is also important to consider the service *quality*. Better off households may not only enjoy superior access to services, but also they may receive a higher quality.

The measurement of quality is difficult in all areas of economic activity. National accountants struggle with the allowance to be made for changing quality when constructing price indices. In the case of services, quality is even harder to assess than with manufactures, since it depends on personal interactions. Research on the measurement of government output has investigated different approaches to the evaluation of quality in the fields of health care and education. These approaches have included the finer classification of activities, distinguishing, for example, levels of education and the nature of qualifications obtained. They have
included assessments of the quality of life attained after medical procedures. They have included measures of patient satisfaction.

The assessment of quality involves many judgments, and for this reason there has been in the EU a move away from introducing quality adjustments in the national account measurement of government output. In my view, this is a backward step. Government output should be measured, as far as possible, on the same basis as the measurement of private output, and this should in principle take account of variations in quality. After all, a number of services are supplied by both public and private providers. In many countries, state schools predominate but there are also private schools; in many countries, there are both public and private hospitals.

*Inter-generational harmony*

The distributional analysis to date has concentrated on the distribution between people (or households) with different levels of income. A second important dimension is between people belonging to different generations. This has been referred to in relation to the taxation of savings, but it acquires particular significance when we consider public services.

The inter-generational issue arises in an evident way in that many public services are related to particular stages of the life-cycle. Education is largely experienced by young people, and much of health care is devoted to the early and late stages of life. As has been emphasised, the ultimate incidence may not lie with the recipient. Fees for higher education may be paid by parents; the medical costs of elderly parents may be a burden on their children, either directly or indirectly via reduced bequests. But the choice of the pattern of government spending may have significant impact on the relative welfare of different generations. This certainly applies to the choice between current and capital spending. Public financing of subsidies for travel by the elderly has different long-term consequences from public financing of investment in transport infrastructure. At the end of his term of office, President Eisenhower bemoaned the fact that he had left a national debt but was proud of the fact that he had championed the Interstate Highway System.

In assessing public infrastructure projects, a key element is the social rate of time preference, or the rate at which future consumption benefits are discounted. The UK Treasury Green Book arrives at a rate of 3.5 per cent by adding a “pure” discounting of utility to a term that reflects the expected growth of consumption per head (the elasticity of the marginal valuation of income times the growth rate). (The formula is $\delta + \eta g$, where $\delta$ is the pure discount rate, $\eta$ is the elasticity of marginal valuation and $g$ is the growth rate of consumption per
head.) The fact that expectations regarding growth in OECD countries have been lowered, as it is recognised that consumption per head will have to grow more slowly than GDP to allow for offsetting the costs of climate change and to provide for an ageing population, means that the discount rate should be lowered and hence that more weight should be given to the consumption of future generations.

What about emerging countries that are currently growing rapidly? Application of the discount rate formula suggests that a high discount rate should be applied, tilting the balance against future generations. Old age pensions should have preference over transport infrastructure. At the same time, account needs to be taken of the current and future inequality in consumption. The formula assumes that consumption per head is uniform, whereas many of the rapidly growing countries are characterised by large consumption differences. Extending public infrastructure to poorer regions of the country, at the expense of higher taxes on richer regions, may tilt the balance back to investment.

7. Conclusions

This paper has covered a range of key topics in public economics: tax ratios and the public sector balance sheet, the balance between public and private provision of social welfare, the optimal design of taxation, the incidence of taxes and benefits, and the design of public services and spending. The main conclusions are summarised in terms of bullet points:

- Fiscal issues are of central and increasing importance (Section 1);
- Need to treat fiscal ratios with caution; fiscal statistics are tools for a purpose, not of intrinsic concern (Section 2);
- There is menu of choice regarding the ratio of taxes to GDP, and in any case it is more important to look at the balance sheet of the state (Section 2);
- We should take a broad view of the state, looking at whole-of-government accounts and considering all aspects of government intervention in a unified way (Section 2);
- The view that the welfare state is a barrier to growth and employment does not find evident support in cross-country comparisons of OECD countries, as is underlined by the fact that employment rates in the US and the EU are now similar (Section 3);
- Recent economic events show that it is quite possible for countries to have high social spending and a Triple-A rating, and that the European welfare state played a significant role in smoothing household incomes during the recession (Section 3);
- If the welfare state were absent, then its functions would have to be taken over by alternative mechanisms - family, private provision or employers -
and these have costs and cause disincentives; the key issue is the design of transfers, not the private/public balance (Section 3);

- Rather than trading-off equity and efficiency, tax and spending reforms may allow progress on both (Section 4);
- Simple rules - like “not tax capital income” - are unlikely to be helpful; it is necessary to examine the specific context (Section 4);
- A policy reform perspective allows to identify directions of improvement, and may allow coalitions of support to be built, but it needs to be accompanied by a view of the longer-term objectives (Section 4);
- The incidence of taxes and benefits is not always evident, and depends on the specific circumstances of the economy, such as the extent of state ownership (Section 4);
- Governments in OECD countries intervene extensively to alter the secondary distribution of income, but such redistribution has - to some extent - become less effective over the past 15 years (Section 5);
- The evidence available to me suggests that the government budget is less redistributive in China than in the UK (the same applies if we consider only urban households in China) but that it is more redistributive than in Brazil; the main difference from the UK lies in the benefit side of the account (section 5);
- Incomes at the top have, in many countries, been racing away over the past 30 years; this is probably related to globalisation, but also to the fall in top income tax rates (Section 5);
- Public services play a key role in influencing the living standards of households and we need to devise better measures of the value and distribution of these services, playing attention to the quality of service provision (Section 6);
- A key issue in determining the pattern of public spending, and the balance between current spending and infrastructure investment, is fairness between generations, which needs to be combined with distributional justice at a point in time (Section 6).
References


Wu Jinglian, 2011, “Reducing income disparity does not rely solely on redistribution”.