

**Denmark: Selected Issues—The Danish Fiscal Framework—Looking Back and Ahead**

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DENMARK

**Selected Issues**

**The Danish Fiscal Framework—Looking Back and Ahead**

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Approved by the European I Department

April 19, 2002

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## I. SUMMARY AND CONCLUSIONS

1. **This paper examines Denmark's fiscal framework.** It evaluates its sufficiency with respect to accommodating medium-to-long-term demographic spending increases and future challenges facing the tax system. Furthermore, it reviews the framework's transparency, consistency and enforceability, taking into account local government responsibilities. The main conclusions are as follows:

(a) Denmark has already made commendable progress with public finance consolidation changing relatively large budget deficits to solid surpluses and almost halving the debt-to-GDP ratio since 1993.

(b) Progress to date has reflected both cyclical factors and one-time structural reductions in transfers. Denmark has had less success in controlling public consumption growth and slippages have occurred, particularly at the local government level.

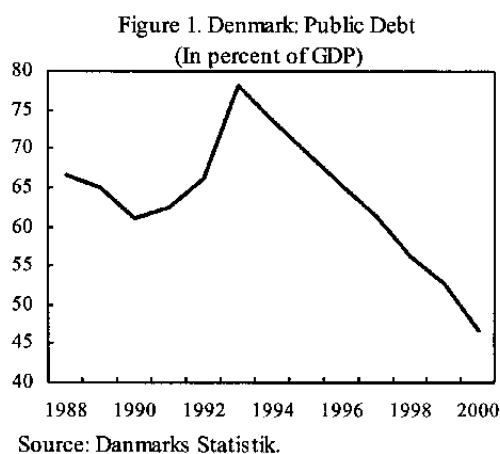
(c) The fiscal framework is transparent and appears to enjoy wide public acceptance. Clear quantitative targets for the fiscal balance and the public debt ratio have helped improve transparency. The requirement to meet the surplus target over the cycle also reduces potential pro-cyclical tendencies in fiscal policy.

(d) Elevating the status of the intermediate target for real public consumption growth would help to remove spending bias in the implementation of the framework—especially as economic growth conditions and further reduction in unemployment are likely to be less friendly to sustaining surpluses in the future. Controlling overall public expenditure growth and reducing the upward tax bias will require better control over, or incentives for, local government tax and spending power.

(e) Denmark is well ahead in preparing for the fiscal strains from the ageing of the population, but continued success will depend heavily on successful structural reforms and better expenditure control. This is all the more so because taxes are less likely to be an instrument that is available (or desirable) to meet unexpected strains on public spending in the medium to long term. A more stringent expenditure growth target for the remainder of this decade could provide useful insurance against future risks to long-term fiscal sustainability. So could additional measures to ensure later retirement and sufficient labor supply incentives. This could among other things necessitate a further tightening of eligibility and disincentives for early retirement and a lessening of labor supply disincentives inherent in the benefit system.

## II. FISCAL TRENDS IN THE 1990S

2. **Since 1993, Denmark has dramatically reduced its public debt ratio.** Continuing the trend of preceding decades, the gross debt-to-GDP ratio increased significantly in the early 1990s and reached close to 80 percent in 1993 (Figure 1). This gave rise to concerns about the sustainability of public finances. In the years that followed, the debt-to-GDP ratio fell continuously and in 2000 was around 47 percent. The Danish debt ratio fell more rapidly than in most other EU countries, and its level is now at the low end among member countries.

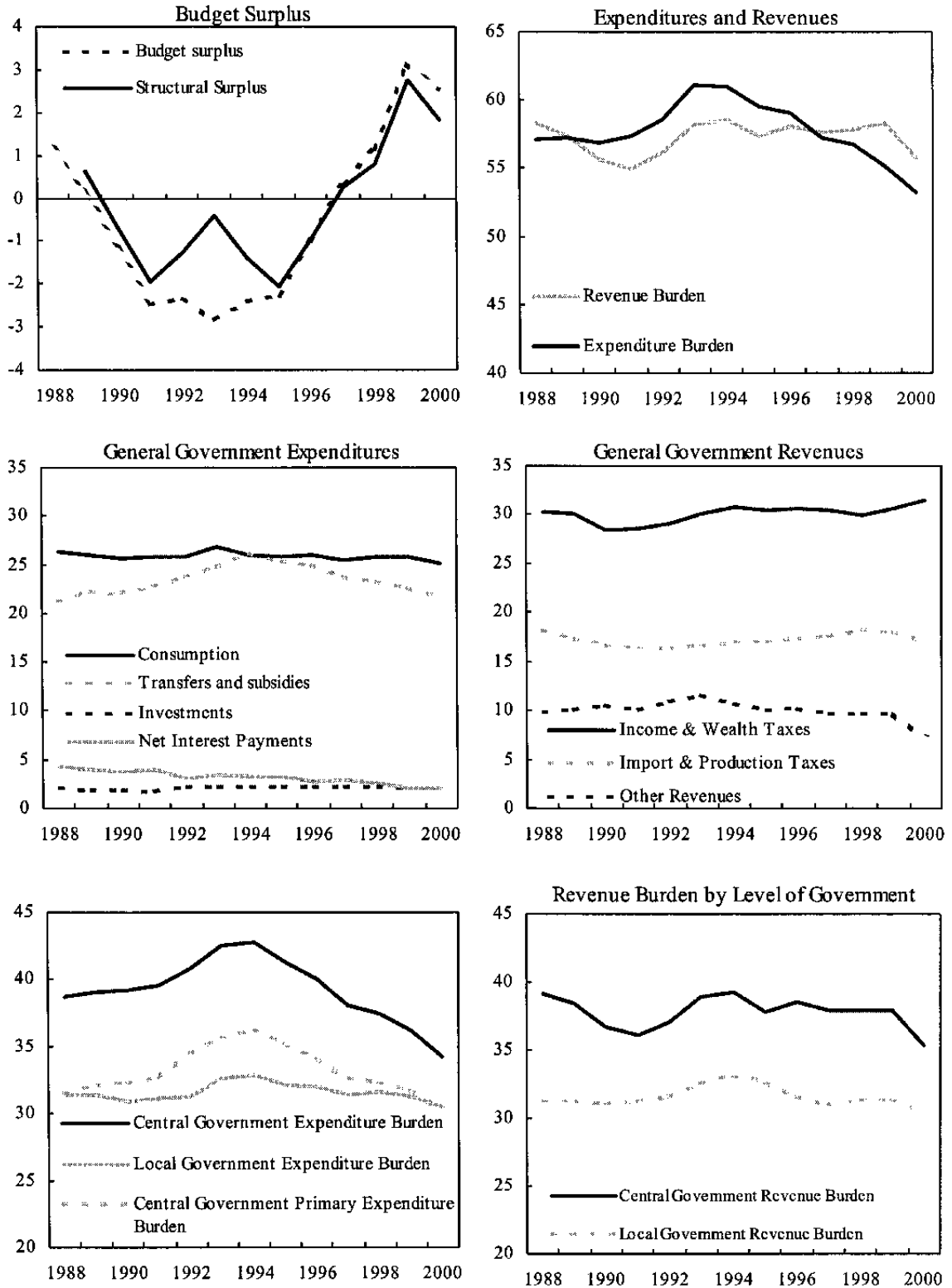


3. **The reduction in the debt ratio has reflected an impressive improvement in the budget balance.** The budget balance flipped from a deficit of 3 percent in 1993 to a surplus of around 2.5 percent in 2000, one of the highest among EU countries (Figure 2). Around half of the improvement has been structural, bearing witness to a relatively strong underlying consolidation of public finances, with the structural budget balance improving from a deficit of around 2 percent of GDP to a surplus of slightly below 2 percent in 2000. The rest of the improvement has been due to cyclical factors—the elimination of a sizable output gap and the associated cyclical fall in unemployment.

4. **Consolidation has largely been achieved from the expenditure side through reductions in transfers and interest payments.** The expenditure burden decreased by 8 percentage points during the latter half of the 1990s with the fall most prominent at the central government level (Figure 2 and Table 1). Transfers, mainly to the unemployed, account for more than half—some 5 percentage points of GDP—of the reduction. Of this, roughly half can be attributed to cyclical effects and half to structural policies that have helped to induce an estimated drop of 4 percentage points in the structural unemployment rate since 1993. The other main reduction in the expenditure burden has come from falling interest expenditures both as a result of lower interest rates and positive debt dynamics. However, despite the consolidation effort, the expenditure burden is at 53 percent still among the highest in the world. And, the ratio of transfers and subsidies to GDP is not much lower than the level prevailing in 1990.<sup>1</sup>

<sup>1</sup> The picture is distorted somewhat by the replacement of net social transfers in 1994 with taxable gross social transfers, which increased the level of transfers and taxation by about 1.7 percentage points of GDP. Thus, although the data shows that the share of transfers and subsidies in GDP in 2000 was close to its 1990 level, this masks some underlying decline.

Figure 2. Denmark: Public Finance Trends in the 1990s  
(In percent of GDP)



Source: Danmarks Statistik; and Fund staff calculations.

Table 1. Denmark: Public Expenditure Consolidation, 1993-2000  
(In percent of GDP)

	1993	2000	Change
Total Expenditure (consolidated)	61.1	53.2	-7.9
Central government (unconsolidated)	42.6	34.2	-8.4
Local governments (unconsolidated)	32.6	30.5	-2.1
Unemployment and social benefits	11.5	6.1	-5.3
Structural	10.2	7.4	-2.8
Cyclical	1.3	-1.3	-2.6
Interest rates	7.3	4.2	-3.1
Due to lower interest rates	-	-	-2.5
Due to lower level of debt	-	-	-0.6
Consumption	26.8	25.1	-1.6
Structural	25.8	25.4	-0.4
Cyclical	1.0	-0.2	-1.2
Other expenditures	15.6	17.8	2.2

Source: Danmarks Statistik; and Fund staff calculations.

5. **Efforts to restrain public consumption growth, on the other hand, have been less successful.** The ratio of public consumption to GDP remains at an internationally high level and the fall in the ratio of 1.6 percentage points since 1993 is predominantly a reflection of the rapidly closing output gap—i.e., fast economic growth relative to potential—which has merely brought the ratio back to its 1990 level. Real growth of public consumption has on average been around 2 percent since 1996 and has exceeded the government's target growth rate of 1 percent a year almost every year since its inception in 1998.<sup>2</sup> A significant part of the slippage from the target occurred at the local government level. The ratio of public investment to GDP has also increased, albeit slightly.

6. **Maintaining the revenue share of GDP at a very high level by international standards has also helped consolidation.** The share of revenues to GDP, which peaked at 58 percent in the mid-1990s, is today around 55 percent, slightly above the 1990 level. The same is true for the tax burden, which, despite declining somewhat in recent years, is around 48 percent of GDP, a level surpassed only by Sweden. Despite recent tax reforms that have reduced marginal income tax rates at the central government level, a broadening of the tax base, hikes in local tax rates to finance increased welfare spending, and new “green” taxes have all worked to keep the overall tax burden high (Box 1).

7. **In sum, the consolidation of Denmark's public finances and the associated drop in the debt ratio has been considerable.** Although benefiting from cyclical recovery of the economy, it has been supported by reforms in labor markets that helped shift the budget to

<sup>2</sup> Figures derived using the National Accounts public consumption deflator. In the authorities' medium-term plan, the deflator is based on average wages. On this basis, the overshooting of the target would be more modest.

structural surplus. However, public consumption has exceeded budgeted levels, particularly at the local government level, closing the window of opportunity for significant reduction in the high overall tax burden. Looking ahead, rapid growth and falling unemployment are less likely to be available to support of budget surpluses to the same degree as in recent years.

### **Box 1. Recent Tax Reforms**

The three latest tax reforms, implemented in 1987, 1994, and 1999, focused in particular on **personal income taxation**, and led to lower central government tax rates and a widening of tax bases. The three reforms reduced the tax rates at the low-, medium- and high-income level by 8, 17 and 14 percentage points respectively. The widening of tax bases resulted from reduced deductibility of negative capital income and allowances, introduction of labor market and pension contributions and a shift to gross taxable social transfers. As a consequence, the share of persons paying the highest marginal tax rates has increased from 14 percent in 1986 to about 40 percent today. Although central government tax rate cuts in isolation reduced the share of taxes in personal income by around 9 percentage points, the widening of the tax base and local government tax rate hikes increased the income tax share by around 8 and 3 percentage points respectively. Nonetheless, the average marginal effective tax rate for 25–59 year olds was reduced by about 2 percentage points.

Other key tax reform changes have been alterations to the **taxation of savings in funded pension schemes, corporations and environmental pollution**. Taxation on bond yields on savings in funded saving schemes was changed by replacing a variable rate taxation linked to the real interest rate with a fixed rate of 26 percent. Taxation of stock returns in these schemes was also introduced, initially at 5 percent, but recently the taxation of bond and stock returns was harmonized at 15 percent. Also, corporate rates were lowered from 50 percent in 1987 to 30 percent in 2001. But a parallel widening in the corporate tax base and other changes have outweighed the negative effect on revenue. Increases in “green” taxes have financed about two thirds of the net revenue losses of the personal income tax reduction embedded in the three reforms.

In total, the net effects of the three reforms on public finances have been relatively limited. The authorities have estimated the total revenue effect to be a positive DKr 4.4 billion (about 0.3 percent of GDP). Whereas the 1994 reform is estimated to have contributed negatively by DKr 4.5 billion to revenues, the 1987 and 1999 tax reforms contributed positively by DKr 1.7 and DKr 7.1 billion, respectively.

## **III. THE DANISH FISCAL FRAMEWORK**

### **8. The formalization of Denmark’s medium-term fiscal framework and the associated medium-term targeting has been an ongoing process since the early 1990s:**

- (a) The EU initiated deficit targets, debt ceilings and convergence programs introduced in the early 1990s in preparation for the EMU provided a first formal framework.

(b) Significant further steps were taken in 1997, when the government published a more ambitious medium-term consolidation plan, *Denmark 2005*. The explicit objective was to reduce the 2005 debt-to-GDP ratio to 40 percent by means of a 1 percent target for real public consumption growth<sup>3</sup> and a range of structural improvements. This committed the government to a more stringent consolidation path, essentially making the EU-wide framework non-binding. Initially the new framework did not make reference to a specific budget balance target, although a target of a surplus of at least 2 percent was introduced in a later version.

(c) In 2001 the planning horizon was extended and the government presented the current medium-term framework in *Denmark 2010*. It specified a target of an average annual budget surplus of 2–3<sup>4</sup> percent of GDP over the cycle, a debt-to-GDP ratio of 35 percent by 2005 and 20–25 percent by 2010, and a continuation of the 1 percent target on real public consumption growth until 2005, and ½ percent until 2010.

9. **The move toward more explicit medium-term fiscal targets has been driven by a number of factors and has mirrored a similar trend internationally (Box 2).** Initially, a large deficit and debt ratio raised concerns about sustainability. Meanwhile, the implementation of the Maastricht deficit and debt limits increased EU scrutiny of fiscal policy. Additionally, it was considered increasingly important to bring down the level of debt to:

(a) **Ensure intergenerational fairness:** The generations who build up the debt should contribute to paying it back.

(b) **Accommodate increased spending pressures due to population ageing:** A rising share of elderly in the population will, as in many other industrialized countries, increase the welfare state burden on the working population by decreasing labor supply and increasing spending on pensions, long-term care, and health care. The authorities aim to reduce the level of debt and consequently debt-servicing costs before the demographic changes take serious effect from 2010 onwards. Otherwise,

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<sup>3</sup> The 1 percent target was supported by a four-year agreement reached in 1998 between the central and local government intended to ensure compliance with the target and give focus to expenditure control.

<sup>4</sup> Recently the government decided to move a fully-funded supplementary pension plan from public to individualized private accounts. The surplus of this plan amounts to about ½ percent of GDP. The budget surplus target will thus be technically adjusted down to 1½–2½ percent of GDP.



## **Box 2. Fiscal Frameworks—International Background**

Formalizing the management of public finances through the implementation of explicit and medium-term targets for the budget balance, expenditures and/or debt level has become increasingly common worldwide. The response has been driven by the perception of a deficit bias resulting from political and institutional factors such as the short time horizon of governments, a tendency to overestimate returns to public expenditure, and lax procedures for spending amendments.

Formalized fiscal frameworks or, in their stricter form, fiscal rules, are typically defined as time-bound constraints. In their most common form they set a numerical target or define specific rules for the budget process. The underlying objectives are various (Kopits and Symansky, (1998)) and depend on the particular situation of a country. They include: achieving lower interest rates and debt through reputational effects (New Zealand, Sweden); reducing the size of government, as measured by tax-to-GDP ratios (Finland, Netherlands); restraining demand in an overheating economy (Ireland, Portugal); and tackling future age-related spending needs (Belgium, Denmark). Commonly, the frameworks adopted are based on either a combined deficit and debt target or expenditure targets. Frameworks based on deficit and debt targets define only levels of final fiscal objectives and are usually vague about how to attain them. On the other hand, frameworks based on expenditure targets often concentrate on the steps to achieve fiscal targets and put a higher emphasis on implementation issues. The distinction between these two categories of frameworks is, however, not clear-cut (Danninger, (2002)).

The country-specific setup of fiscal targets reflects diverse political systems and budget procedures. Some frameworks pursue explicit deficit targets (Sweden, Switzerland), while others allow policy makers to change the objectives over time (Netherlands, Finland). A typical example of a framework based on a deficit target is the “close to balance” requirement for general government budgets under the EU’s Stability and Growth Pact. Countries are required to meet the criterion unless exceptional circumstances can be claimed, but even though ECOFIN reviews a member country’s stability program, no clear instructions are provided on how to achieve these goals. Other examples are the fiscal rules in United Kingdom and Germany that specify limited deficit targets and allow debt finance of investment as a means to pursue a growth-enhancing policy (golden rule). Debt targets—defined by the debt-to-GDP ratio—are commonly used as supplementary goals specifying an upper limit, since some debt-variability is in general considered desirable (Barro (1979)). Examples are a maximum debt-to-GDP ratio of 60 percent defined in the Maastricht criteria and a maximum 40 percent debt-to-GDP ratio in the UK. Sweden, Switzerland and the Netherlands are examples of countries with expenditure rules. Although expenditure restraint is only one approach to fiscal improvement, it has typically proven to be the most effective one (Alesina and Perotti, (1997)). Denmark’s framework specifies not only budget balance and debt targets, but also a ceiling on real public consumption growth.

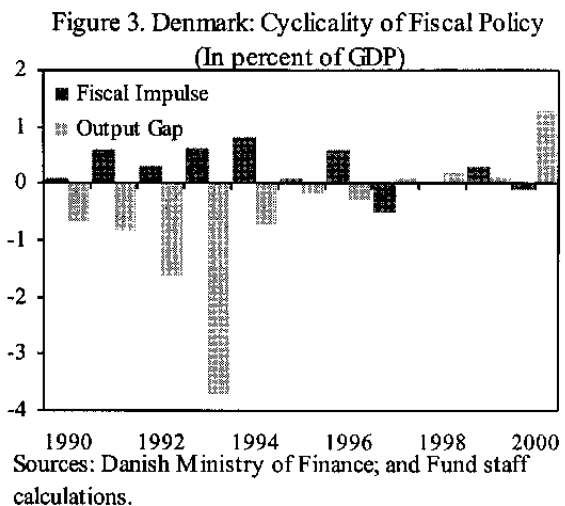
A factor in choosing a fiscal framework is the trade-off between the stronger commitment to achieve long-run fiscal goals—which requires more detailed rules—at the cost of insufficient short-run fiscal flexibility (Danninger, (2002)). Relatively rigid frameworks, such as the requirement to restrict the budget balance or expenditure to a pre-determined value, are more likely to achieve a given fiscal goal, but can create an undesired fiscal policy stance in the short run. In contrast, frameworks with fewer regulations or less specific goals—e.g., a budget “close to balance”—would allow more flexibility in the short run, but suffer from weaker enforcement discipline. More complex frameworks with conditional clauses could improve the trade-off, but have not found much application in practice due to difficulties in communicating policy intentions to the public.

coming generations will be faced with tough choices between significant tax increases and/or a reduction in the scope and coverage of the welfare system.

(c) **Make room for tax competition and a lower tax burden:** Increased mobility of capital and labor is expected to increase tax competition. At the same time, the reduction in labor supply resulting from the demographic changes makes it increasingly important to increase labor force participation rates.

10. **The various targets of the medium-term fiscal framework are generally well chosen.** A surplus is straightforward to explain to the public and market participants, and is relatively easy to monitor. In isolation a budget balance target does not prevent political spending bias, since higher expenditures can always be financed through higher taxes. However, this is to some degree addressed through the ceiling on real public consumption growth—although a ceiling extending to additional expenditure categories, if designed properly, could be more effective—and, more recently, by the government’s “tax-freeze”. Additionally, the combination of a spending ceiling and a budget balance target prevents excessive deficits resulting from large tax cuts or systematic over-prediction of revenues. The medium-term goals for the debt ratio further support discipline and the focus on longer-term sustainability.

11. **Expressing the target as a range and requiring it to be met on average over the business cycle address the potential pro-cyclicality associated with a strict budget balance target.** This permits automatic stabilizers to work, thereby reducing the need for fiscal tightening to offset weak revenues or cyclical expenditure pressures in a downturn and—in principle—requiring larger surpluses in periods of strong growth.<sup>5</sup> The budget balance range could lessen fiscal discipline, but it is relatively narrow and the range floor is set relatively high. By and large, fiscal policy was counter-cyclical in the 1990’s (Figure 3). Nonetheless, the more precise version of the budget balance “rule” is relatively recent and a longer track record would be needed to confirm if this remains so.



<sup>5</sup> To increase transparency about the underlying budget position the Ministry of Finance produces and publishes periodically a measure of the structural budget balance. It has also published descriptions of the methodology used for calculating the structural budget balance.

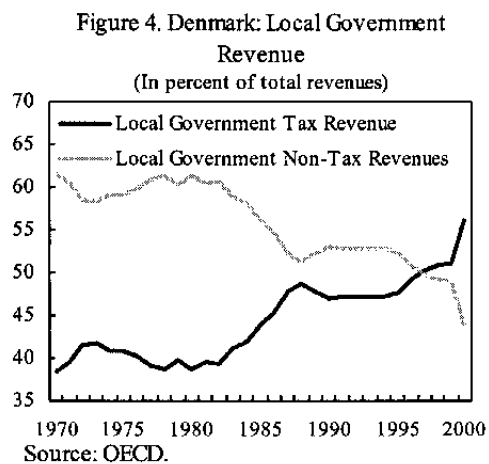
12. **The publication of the medium-term fiscal framework has enhanced transparency and accountability of public finance management.** In addition to the explicit targets, the underlying assumptions on which the projected path of the public finances is based are outlined in separate publications, the latest being *Denmark 2010*. These include assumptions about expected developments in macroeconomic variables and structural improvements such as labor supply effects from early retirement and active labor market policy reforms. Limited sensitivity analysis is also presented and the current state of public finances is evaluated in light of the long-term challenges caused by ageing (Box 3). Publication opens the door to public scrutiny and ensures a high level of accountability. This is imperative given that attainment of the objectives is a political commitment and not a constitutional obligation, as, for example, it is in Switzerland. The medium-term nature of the fiscal framework can also help ensure political commitment across electoral cycles.

13. **Although the fiscal framework encompasses the general government, the reputational risks associated with non-compliance do not appear to be equally shared by the different levels of government.** Neither does the responsibility for compliance. Given that spending overruns in the past have typically taken place at the lower level of government, further steps to ensure internalization of general government objectives at the local level would be beneficial. This could be achieved through a tightening of the current fiscal framework between the central and local governments and by exploring means of containing growth in expenditures on welfare services, which are largely provided by local governments.

#### IV. LOCAL GOVERNMENTS AND THE FISCAL FRAMEWORK

14. **Local government autonomy runs deeper in Denmark than in most other industrial countries.** Following the Municipal Reform in 1970, decentralization within the public sector has increased substantially, with ever-wider responsibilities being transferred from the central government to counties and municipalities. Today, the 16 counties and 275 municipalities provide around 80 percent of public services and are relatively free to choose how to do so. In addition, the municipalities administer all social benefit schemes.

15. **Decentralization has been reflected in the structure of local government's revenues.** Subject to a limited set of restrictions, local governments can determine income tax rates. Since 1970, tax collection as a share of total revenue has increased by 18 percentage points (Figure 4). From the early 1990s, the increase has reflected both higher local tax rates and stronger economic activity. On the other hand, revenues from central government transfers declined in the 1990s in line with the increasing taxes and the falling number of benefit recipients during the upswing.



**Box 3. Sustainability Calculations by the Danish Ministry of Finance**

The Ministry of Finance calculates a so-called corrected budget balance, which adjusts for a range of future changes (see Table). A corrected budget balance in deficit suggests that the current fiscal policy is not sufficiently tight to ensure the financing of all future obligations. A corrected balance in surplus suggests that there is room for easing fiscal policy without jeopardizing the sustainability of public finances or without later being forced to increase taxes and/or cut welfare spending. The calculations show that the corrected budget balance was in surplus in 1999/2000, but shifted to a deficit in 2001. The calculations, correct for five elements:

	1999	2000	2001
Actual budget balance	3.1	2.5	1.9
Social security funds	1.3	1.4	1.0
Balance excluding social security funds	1.8	0.9	0.9
Correction for demographic effects	-2.5	-2.9	-3.1
Correction for deferred taxes	0.9	1.1	1.2
Growth and inflation correction of debt	1.7	1.7	1.4
Correction for other aspects	-1.3	-0.8	-1.2
Corrected budget balance	0.6	0.0	-0.8

- (1) **The surplus of social security funds:** These funds (primarily the supplemental labor market pensions, ATP) cover future legislated liabilities for pension benefits etc. and are consequently not at the government's disposal.<sup>1</sup>
- (2) **Demographically induced spending increases:** Ageing is expected to put upward pressure on public expenditures due to increased spending on long-term and health care, and pensions. Assuming that no further changes to tax rates or spending standards will take place, the present value of additional future spending is the largest single corrective item.
- (3) **Deferred taxes from private pension savings:** Future taxation of privately-funded pension savings will contribute positively to public finances and hence enters as a positive correction. Furthermore, the increased coverage in the future of private pensions will decrease means-tested social transfers and thereby improve public finances.
- (4) **Growth and inflation correction of debt:** Rising nominal GDP will lessen the public sector debt service burden.
- (5) **Temporary measures:** Some of the public revenues are temporary and sources will terminate at some stage in the future. An example is the revenue from North Sea oil production, which will run out as the oil reserves are used up.

The calculations are quite sensitive to underlying assumptions about growth and other macro economic variables as well as demographic developments. For example, they assume unchanged unemployment and participation rates from base-year levels. Thus, any improvements here would make room for maneuver.

<sup>1</sup> This number is adjusted for the removal of the ½ percent surplus of the fully funded supplementary pension plan from the public accounts from 2001 and onwards.

16. **Increased decentralization has also been evident in a deliberate move toward more unconditional transfers, *bloktilskud*, aimed at promoting local autonomy and flexibility of decision making.** The share of *bloktilskud* in total central government transfers has risen from less than one half in 1978 to around two thirds today. The distribution of unconditional transfers depends on the tax base<sup>6</sup> and not the activities of the individual local governments. *Bloktilskud* thereby differ from other transfers, such as reimbursement schemes and special subsidies, where the central government finances a certain share of local government expenses or pre-approved projects, respectively.

17. **A key part of the annual agreements, made during the spring and early summer between the central government and local government associations for the following calendar year, concerns the size and distribution of transfers from the central government.** In addition to the distribution, according to assessed tax bases, the transfers are adjusted according to tentatively agreed expenditure levels (operating costs) taking into account:

- (a) Price and wage changes in the local government sector.
- (b) Changes in local government expenses due to changes in the distribution of expenses and service tasks between the central government, counties and municipalities, and changes in the binding central government regulation of local government activities. This adjustment is known as *Det Udvidede Totalrammeprincip* (DUT) and was introduced to neutralize the effect of central government-imposed responsibilities.
- (c) Changes in local government real expenses on cash benefits, activation, job training, disability, etc. This adjustment is known as Budget Guarantee and is intended to compensate local governments for, among other things cyclically-determined changes in expenditures (Box 4).

Final budget expenditures, revenues and tax rates are not known until the budgets are adopted in October, so there is an inherent uncertainty at the time of the spring/summer agreements. In addition, the agreements reached by the local government associations are not legally binding for counties and municipalities. In recent years, expenditures and tax rates have repeatedly been allowed to exceed the agreed upon levels.

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<sup>6</sup> Distributing the unconditional transfers according to tax bases is intended to neutralize the effect of changes in the total amount transferred by having the same effect on tax rates across the individual local governments.

#### **Box 4. Adjustment According to Budget Guarantee**

The Budget Guarantee compensates local governments for changes in the number of recipients of cash benefits, disability pensions, etc., regardless of whether the changes are the result of cyclical, demographic, or other factors. The associated reimbursement is divided into two parts: a direct partial reimbursement and a residual reimbursement to all local governments. For example, expenditures on cash benefits are reimbursed at a 50 per cent rate to each municipality implying that the municipality would pay half of the marginal change in these expenditures. On top of this, national changes in the number of cash benefit recipients are reimbursed at a 50 per cent rate and divided up amongst the municipalities in proportion to their unconditional transfers. Consequently, the system combines full central government financing of transfers with some incentives for municipalities to keep expenditures low. Experience shows that changing the direct reimbursement percentage significantly affects municipalities' administrative practices. For example, a reduction in 1999 of the reimbursement percentage in the disability pension scheme from 50 to 35 percent reduced the inflow to the scheme markedly. This suggests the design of the reimbursement scheme can play a large role in setting the right incentives for local government spending behavior.

18. **Transfers are also adjusted horizontally according to an internal equalization scheme (Box 5).** This scheme transfers money from local governments (primarily in the greater Copenhagen area) with large tax bases and/or low expenditures (for example, due to a relatively small proportion of pensioners or socially displaced persons) to municipalities in the opposite situation. While the equalization scheme serves to compensate for inherent comparative disadvantages due to factors outside the control of individual local governments, it has the potential side effect of dampening local government ingenuity and resolve to broaden the tax base or reduce expenditures through more effective management.

#### **Box 5: Internal Equalization System**

The system of equalization between local governments redistributes resources conditional both on revenue and expenditure bases. On the revenue side, the base is the sum of the per-capita (in region) income tax base and a share of taxable land values. On the expenditure side, the base is calculated from a composite index taking into account: 1) the minimum spending level required to run a sufficiently professional administration in a small local government, 2) demography, and 3) social indicators such as the number of single mothers and rental dwellings. The components entering the composite index are supposed to be exogenous to individual local governments to ensure that they have limited ability to manipulate the base, at least in the short-run.

Redistribution is based on differences between the calculated revenue and expenditure bases and national averages. For counties, 80 percent of the deviation from national averages for both tax and expenditure bases are redistributed. For municipalities only 45 percent is redistributed. Municipalities with tax bases less than 90 percent of the national average are compensated by an additional 40 percent of the gap. Within the greater Copenhagen area, an additional 40 percent of the differences is compensated

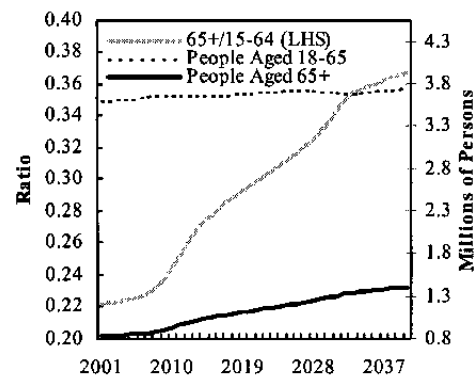
19. **Although, greater decentralization has potentially served to increase flexibility in the public sector and improve public service provision, the central government is left**

**with less ability to control public finances.** This makes it more difficult to ensure internalization of the central government’s targets for the total public finances. The current “gentleman’s agreement” between central and local governments, aimed at meeting the spending target and preventing local taxes from rising too far, helps ensure some degree of consistency across the different levels of government, but the cost of non-compliance is only reputational and often it is difficult for the public to place the blame. This could argue in favor of a more formalized and transparent internal stability pact ensuring consistency at all levels of government with the overall public finance targets. Such a system could also provide local governments with further incentives to comply with agreements by introducing financial punishment for non-compliance and rewards for compliance. Alternatively, restrictions on local taxing power through a “tax freeze” compensated by larger degrees of freedom to apply user charges and increase tax bases could support adherence to the spending target and expenditure control more generally.<sup>7</sup> In addition, the transfer system, including the internal equalization scheme, could be made more subject to conformity with a basic set of principles for effective welfare service provision and public finance management. And the reimbursement scheme could be used more actively by changing absolute and relative reimbursement rates among different schemes. This could motivate local governments to take further steps to, for example, reduce the number of passive benefit recipients and thereby increase labor supply.

## V. THE FISCAL FRAMEWORK AND LONG-TERM SUSTAINABILITY

20. **Like many other industrialized countries, Denmark faces a significant demographic shift over the next forty years.** As a consequence of declining fertility and mortality rates since the 1960s, the number of elderly will increase and the number of working age persons will remain flat (Figure 5). Although the projected rise in the share of elderly in Denmark is less severe than in many other industrialized countries, by 2040 there will be only 2½ persons of working age for every person aged over 65 compared with about 4 at present (Figure 6).

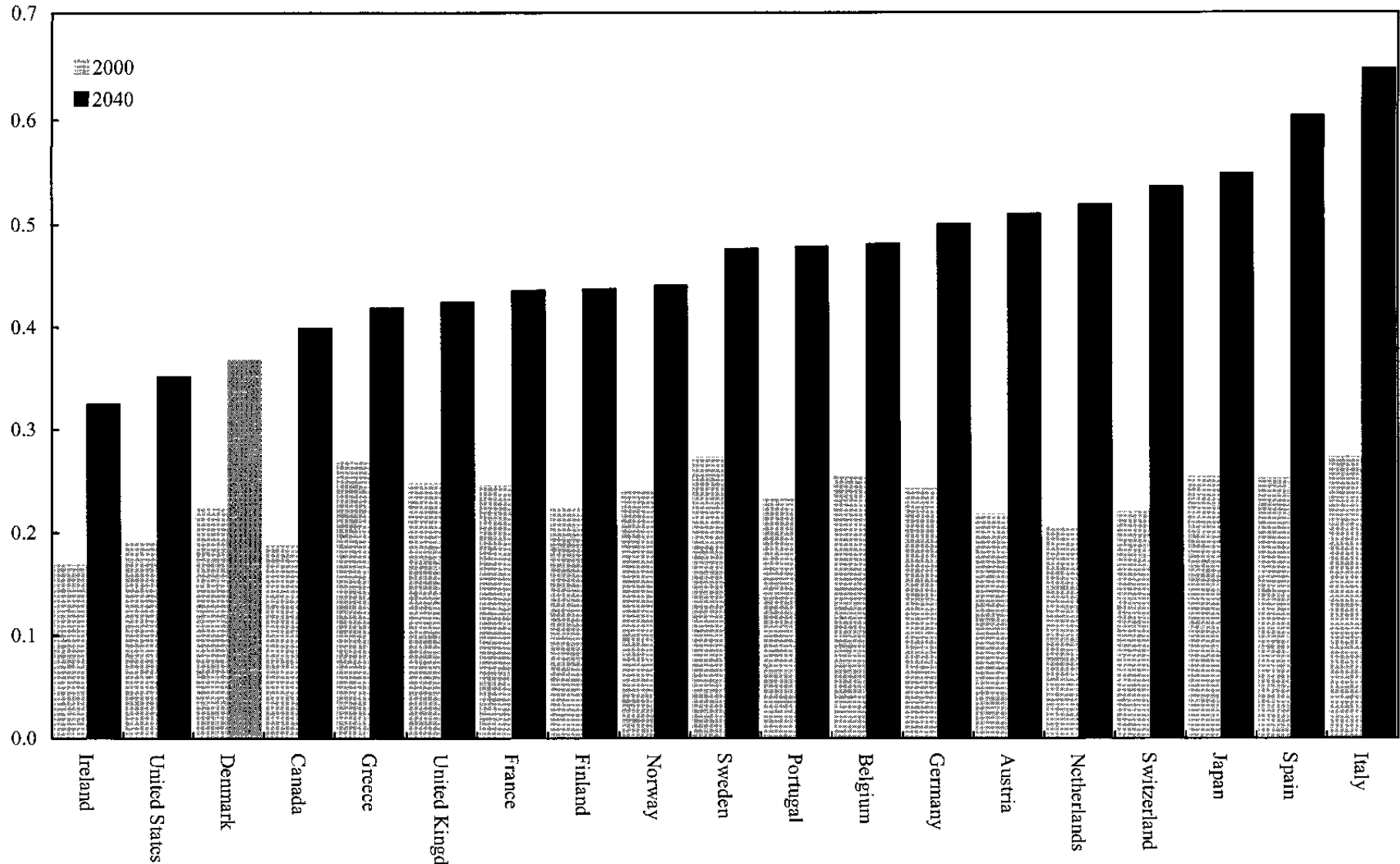
Figure 5. Denmark: Demographic Trends



Source: Danmarks Statistik.

<sup>7</sup> The new government has introduced a tax freeze, which is intended to cover all levels of government. The government expects to enforce the freeze through the regular negotiations with local governments and to offset local tax increases with tax cuts at the central level. However, leaving the marginal responsibility with the central government works against incentives to contain taxes and public spending at the local level.

Figure 6. Denmark: Ratio of People Aged 65+ to People Aged 15–64



Sources: United Nations; and Danmarks Statistik.

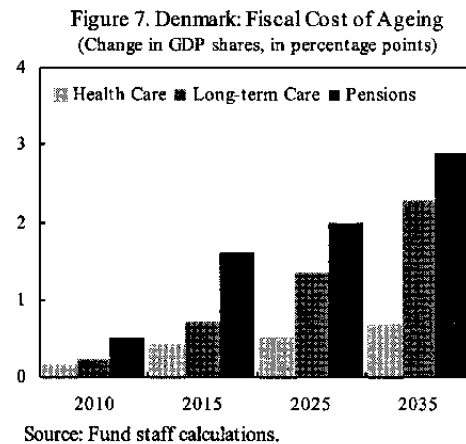


21. **The demographic change imposes a distributional challenge since the number of net contributors to the welfare system will fall relative to the number of net recipients.** This will put strain on both the expenditure and revenue sides of the welfare system. First, the increasing number of elderly will lead to higher expenditures on core welfare services such as health and long-term care and on old-age pensions (Boxes 6 and 7). Second, a stable population of working age combined with an increasing share of older workers with relatively low participation rates, will decrease the labor force and erode the tax base. The pressures on the public finances will not be felt strongly before 2010 implying that the current decade presents a window of opportunity to make the necessary preparations.

22. **IMF staff estimate that the GDP shares of health care, long-term care and old age pension will increase by 0.7, 2.3 and 2.9 percentage points respectively from 2000-2035, altogether nearly 6 percentage points (Figure 7).** The relatively large increase in long-term care spending is partly the

result of a strong increase in the share of the population over 80 years old and the extensive role of the state in caring for them. The increase in health care spending is more subdued reflecting a less strong age-dependent usage. The projections are relatively close to the latest published estimates from the authorities, which are based on somewhat less favorable demographic projections, but take into account offsetting effects from means-testing of pensions. The latter refers to the build-up in Denmark of the second and third (funded) pillars of the pension system, which in isolation will reduce the future outlays on means-

tested public pensions. The increase in long-term costs associated with ageing is projected to slightly exceed the average for EU countries (EU (2001)). Although less severe demographic shifts and the sizable funded elements of the pension system confer some advantages to Denmark, these are offset by relatively generous long-term care programs.



23. **The sustainability of fiscal policy must be viewed in light of likely longer-term developments in revenues and expenditures.** Given the long time horizon involved, and the compounding effects of debt dynamics, projections and analysis are very sensitive to assumptions about demographic changes, macroeconomic variables, the impact of structural policies, and the trend in costs of welfare services such as health and long-term care. Sustainability also depends crucially on the room for maneuver on tax policy. With Denmark already having one of the highest tax burdens in the world, international tax competition and other sources of tax base erosion could well restrain the authorities' ability to raise taxes to pay for unanticipated demands on welfare services. Instead, migrating tax bases could require the authorities to cut taxes beyond what is envisaged in current medium-term plans. Taxes might also have to be cut to encourage (or be consistent with) sufficient incentives to raise labor participation (Appendix).

### **Box 6. The Danish Pension System**

The Danish pension system is characterized by a pay-as-you-go first pillar with wage indexation and significant second and third pillars with funded pensions. Due to the build up of funded pensions, the Danish pension system is therefore shifting from being predominantly pay-as-you-go to an increasingly funded system based on individual contributions. However, old-age pensions will continue to provide a basic income for all pensioners.

**Pillar 1** consists of a universal public old-age pension that guarantees all people over 65 a minimum income. A part of this pension is dependent on other income, however, all pensioners are entitled to a basic amount of around DKr 50,000 a year using 2001-rates. The first pillar also includes the so-called supplementary labor market pension, which is mandatory for all people in the workforce. This pension is a funded scheme with assets amounting to about DKr 260 billion (22 percent of GDP). The typical contribution amounts to 2 percent of gross wages. The public old age pension is supplemented by a disability pension, which covers disablement, and an early retirement scheme for workers aged 60 or more. The disability pension is primarily financed by taxes, while the early retirement pension is voluntary and requires at least 25 years of contributions.

**Pillar 2** includes labor market pensions, which are fully-funded and based on collective agreements between employer and worker organizations. They are compulsory for union members. Schemes for white-collar workers were initiated as early as the 1950s and became general in the 1970s. Contribution rates vary between 12-15 percent of gross wages. Blue-collar workers adopted labor market pensions in the early 1990s; these will not fully mature before 2070. Total labor market pension assets amount to about DKr 475 billion (40 percent of GDP) and are expected to accumulate to 150 percent of GDP in 2050.

**Pillar 3** consists of individual private pensions. These pensions are perceived as a supplement for the pensions in pillar 1 and 2 and are increasing in prevalence. The total assets amount to approximately DKr 360 billion (30 percent of GDP) and are expected to reach 50 percent of GDP in 2050.

**A number of changes intended to increase average retirement age, stimulate savings, and accelerate the transition toward an increasingly funded pension system have recently been implemented.** (1) The most recent reform, adopted in November 2000, simplifies the disability pension system and ensures higher activation of disabled persons. (2) In the 1999 collective labor market agreements, it was agreed that blue-collar workers' contributions to labor market pensions from 2004 should increase to 9 percent of gross wages. (3) In the so-called Whitsun package of 1998, it was agreed to extend the mandatory supplementary labor market pension: a contribution of 1 percent of gross wage became mandatory for all workers. The new government intends to individualize this scheme and move it outside the general government accounts. (4) The early retirement benefit scheme was also reformed in 1998 to make retirement before the age of 62 less attractive and provide a pension premium for those abstaining from using the early retirement scheme. Furthermore, the period over which a member must contribute was prolonged to 25 years. The authorities calculate that the reform will increase average retirement age by half a year. (5) Finally the official retirement age will be reduced from 67 to 65 years in 2005, implying that people in this age group will receive old age pension instead of the more generous early retirement benefit. In 1995 a pre-early retirement scheme was stopped. The scheme gave 50-59 years old long-term unemployed members of an unemployment-insurance fund the opportunity to withdraw from labor market.

### **Box 7. The Danish Health Care System**

The health care sector has three political and administrative levels: the central government, the counties, and the municipalities. The task of the **central government** is to initiate, coordinate, and advise—as well as establish the goals for a national health policy. Parliament and the Ministry of Health, in its capacity of principal health authority, are responsible for legislation covering the tasks of the counties and the local authorities in the health area. The Ministry of Health also sets guidelines for the running of the health care service.

Denmark's 16 **counties** are responsible for the hospitals and for the practicing sector. They have wide-ranging powers to organize the health service for their citizens according to regional wishes and can adjust services and staff according to needs at the different levels. A special administrative body, The Copenhagen Hospital Cooperation, is responsible for running the hospitals in the municipalities of Copenhagen and Frederiksberg.

Denmark's 275 **municipalities** are responsible for home nursing, dental care and preventive health schemes for children and young people. They are also responsible for a majority of the social services (e.g., old people's homes) that involve health care services.

The vast majority of health services are provided free of charge. Of the total expenditure on health care in 1999, public expenditure constituted 82 percent and private expenditure only 18 percent. Private health care expenditure mainly covers user payments for pharmaceuticals, dentistry, and physiotherapy. The total public expenditure on health care measured in fixed prices increased by 27 percent from 1980 to 1999. Nevertheless, in the same period, the share of total public and private health care expenditure in GNP decreased by 0.7 percentage points to 8.4 percent of GNP.

The counties and the local authorities pay for about 81 percent of health services, partly through taxes which they levy themselves, and partly through unconditional transfers from the government. Most private health care expenditure is paid directly to the service providers. However, about 30 percent of the population is covered by private health insurance, which reimburses part of patients' own expenditures. The counties set hospitals' budgets.

Under the Health Care Reimbursement Scheme, services are provided by self-employed professionals such as general practitioners, specialists, and dentists, who are licensed by the central government in accordance with collective agreements between the counties and the relevant unions. The collective agreements set prices of individual services, which are then covered by the Health Care Reimbursement Scheme. The provider of a service is not permitted to demand extra payment from a patient in addition to that stipulated by the collective agreement. General practitioners are paid partly through capitation and partly through fees for their services. Other providers under the Health Care Reimbursement Scheme are paid fees for their services. Pharmacies operate on the basis of public authorizations, which are allocated by the Minister for Health. The total number of these authorizations is limited to a balanced geographical coverage throughout the country.

24. **With these points in mind, a number of illustrative scenarios were prepared:**

**Scenario 1: Reform success**

If all goes according to the authorities' medium-term plan, the public sector debt ratio will remain at a comfortably low level even when demographic strains are at their high point. In this scenario, the underlying assumptions closely follow those in the latest fiscal plan, *Denmark 2010*, and updates. Specifically, it is assumed that reforms of the pre-early, early and disability pension schemes, together with active labor market policies help to alleviate some of the demographic pressures on labor input and potential growth.<sup>8</sup> In addition, the spending ceiling on real public consumption growth of 1 percent until 2005, and 0.5 percent until 2010, is assumed to be observed and the revenue-to-GDP ratio is reduced by the expected 3 percentage points.<sup>9</sup> Based on these assumptions, IMF staff projections suggest that budget surpluses will persist well into the medium term (Figure 8).<sup>10</sup> Accordingly, even with some rise in the later years, the debt-to-GDP ratio is projected to be less than half the current level in 2035.

**Scenario 2: Less successful reforms and higher welfare service spending**

Even small slippages in structural reform progress could push surpluses into deficits much earlier than in scenario 1. Given already high participation rates and low unemployment, the authorities' labor supply assumptions may prove difficult to realize. In addition, supply constraints on health and long-term care, combined with rising demand, could lead to relative higher cost inflation, absent effective reforms. With minor changes to assumptions about reform success and welfare service spending, the trough of the debt-to-GDP ratio is projected to be reached around the middle of the next decade and, absent a policy response—e.g., cutting expenditure

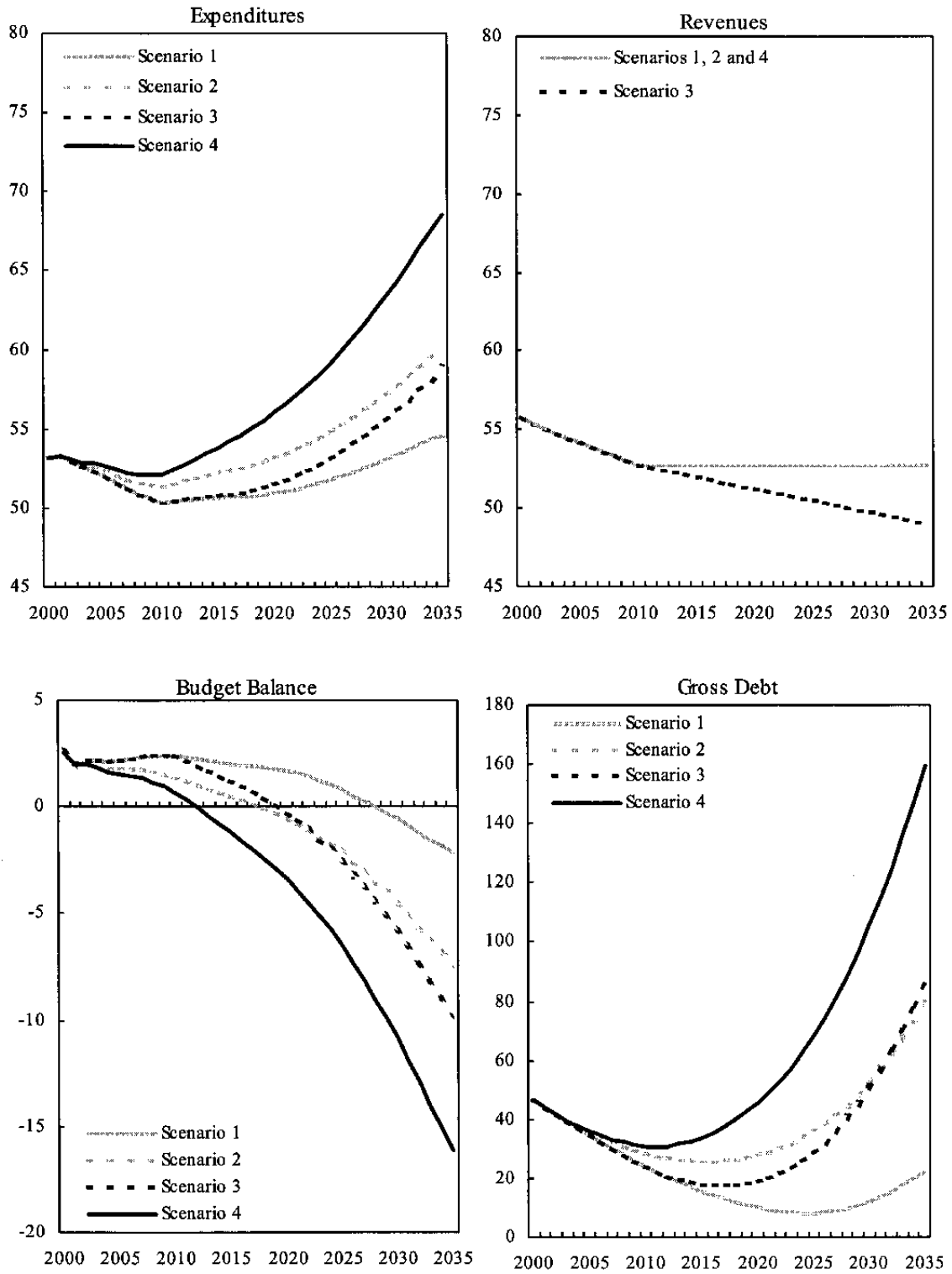
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<sup>8</sup> The labor force and employment are assumed to grow by 0.2 and 0.3 percent a year, respectively, and the unemployment rate to fall by 0.7 percentage points to 4.5 percent over the next ten years. Potential growth is assumed to average 1.7 percent from 2000–2010, but to fall to 1.5 percent at the end of the period.

<sup>9</sup> As in the authorities' medium- to long-term projections, the growth rate in average wages is used as the deflator to calculate real public consumption growth.

<sup>10</sup> The budget balances have not been adjusted to remove the ½ percent of GDP surplus in the supplementary pension funds that the authorities have decided to individualize and move outside the general government accounts. Since these funds are fully-funded, their inclusion or exclusion does not influence the projected debt level and the assessment of sustainability.

Figure 8. Denmark: Public Finance Projections Under Different Scenarios  
(In percent of GDP)



Source: Fund staff estimates.

growth or raising taxes—the debt ratio would rise to around 80 percent by 2035 (Figure 8).<sup>11</sup> While in principle modest tax increases (e.g., reversing the reduction in the revenue ratio through 2010) could limit the debt ratio to an acceptable 35-40 percent in 2035, it is not clear that tax raising options would be available. It should also be stressed that reform outcomes could easily be more disappointing than assumed in scenario 2. They still assume, for example, some growth in employment despite no increase in the population of working age.

### **Scenario 3: Shrinking tax bases**

Shrinking tax bases could place additional strains on the public finances. Future tax competition, shrinking labor supply, and tax cuts aimed at boosting labor supply could give rise to a reduction in the revenue-to-GDP ratio in excess of that envisaged in scenario 1. Assuming that the revenue burden were to fall by an additional 3.5 percentage points in 2010–2035 relative to scenario 1, and leaving everything else unchanged, the debt ratio would be about 85 percent in 2035 and public finances would appear to be on an unsustainable path (Figure 8). However, this would be only a slow erosion of the tax base and the debt-to-GDP ratio could be contained at the same level as in scenario 1 by a reduction in public consumption relative to scenario 1 of about 0.1 percent of GDP a year (about 0.4 percent off the annual real growth rate) from 2003 onward.

### **Scenario 4: Overshooting the spending target**

Modest but persistent overshooting of the real public consumption growth target would have large dynamic effects. Increased demands for higher spending on core welfare services and current supply constraints on many services could increase pressures to abolish the real public consumption growth target. Assuming that the growth target on average is exceeded by around 0.5 percentage point from 2003, the budget surplus would vanish quickly and the debt-to-GDP ratio would start rising from 2011 and by 2035 would exceed 150 percent (Figure 8). Even if the authorities managed to meet the target again from 2010 and onwards, the debt ratio would still double by 2035.

25. **The scenarios illustrate a number of points.** First, outcomes depend on the success of structural reforms. Modest shortfalls from assumed labor supply and growth paths or less success in containing health and long-term care costs, can quickly lead to unsustainable fiscal outcomes in the absence of offsetting policies. Second, in principle modest tax

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<sup>11</sup> Specifically it is assumed that a) the labor force and employment will grow at only half the rate assumed by the authorities; b) the unemployment rate will fall to only 5 percent; c) potential growth will be slightly lower at 1.4 percent from 2008 onwards; and d) health and long-term care costs as a share of GDP will increase by an additional 0.5 and 0.4 percent, respectively, by 2035.

increases could neutralize unforeseen strains on public spending. In practice, it may not be possible (or desirable) to raise taxes, so the burden would fall on expenditure restraint. Third, if taxes are forced lower in the future because of tax competition or the need to encourage labor supply, then an early start on restraining expenditure growth is needed to avoid a sharp scaling back of spending later when demographic pressures are biting. Fourth, sticking to the target for growth in real public consumption is crucially important for long-term sustainability. Even relatively modest deviations from the target over extended periods of time will result in a significant worsening of public finances.

**26. From a risk management perspective, these points might argue for a tighter ceiling on real public consumption growth in the next ten years than is factored into the current medium-term fiscal plan.** This could be supported by additional measures aimed at increasing labor supply such as an increase in the minimum early retirement age and added financial disincentives for early retirement. Also, the generosity of the welfare benefit system (including duration and eligibility) should be kept under review to ensure adequate labor supply incentives and to eliminate welfare traps.

## VI. CONCLUDING REMARKS

**27. Denmark's fiscal framework is working well and commendable progress has been made in consolidating the public finances and reducing public debt.** Carefully chosen targets and a high degree of transparency have contributed to its success. Looking forward, continued success will depend on the authorities' ability to control the growth of public expenditure, including at the local level. If the target for real public consumption growth continues to be overshot, the public finances will risk not being sufficiently prepared to face the serious pressures down the road from the ageing of the population. Raising taxes to meet these pressures is unlikely to be an option. More likely, an erosion of the tax base will add to the need to rein in expenditures. The next ten years therefore presents a window of opportunity before demographic strains begin to bite to make the necessary progress in containing expenditure growth and reducing Denmark's high public expenditure ratio. More determined structural reforms aimed at alleviating labor supply constraints would also be useful.

### **DO HIGH TAXES MATTER FOR DENMARK'S GROWTH POTENTIAL?**

28. **At about 48 percent of GDP, Denmark's aggregate tax burden is among the highest in the EU.** Whether this fact is of relevance for economic policy depends on the answers to two questions. What are the net effects of high taxation for economic efficiency? Will high taxes constrain policy choices in the future?

29. **The major functions of the tax system are providing funds for public expenditure and redistributing income.** These functions help achieve greater equality at possible efficiency costs (Putterman et al (1998)). Greater equality can be welfare improving and contribute positively to efficiency. Redistribution can function as a substitute for incomplete credit and insurance markets, both for the individual over his lifetime and across individuals. It is likely to help achieve high average levels of education, high labor market participation, and strong social cohesion—factors that are thought to influence a country's long-term growth potential positively (Thakur et al (2001)). However, taxation may distort economic incentives: the labor-leisure choice, the consumption-savings choice, the capital-labor substitution, and the firm's financing decision may all be affected, decreasing economic efficiency.<sup>1</sup>

30. **How strong are these distortions in Denmark?** International comparison puts Denmark's marginal tax rates on labor income among the highest (the average marginal effective tax rate is close to 55 percent) and its marginal tax rates on capital income (estimated by Jensen (2001)) at about 43 percent on an effective basis) in the middle range among industrial countries.

- High labor income taxes, combined with a generous benefit system, may lead to a bias for leisure. This would manifest in welfare traps at the low end of the wage scale and shrinking hours at the higher end. However, the empirical evidence is mixed for Denmark. Several studies found low labor supply elasticities (about 0.1–0.2, see for instance Bingley and Lanot (2001), and thus, a relatively small effect of high taxes on working hours. In contrast, welfare traps have been detected (Pedersen and Smith (2001)).
- Healthy levels of aggregate and household savings do not provide prima facie evidence of distortions of the consumption-savings choice. Denmark's complicated and non-neutral taxation of capital income (OECD (2001)) may, however, lead to distortions in the structure of savings. This is confirmed by Jensen (2001), who estimates that household financial savings are very sensitive to tax changes, with an elasticity around –1. A large part of this elasticity is likely to reflect compositional changes in response to changes in taxation.

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<sup>1</sup>This argument predicated on the assumption that the only source of distortion is taxation.



- Relatively high taxes on labor may bias the technology choice towards capital-intensive methods. In addition, large differences between the tax rates on labor and capital generate strong incentives for labor income to masquerade as capital income.

**31. Although there seems to be no strong evidence that the current level and structure of taxation is a source of major economic problems in Denmark, maintaining the status quo is likely to become challenging in the future.**

- Increased economic integration and factor mobility may erode the tax base.
  - Empirical evidence indicates that foreign direct investment flows are already strongly influenced by taxation; a meta-analysis of 25 empirical studies shows a tax elasticity of  $-3.3$  percent (Ruud and Ederveen (2001)). Gropp and Kostial (2000) also find evidence that FDI flows influence the corporate tax base.
  - Migration may melt down the labor income tax base if workers with higher income move to countries with lower tax burdens. So far, there is scant evidence that this process is significant. While expanding the tax base in the host country, low-skill immigration may put a downward pressure on tax rates, as it can upset the political status quo that supports high taxes and strong redistribution. Razin, Sadka and Swagel (1998) find some evidence that low-skilled immigration is associated with lower tax rates in EU countries.
- Tax competition may also influence setting tax rates. According to the naïve view, this will lead to a “race to the bottom” in tax rates, especially on mobile factors. The empirical evidence on this is so far not overwhelming. In addition, tax rates represent only one dimension of competitiveness; increasing returns or positive externalities from agglomeration effects can contribute to perpetuating differences in tax rates.<sup>2</sup>
- Given the large reliance on taxes on labor, demographic developments that will shrink the labor income tax base will likely necessitate a shift towards alternative tax bases. As VAT rates are already high, and taxing mobile bases is inefficient and/or distortionary, finding substitutes is likely to be difficult.
- “Fiscal termites” (Tanzi (2000)) may eat into the foundations of the tax system. Globalization and technological changes, including e-commerce, will present new possibilities for tax evasion.
- Distortions may become stronger over time. Lindbeck (1995) argues that over the long run, social norms may drift in countries with large welfare states. This would manifest itself in tax evasion, an increasing misuse of welfare services, and an expanding shadow economy. Graversen and Smith (2001) find significant participation in the shadow economy, and estimate that labor supply in this sector is quite sensitive to wages in the regular sector.

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<sup>2</sup>Baldwin and Krugman, (2000), discuss these effects in a North-South model.

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