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Ireland: Selected Issues

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IRELAND

Selected Issues

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Approved by European I Department

July 16, 2002

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MAIN WEBSITES FOR IRISH DATA

Data in this Staff Report reflects information received by June 27, 2002. In many cases, more recent data and additional economic information can be obtained directly from the following internet sources:

The Irish Central Statistics Office.....http://www.cso.ie

Department of Finance.....http://www.irlgov.ie/finance

The Central Bank of Ireland.....http://www.centralbank.ie

The Irish Business and Employers Confederation.....http://www.ibec.ie

The Irish Congress of Trade Unions.....http://www.ictu.ie

Investment and Development Agency Ireland.....http://www.ida.ie

The Irish Economic and Social Research Institute.....http://www.esri.ie

The Fund's SDDS website.....http://dsbb.imf.org/country/irlcats.htm

Ireland: Basic Data

Demographic and other data:

Area	70.3 thousand square kilometers
Population (end-2001)	3.84 million
Natural rate of increase (percent change)	0.7
GDP per capita (SDRs) 2001	21,131

Composition of GDP in 2001, at current prices 1/	In millions of euro	Distribution in Percent
Private consumption	56001	48.5
Public consumption	14312	12.4
Total investment (including stockbuilding)	27031	23.4
Total domestic demand	97344	84.3
Exports of goods and services	110120	95.4
Imports of goods and services	92915	80.5
GDP at market prices (average estimate)	115437	100.0
Net factor income from abroad	18690	16.2
GNP	97747	84.7

Selected economic data	1998	1999	2000	2001
	(Annual percentage change, unless otherwise indicated)			
Output and unemployment				
Real GDP (at market prices, average estimate)	8.6	10.9	11.5	5.9
Unemployment rate (in percent)	7.4	5.6	4.3	3.9
Earnings and prices				
Hourly wages in manufacturing	5.0	5.6	6.2	10.3
Unit wage costs, manufacturing	-11.8	-9.0	-4.7	-1.8
Harmonized index of consumer prices	2.2	2.5	5.3	4.0
Money and interest rates				
M3E 2/	18.1	...	14.7	17.2
Private sector credit 3/	22.6	33.5	20.6	16.5
3-month Interbank rate	5.4	2.9	4.4	4.2
10-year government bond yield	4.7	4.8	5.4	4.9
Effective exchange rates (1995=100, annual average)				
Nominal	97.3	94.0	88.3	89.2
Real effective exchange rate (based on CPI)	96.8	93.9	90.9	94.3
	(In percent of GDP)			
Public finance				
General government balance 4/	2.3	4.1	4.5	1.7
Primary balance 4/	5.1	6.0	6.1	2.8
General government debt	55.1	49.6	39.0	36.5
Balance of payments				
Current account balance	0.9	0.4	-0.6	-1.0
Trade balance	11.4	13.9	14.1	14.9
Capital and financial account balance	2.6	-1.6	9.9	1.6
Reserves (in billions of SDRs, end of period)	6.7	3.9	4.1	4.2

Sources: Department of Finance; Central Bank of Ireland; IMF, International Financial Statistics; and staff calculations.

1/ Based on National Income and Expenditure, compiled in accordance with the new European System of National Accounts (ESA 95).

2/ M3E was discontinued in December 1998. The methodology for calculation of Ireland's contribution to the Euro area money supply was amended in January 2000.

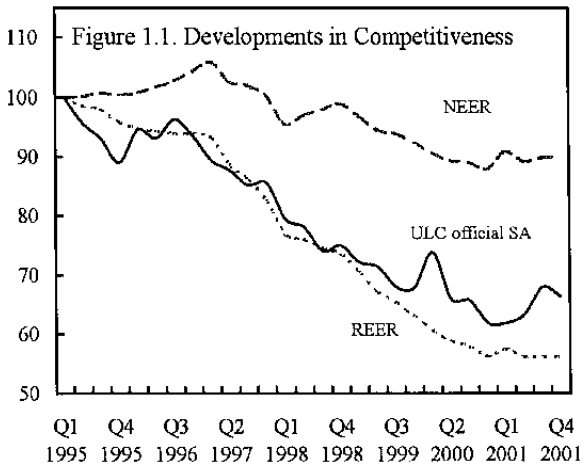
3/ Headline change, which includes the effects of transactions between credit institutions and non-bank international financial companies.

4/ Estimated prior to allocations for financing of future pensions liabilities and one-off expenditures.

I. How Competitive is Irish Manufacturing?[1]

A. Recent Developments in Competitiveness of the Manufacturing Sector

1. **The Irish manufacturing sector has made sizeable competitive gains in recent years.** When the standard unit labor cost-based measure of the real effective exchange rate (REER) is used to gauge external competitiveness for manufacturing, Ireland's competitive position appears to have improved remarkably during the recent half decade (Figure 1.1).[2] The improvement has been mainly due to a persistent drop in Irish unit labor costs (ULCs), and to a lesser extent, depreciation of the nominal effective exchange rate. The main contribution to falling ULCs has come from a surge in manufacturing productivity, which, until 2001, more than offset the impact arising from increases in hourly wages. The outstanding performance of Irish manufacturing has helped to keep the current account close to balance in recent years, despite substantial outflows of factor payments and large deficits in the services balance.



2. **In 2001, production cuts and accelerating wage growth arrested the trend improvement in external competitiveness, but the level remains high.** Although the annual average growth rate of manufacturing production still exceeded 10 percent in 2001, ULCs reversed their declining trend during the second half of the year. Production cuts in the second half of the year in response to slowing global demand and a surge in hourly wages led to rising ULCs, despite efforts of manufacturing firms to adjust to weaker demand by shedding labor. Both a cyclically-driven fall in the production of tradables as well as a permanent relocation of some high tech producers from Ireland contributed to this deterioration. However, given past gains, the overall competitive position of the Irish manufacturing sector still remains strong. Moreover, the most recent data suggest that a

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[1] Prepared by Valerie Cerra and Jarkko Soikkeli.

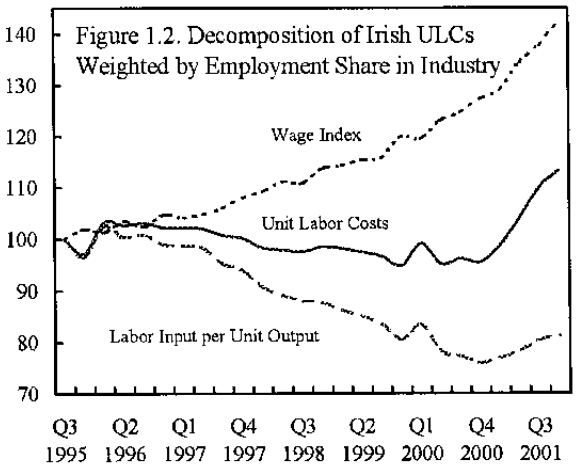
[2] Throughout this paper, a decline in a REER or NEER index devotes a depreciation or gain in competitiveness. See Annex for data sources and variable definitions.

rebound in manufacturing production in the first quarter of 2002 resulted in a significant drop in ULCs.[3]

3. **Gains in overall competitiveness mask large differences across manufacturing sectors, with important employment consequences.** While the overall performance of the Irish manufacturing sector has been impressive, changes in competitiveness have varied significantly across the sectors. Moreover, the overall success has been accounted for mainly by the astonishing performance of a handful of sectors mostly dominated by multinational companies, whose gains in productivity often result from intangible foreign inputs of production, such as global investment in research, product development, and advertising. In addition, while these sectors account for the bulk of value-added in production, they represent a disproportionately smaller share of total manufacturing employment. Therefore, it would be vital to gauge developments in competitiveness across different sectors to assess whether the current acceleration in wage inflation or a potential sustained appreciation of the euro could pose significant risks for manufacturing employment.

B. Alternative Measures for Assessing External Competitiveness

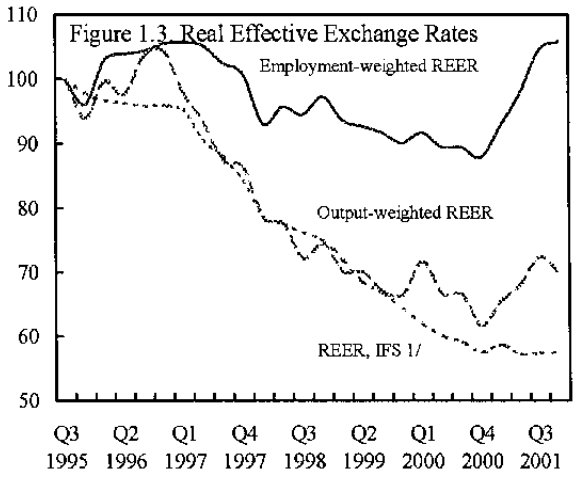
4. **Developments in unit labor costs have been less impressive in employment-intensive sectors.** An alternative way to gauge changes in unit labor costs and competitiveness is to weight the manufacturing sectors by their shares of total manufacturing employment, rather than by production volumes. This measure better assesses developments in the employment-intensive indigenous sectors as well as the risks to employment posed by the recent downturn and marked wage increases than the standard output-based measure, which is oriented to gauging current account risks. Such analysis suggests that past gains in competitiveness have been relatively limited, as Irish unit labor costs have been broadly stable from 1995–2000 (Figure 1.2). During this period, high production growth was offset by rapid wage increases. However, the combination of falling production and steep increases in labor costs during 2001 have had a drastic negative effect on unit labor costs although the output decline is in part cyclical, and



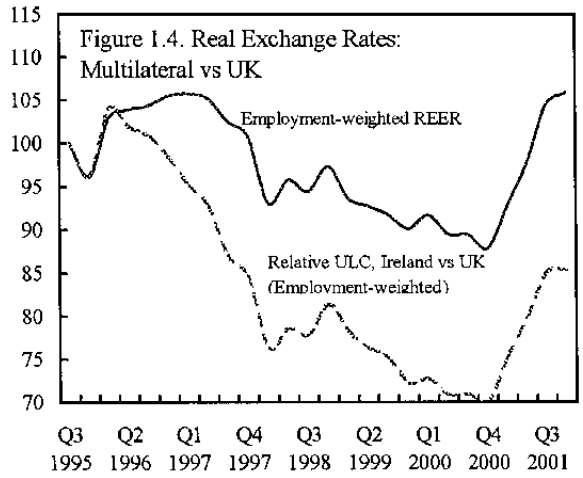
[3] The developments across sectors were, however, uneven and may be partly related to very strong productivity gains that are characteristic of cyclical turning points. Therefore, it could be premature to suggest that the Irish manufacturing productivity has returned to its earlier trend.

hence, may be temporary.

5. **External competitiveness as measured by the employment-weighted REER has been much bleaker than suggested by the standard measure of the REER.** The contrast between the two measures of the real effective exchange rate based on employment and output shares is striking (Figure 1.3). The REER based on weighting the industries by their shares in manufacturing output suggests that overall competitiveness continued to improve dramatically until 2001, in contrast to the broadly stable developments in the employment-weighted index. The more robust gains in competitiveness indicated by the output-based measure are largely explained by the very strong performance of a few industries that have accounted for the most of the recent growth in manufacturing and that are generally characterized by very high ratios of output per worker. Due to an increasing dominance of these "key" sectors, the two measures have been diverging since early 1997, with the production-weighted measure appearing more immune to rising wage costs.[4]



1/ Based on aggregate unit labor costs.
Smoothed with HP filter.



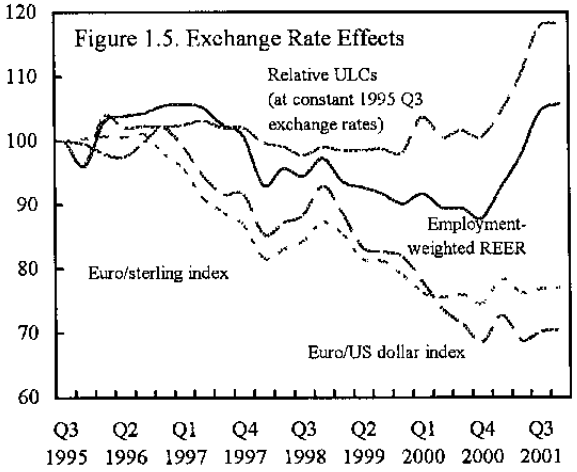
6. **Ireland's competitiveness has been particularly strong relative to the UK.** Compared to the UK alone, Irish manufacturing has achieved sizeable

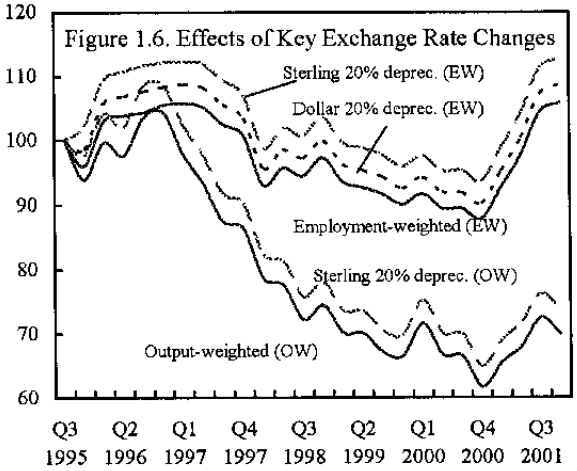
[4] The real effective exchange rate as reported in the IMF's International Financial Statistics (IFS) matches the index of output-weighted REER relatively closely. However, the recent pick-up in the latter index goes largely unnoticed in the IFS index because it is smoothed using a Hodrick-Prescott (H-P) filter. There are tradeoffs between these measures. The filtering used in the IFS index smooths out cyclical swings in productivity to obtain a gauge of underlying trends. On the other hand, H-P filters suffer from well-known end-point problems. Moreover, it can be argued that the output-weighted index measures competitiveness more accurately than the IFS index, since it applies industry-specific partner-country trade weights, rather than partner weights based on aggregate export trade.

competitiveness gains, even as measured with an employment-weighted index (Figure 1.4). Moreover, the UK is Ireland's single largest trading partner, with export shares varying from 14 percent to 84 percent in major industries. Therefore, competitiveness gains relative to the UK have also contributed to maintaining external competitiveness on an effective basis (i.e., compared with all trading partners).

7. **Most of the improvement in external competitiveness measured by the employment-weighted index was due to a weak exchange rate.** Disaggregating the contributions of the effective nominal exchange rate and relative ULC components to the real effective exchange rate suggests that much of the past competitiveness gains of the employment-intensive manufacturing industries were related to the weakness of the nominal exchange rate rather than favorable developments in Irish ULCs relative to its trading partners (Figure 1.5). Indeed, relative unit labor costs at constant 1995:Q3 exchange rates have been broadly stable until 2001, after which they surged by over 15 percent, partly reflecting a cyclical decline in output. Appreciation of sterling and the US dollar in 1997 and 1999–2000, in particular, contributed to a decline in the REER.

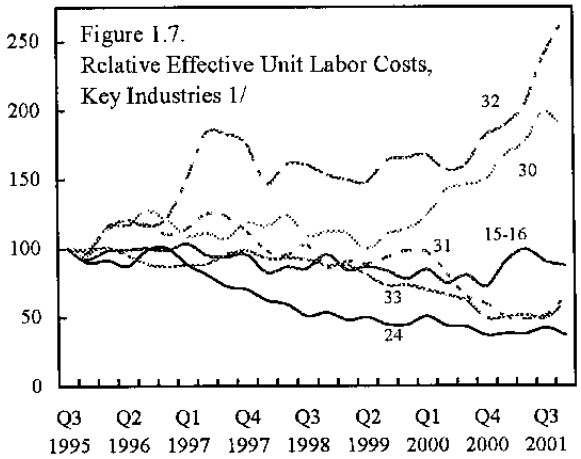
8. **Irish competitiveness is vulnerable to an appreciation of the euro, particularly against sterling.** Historical simulations of exchange rate changes (assuming no response in ULCs) indicate that the employment-weighted index is more sensitive to a sharp depreciation of sterling than to the US dollar (Figure 1.6). Indeed, if sterling had depreciated by 20 percent relative to the Irish currency, there would have been an upward shift in the REER by 7 percent compared with a shift of only 3 percent for an equivalent depreciation of the US dollar. For the output-weighted index, a 20 percent depreciation of sterling would have led to an increase of the REER by around 5½ percent, and by 3½–4 percent for a similar depreciation of the US dollar. Losses in Irish competitiveness resulting from an appreciation of the euro in 2002 would come on top of the already rapid cyclical deterioration that took place in 2001. The level differences in the employment versus output-weighted REERs in 2001 suggest that employment-intensive firms and sectors would be particularly





vulnerable to euro appreciation.

9. **Competitiveness has varied considerably across Irish manufacturing industries.** The chemical and pharmaceutical industries (NACE industry 24) registered the strongest competitiveness gains during the period 1995–2001 (Figure 1.7). This key sector accounted for more than half of manufacturing output in the first quarter of 2002, but only about 9 percent of the labor share of manufacturing. Within the electronics industries, there was also considerable divergence, with office machinery and communication equipment (NACE sectors 30 and 32, respectively) losing ground, and electrical machinery and medical and other instruments (NACE sectors 31 and 33, respectively) gaining ground over the half decade. The food, beverage, and tobacco industries (NACE sectors 15–16), which account for 18 percent of manufacturing employment, had relative unit labor costs that were fairly unchanged over the period.

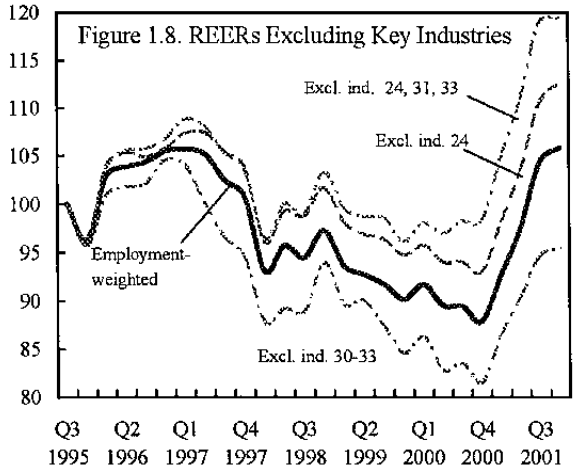


1/ Industries 15-16: Food, beverages, and tobacco;
24: Chemicals and chemical products;
30: Office, accounting and computing machinery;
31: Electrical machinery and apparatus, nec;
32: Radio, TV, and communication equipment;
32: Medical, precision, optical and clocks instruments.

10. **Excluding some of the key sectors from the employment-weighted index reveals that external competitiveness of the remaining manufacturing industries has deteriorated even more sharply.** An employment-weighted index—although more useful than an output-weighted index for determining the likely employment consequences of a shock to Irish wages or exchange rates—still masks some important differences across sectors. The chemical industry and some Information and Communication Technology (ICT) industries have had substantial gains. The profit margins in these industries may act as a cushion against shocks, although global production decisions must be considered in the context of the multinational firms' overall profits and demand conditions. Moreover, the extremely high level of value added per worker and the small share of labor costs to output suggest that these sectors may not be very sensitive to developments in wage costs. Thus, the employment risks of a shock are likely to be relatively minor. Thus, it is useful to examine developments in Irish competitiveness after excluding these key industries (Figure 1.8):

- Excluding the chemicals and pharmaceuticals industries (NACE 24), the remaining manufacturing industries suffered a major setback in their competitive position in 2001.
- The employment-weighted REER has deteriorated sharply excluding industries that have recorded the most impressive gains in productivity in recent years and could be considered "productivity outliers" (NACE 24, 31 and 33). This measure of the real

effective exchange rate started to appreciate already in 2000 and leaped up by some 20 percent in 2001. The results are comparable to those that excluded the data for chemicals and pharmaceuticals industries, but the decline in competitiveness is even larger, reflecting the drastic production cuts in the worst performing ICT industries.



- Competitiveness has actually been stronger excluding only the electronics industries (NACE 30–33). The exceptionally poor performance of the office, accounting and computing machinery industry (NACE 30) and the radio, TV and communication equipment industry (NACE 32) more than offset the gains of the electrical machinery and apparatus industry (NACE 31) and the medical, precision, optical, and clocks instruments industry (NACE 33). This poor performance is partly explained by recent production cuts. However, sectoral analysis of relative unit labor costs vis-à-vis trading partner countries reveals that the deterioration of the competitiveness in the production of NACE industries 30 and 32 was underway a long before the current global slowdown.

C. Concluding Remarks

11. **The stellar performance of the Irish manufacturing sector in recent years was partly interrupted in 2001.** The main reasons for fairly limited gains in external competitiveness were the global economic slowdown, the bursting of the ICT bubble, and the rapid increases in Irish wage costs.

12. **The multilateral REER calculated using weights based on relative employment shares—rather than output shares—suggests that gains in competitiveness were fairly limited during 1995–2000 and earlier gains were more than offset in 2001, partly due to cyclical production cuts.** The analysis indicates that while some sectors remained extremely competitive, high wage growth and substantial sectoral productivity differentials have resulted in an increased dispersion of competitive positions across various industries. The strong gains in aggregate productivity—particularly in the chemicals and pharmaceuticals industry—have masked a significant deterioration of external competitiveness in sectors that account for the main part of the Irish manufacturing employment.

13. **Irish manufacturing remains vulnerable to an appreciation of the euro.** Using the employment-weighted measure for the real effective exchange rate reveals that the depreciation of the nominal effective exchange rate played an important role in generating past competitiveness gains, as illustrated by the disaggregation of the REER index into nominal exchange rate and relative ULC components. The risk to competitiveness is most marked

relative to the strength of sterling, given that the UK has been Ireland's largest trading partner and has contributed to maintaining Irish competitiveness over the last half decade.

DATA SOURCES AND VARIABLE CONSTRUCTION

Unit labor costs in domestic currency for industry i in country c is calculated as:

$$ULC_i^c = \frac{\text{Earnings per hour}}{\left(\frac{\text{Output/ Employment}}{\text{Hours worked per person}}\right)}$$

The relative unit labor costs between Ireland and country c in industry i are given by:

$$ULC_i^{Irl,c} = e^c * \frac{ULC_i^{Irl}}{ULC_i^c}$$

where e^c is the nominal exchange rate of country c relative to the Irish currency.

Effective unit labor costs in industry i are constructed by summing relative unit labor costs of Ireland over all its trading partners, where the weights, tw_i^c, are based on the shares of Irish exports in industry i that are destined to each country.

$$relative\, ULC_i^{Irl,all} = \sum_c tw_i^c * ULC_i^{Irl,c}$$

An aggregate index, corresponding to a real effective exchange rate (REER), is then constructed by summing over all industries, using weights, ω_i, that can either depend on the employment share of each industry or the output share of each industry in total manufacturing.

$$REER = \sum_i \omega_i * relative\, ULC_i^{Irl,all}$$

The data frequency for all variables is quarterly.

The Central Statistical Office (CSO) of Ireland was the source of Irish data on production, employment, hours worked, and wages by NACE sector.

OECD was the source of partner country data on unit labor costs. In particular, data on production and employment was available from the OECD Structural Analysis (STAN) database by NACE industry for each country. Hours worked per employee in the business sector and hourly earnings of the manufacturing sector were taken from the OECD Analytical Database for each country on an aggregate basis. Missing observations, which were more frequent at the end of the sample, were supplemented by unit labor costs in domestic currency for the business sector, from the OECD Analytical Database. Nominal exchange rates were obtained from the IMF's International Financial Statistics.

Irish exports to each country by each industry were taken from the World Bank's World Integrated Trade Solutions, which contains trade statistics from the COMTRADE database made available by the United Nations Statistics Division. SITC industry classifications were matched by description to NACE industries to obtain sectoral direction of trade estimates. Export weights were based on averages over 1998–2000.

The CSO was the source of data on the employment share of each industry in total manufacturing in Ireland and 1995 value-added shares of each industry. The weights used to construct the output-weighted REERs were based on output shares at the beginning of 2002, which were obtained by accumulating 1995 value-added shares of each industry using production indices.

Final index calculations were seasonally adjusted and rebased to 1995: q3 = 100.

II. Ireland: Medium-Term Fiscal Scenarios[1]

A. Introduction

1. **Ireland's fiscal position strengthened substantially during the recent decade.** Stellar economic growth in the latter half of 1990s was accompanied by a gentle decline in the share of revenues to GDP reflecting cuts in income and standard corporate tax rates. At the same time, total expenditure increased at a steady pace, but the total expenditure-to-GDP ratio declined sharply reflecting the strong growth in GDP (Figure 2.1). As a consequence, general government finances turned from a deficit into a surplus—peaking at 4.5 percent of GDP in 2000—and the gross debt-to-GDP ratio was more than halved to the second lowest in the EU.

2. **The year 2001, however, marked a substantial turnaround for public finances.** Fiscal revenues were influenced by substantial tax cuts, slowing economic activity and various temporary factors, and fell considerably below budgeted levels. Concurrently, the expenditure-to-GDP ratio leapt up due to a 20 percent increase in primary expenditure and slower GDP growth. This led to a marked fall in the general government balance both in nominal and cyclically-adjusted terms. In spite of some temporary revenue-increasing measures, the fiscal balance is projected to deteriorate further in 2002 to a deficit of 1 percent of potential GDP in cyclically-adjusted terms.[2] Simultaneously, the outlook for Ireland's medium-term fiscal path has become much less benign. Against this backdrop, this note discusses the main factors likely to influence the Irish public finances in the medium-term and analyzes the sensitivity of Ireland's fiscal position to three alternative sets of assumptions.

B. Explaining the Recent Weakness in General Government Finances

3. The sudden deterioration of the general government fiscal position reflects mainly the following factors:

- There has been a surge in **total expenditures** in 2001–02. While the government's investment on infrastructure has increased rapidly since the mid–1990s, the main contribution to the recent jump in overall spending has come from a surge in current spending (Figure 2.1), which has risen by an estimated rate of 15½ percent in 2001–02 despite falling interest payment burden and cyclically low level of transfers to the unemployed. In particular, the rate of growth in general government consumption—i.e., compensation of employees, purchases of goods and services and depreciation—as well as transfers have accelerated briskly. Consumption has almost doubled and transfers have increased by some 64 percent between 1997 and

[1] Prepared by Jarkko Soikkeli.

[2] Excluding a 0.5 percent of GDP windfall arising from the euro changeover. The windfall is, however, included in the nominal overall balance in Table 2.1.

2002. The main factors behind the rapid rise in current spending have been increases in health, education and social welfare spending.

- **Various tax and spending measures** introduced during fiscal year 2001 may have had a larger impact on both tax revenues and current expenditures than had been previously expected.[3]

- In 2001, a rapid **deceleration of economic growth** worsened the outlook for profits and increased uncertainty over a potential increase in unemployment. As firms canceled or postponed investment plans and household spending slowed, tax buoyancy was smaller than budgeted.

- **Several temporary factors** that occurred in 2001 had an impact both on revenue and expenditure. These include travel restrictions and compensation related to animal diseases that had negative implications for both indirect taxes and current expenditure. Moreover, September 11 influenced both tax revenue and incurred costs via increased support for the national airline and tourism industry. At the same time, unwinding of a partly millennium-related boom in auto sales had a strong negative effect on indirect taxes in 2001.

C. Outlook for the Medium-Term Fiscal Position

4. **In the medium term, revenue growth is expected recuperate somewhat for the following reasons:**

- The underlying revenue performance should recover somewhat as the economy's growth rate is likely to bounce back towards its potential. Moreover, the negative revenue impact arising from the temporary factors mentioned above should disappear relatively quickly.

- Further tax cuts are likely to be limited in the coming years. First, the harmonization of the corporate tax rates in 2003 would put an end to a series of cuts in the standard corporate tax rate.[4] Second, the current government has signaled that it will take a more cautious approach to further income tax cuts.

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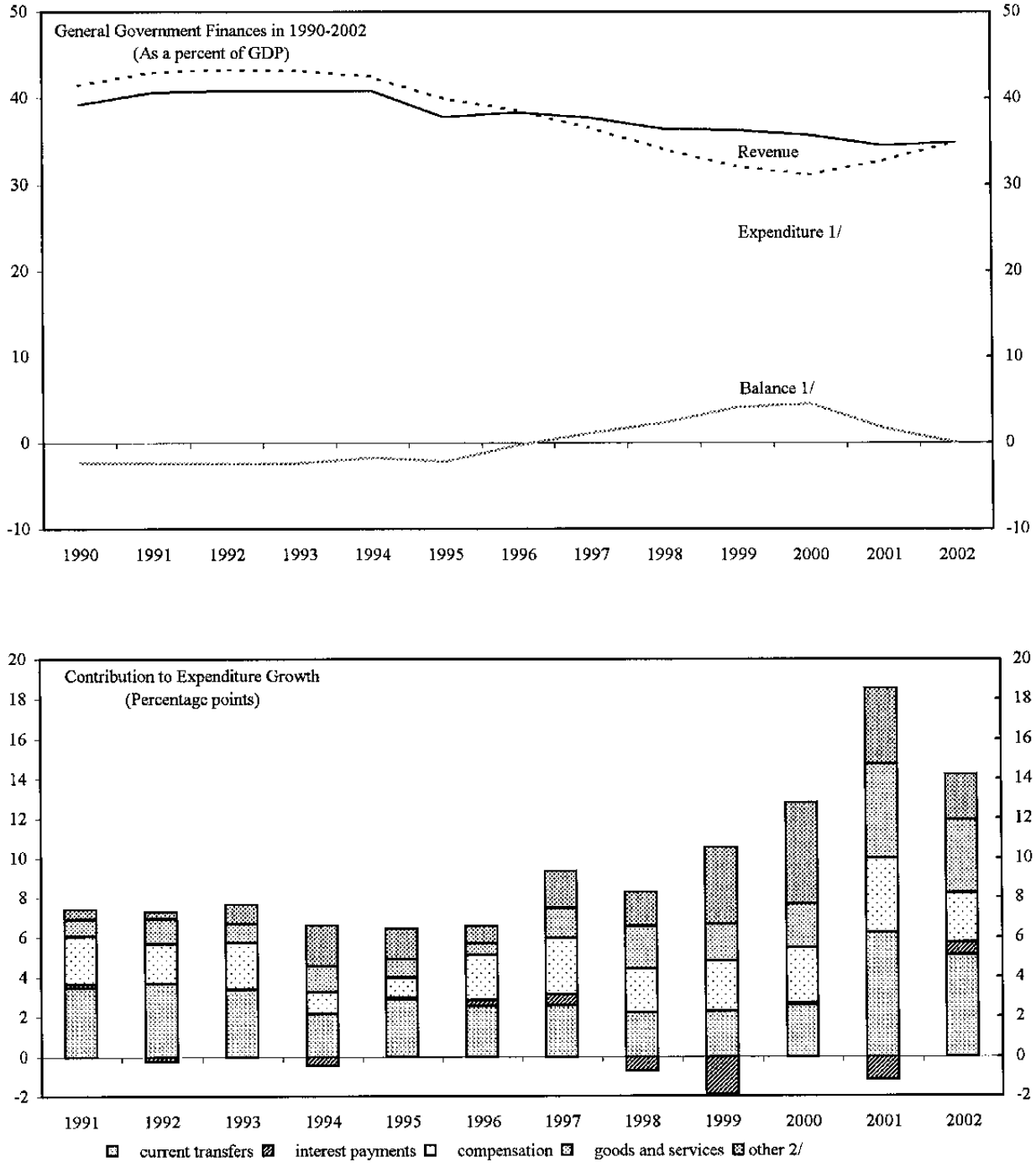
[3] These include further cuts in income tax rates, individualization of tax bands, the extension of the medical card to those aged over 70 years, and introduction of the Special Savings Investment Account scheme (SSIA).

[4] Despite a uniform 12½ percent corporate tax rate from the beginning of 2003, several IFSC and manufacturing companies will continue to enjoy the preferable rates of 10 percent until 2005 and 2010, respectively.

Figure 2.1. Ireland: General Government Finances



Sources: Department of Finance; and staff estimates.

1/ Excludes allocations made for public pension prefunding in 1999.

2/ Depreciation, investment and capital transfers. Excludes allocations made for public pension prefunding in 1999.

- The phasing in of an earlier payment date for corporate taxes will yield a temporary but prolonged upward level shift for tax revenues from 2002 to 2006.[5]

Nevertheless, growth in tax revenue is not likely to return to the double-digit levels that prevailed during the latter half of 1990s, given more limited growth potential for both the economy and the tax base.

5. **Persistent spending and wage pressures are likely to underpin robust growth in public spending**. The recent economic success and the subsequent increases in expenditure to improve the quality of public services and infrastructure have created expectations amongst the general public that substantial resources will continue to be allocated to finance new spending initiatives. At the same time, the recent fiscal developments have raised concerns that the overall spending growth is becoming difficult to control and that actual expenditures is overshooting budgeted levels. Moreover, the recent surge in expenditure has increased the risk that its overall quality is deteriorating. Spending pressures are most intense in the areas of public sector pay, health, and infrastructure mainly pertaining to, among other things, the benchmarking exercise for public sector employees, the implementation of the Health Strategy, as well as the completion of the National Development Plan.

Baseline scenario

6. **Revenue projections are subject to considerable uncertainty.**[6] The revenue forecast for the current year is based on estimates presented in budget 2002, but updated to reflect recent developments.[7] Revenue projections for 2003–04 reflect the authorities' estimates for growth in income, corporate and indirect taxes, but are adjusted for differences between the official and staff estimates of nominal GDP growth (Table 2.1). Therefore, staff's estimates implicitly include any tax measures planned by the authorities at the time of

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[5] Under the new system, at least 90 percent of estimated corporate taxes will be paid one month before the end of the accounting period. Phasing in the earlier payment date will yield, on average, an additional 0.6 percent of GDP in 2002–06 (see the 2002 budget for details).

[6] Forecasting revenues is difficult, not only because of uncertainties related to the performance of the global economy and Ireland's growth potential, but also due to major structural shifts in the economy—including the recent changes in the tax system—that complicate the estimation of tax elasticities.

[7] Additional income tax revenue losses (relative to budget) arising from the SSIA is included in the projections. Under the rules of scheme, the Exchequer will contribute to the individual saver's account an additional 25 percent of the amount saved by way of an income tax credit. The Department of Finance acknowledged in July 2002 that tax revenues were expected to fall short of budget by some 0.4 percent of GDP, partly due to the higher-than-expected take up of the SSIA.

presentation of budget 2002. Revenues for 2005–07 are projected by using staff's estimates of economic growth and the authorities' estimates for tax elasticities.[8]

7. **Expenditures are estimated based on the latest update of the Stability Programme (SP 2002–04).** In 2002, total expenditure is expected to turn out as projected in the latest official spending estimates from March 2002. Since the revised expenditure-to-GDP ratio for 2002 is considerably higher than estimated in the budget for 2002, the total expenditure projections for 2003–04 are based on the estimated nominal spending *increases* presented in the latest update of the Stability Programme rather than their envisaged *levels*. Contingency provisions of 0.8 and 1.1 percent in 2003 and 2004 are treated as expenditure. From 2004 onwards, primary expenditure is expected to grow in line with nominal GDP.

8. **According to the baseline scenario, the medium-term fiscal deficit is expected to stabilize around one percent of GDP after an initial deterioration in 2002–04**. General government finances are expected worsen fairly rapidly in 2002–04 owing mainly to subdued growth in tax revenues and large spending increases. The improving economy, an expected end to generous tax cuts, and deceleration in the rate of spending increases would, however, stabilize the fiscal position around one percent of GDP in 2004. In the following years, general government balance is projected to improve gradually until 2007,[9] when the phasing-in of the new corporate tax date ends.

9. **Although the path for fiscal balances has shifted down considerably, Ireland's medium-term fiscal position would still remain sound.** The debt level is currently low and—under this scenario—the gross debt ratio is expected to fall gradually to around 32½ percent of GDP by end-2007. In addition, the fiscal implications from population aging are expected to be fairly limited during this period due to favorable demographics.[10] Moreover, in order to partially fund the government's long-term pension liabilities, the authorities have established a National Pension Reserve Fund to which they are committed

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[8] Report of the Tax Forecasting Methodology Review Group, 1999.

[9] In its assessment of the Irish budgetary policy, the European Commission concluded that Ireland's latest Stability Programme—targeting small deficits for 2003–04—would broadly respect the commitments under the Stability and Growth Pact (SGP) provided that the contingency provisions will not be used. See Commission of the European Communities (2002).

[10] According to the Economic Policy Committee (2001), Irish public old-age pension expenditure as a share of GNP is projected to increase to 5 percent by 2010, an increase of 0.4 percentage points from 2000. The corresponding figure for the EU average, expressed as a share of GDP, is projected to remain steady at 10.4 percent.

Table 2.1. Ireland: Medium-Term Outlook for General Government Finances 1/

	2000	2001	2002	2003	2004	2005	2006	2007
Baseline scenario 2/ (As a percent of GDP)								
Total revenue	35.7	34.5	34.9	33.8	33.5	33.6	33.8	33.4
of which:								
Taxes and social security contributions	31.0	29.6	29.7	29.4	29.3	29.5	29.7	29.5
Other	4.7	4.9	5.2	4.4	4.2	4.1	4.0	3.9
Total expenditure	31.1	32.8	34.9	34.5	34.5	34.5	34.5	34.5
of which:								
Primary expenditure	29.1	31.2	33.3	32.8	32.6	32.6	32.6	32.6
of which:								
Gross fixed investment	3.6	4.1	4.3	4.6	4.6	4.6	4.6	4.6
Interest payments	2.1	1.5	1.6	1.7	1.8	1.8	1.9	1.9
Overall balance	4.5	1.7	0.0	-0.7	-1.0	-0.9	-0.7	-1.1
Gross debt	39.0	36.5	34.9	33.9	33.8	33.1	32.5	32.4
Spending pressures scenario 3/ (As a percent of GDP)								
Total revenue	35.7	34.5	34.9	33.8	33.5	33.6	33.8	33.4
Total expenditure	31.1	32.8	34.9	35.7	35.7	35.7	35.7	35.8
of which:								
Primary expenditure	29.1	31.2	33.3	34.0	33.7	33.7	33.6	33.6
of which:								
Gross fixed investment	3.6	4.1	4.3	5.3	5.2	5.2	5.2	5.2
Interest payments	2.1	1.5	1.6	1.8	1.9	2.0	2.1	2.2
Overall balance	4.5	1.7	0.0	-1.9	-2.2	-2.1	-2.0	-2.4
Gross debt	39.0	36.5	34.9	35.1	36.0	36.5	36.9	37.7
Alternative revenue scenario based on OECD elasticities 4/ (As a percent of GDP)								
Total revenue	35.7	34.5	34.9	33.6	33.1	32.8	32.6	31.9
of which:								
Taxes and social security contributions	31.0	29.6	29.7	29.1	28.9	28.7	28.6	27.9
Other	4.7	4.9	5.2	4.4	4.2	4.1	4.0	3.9
Total expenditure	31.1	32.8	34.9	34.5	34.5	34.6	34.7	34.8
of which:								
Primary expenditure	29.1	31.2	33.3	32.8	32.6	32.6	32.6	32.6
Interest payments	2.1	1.5	1.6	1.7	1.8	1.9	2.0	2.1
Overall balance	4.5	1.7	0.0	-1.0	-1.4	-1.7	-2.1	-2.9
Gross debt	39.0	36.5	34.9	34.2	34.4	34.6	35.1	36.7
Memorandum:								
Nominal GDP growth in percent	16.2	11.6	7.2	9.0	8.3	7.5	7.1	6.8

Source: Staff estimates

1/ Figures may not add up due to rounding.

2/ The baseline assumes that tax revenues will perform according to the latest Stability Programme projections in 2003–04, but are adjusted for the difference between the government's and staff's growth assumptions. Expenditure estimates for 2002 are based on the latest available official information, whereas projections for 2003-04 assume expenditure to increase at the pace envisaged in the Stability Programme (except for interest rate expenditure). From 2005 onwards, tax revenues are projected using the authorities' estimates of tax elasticities, while primary expenditure-to-GDP ratio is expected to remain constant.

3/ This scenario assumes similar revenues as the baseline, but larger spending pressures in various areas resulting in the full use of the contingencies amounting to approximately 1 percent of GDP in 2003–04. Furthermore, this scenario presumes that the cost of implementing of the national Health Strategy (at an estimated cost of EUR 12.7 billion in 2001 prices) would be spread evenly over the period 2003–11 and would not be included in the projected contingencies.

4/ This scenario is identical to the baseline, except that it adjusts revenue growth for 2003-04 to differences between tax elasticities as reported by the OECD and the authorities, uses the former elasticities for projecting revenues for 2005–07, and applies interest payments projections that are adjusted for the changed fiscal position.

to contribute 1 percent of GNP annually. By end-2001, the Fund had accumulated 6.7 percent of GDP in assets.[11]

Spending pressures scenario

10. **The government has launched several spending plans in response to the mounting pressure to improve the quality of public services and public infrastructure.** Although these plans are likely to have significant fiscal implications, many of them were not explicitly budgeted for in the SP 2002–04. Instead, sizeable contingency provisions were used to at least partly cover for the estimated expenses of executing these plans. Perhaps, the largest budgetary impact will arise from the implementation of the National Health Strategy—whose total cost is estimated at €12.7 billion over 2002–11 measured in 2001 prices. Since the 2002 budget made only marginal allocations for the Health Strategy, this scenario assumes that the costs of the plan will start to be incurred only in 2003 (being evenly spread over years 2003–11 at an annual cost of around 1 percent of GDP) and would be fully additional to the contingency provisions already included in the spending estimates. It is assumed that pressures in other spending areas—particularly additional compensation of employees arising from the implementation of the benchmarking exercise,[12] potential cost overruns related to the completion of the National Development Plan, as well as the provision of additional resources for education and security—would fully deplete the scope for additional spending provided by the contingencies.

11. **Implementing these plans would result in a rapidly deteriorating fiscal position, in the absence of revenue-enhancing measures or offsetting expenditure cuts.** The projected path for general government balances suggests that under this scenario the overall fiscal balance would worsen by almost 4 percentage points of GDP between 2001 and 2004 (Table 2.1). The government finances would be expected to strengthen marginally in 2005–06, although this improvement would be more than offset by the fall in corporate tax revenues due to the completion of the phased-in change in corporate tax payment dates. The bulk of the deterioration in the overall balance would result from the additional spending due to the

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[11] Earlier staff work has suggested that an annual set aside of 2½-3½ percent of GDP would be adequate to cover the government's long-term pension liabilities. The estimate is, however, highly sensitive to assumptions about future GDP growth and real interest rates. See "General Government Fiscal Position and Future Pension Liabilities" in IMF (1999).

[12] According to an initial assessment of the Department of Finance, full implementation of the recommendations in the Report of the Public Service Benchmarking Body would give rise to a full year cost of over €1 billion measured in current prices (around ¾ percent of 2002 GDP). However, the implementation of the Benchmarking Body's recommendations has still to be discussed between public service employers and unions.

implementation of the Health Strategy,[13] while higher interest costs induced by increased borrowing would result in a further annual weakening of some ¼ percentage points of GDP in 2005–07. Projections based on this scenario indicate that fiscal measures of about 2½ percent of GDP will be needed over the medium term to keep the SGP requirement of zero balance and to halt the rise in the public debt to GDP ratio.[14]

Alternative revenue scenario

12. **More cautious assumptions concerning the revenue elasticities would result in continuous worsening of the budget position.** A third scenario—which is similar to the baseline for 2002–04, except that it assumes lower sensitivity of revenues to economic growth[15]—suggests that unless additional fiscal measures are taken, Ireland's fiscal position would deteriorate considerably in 2005–07 (Table 2.1). This would imply that even if the authorities would make additional room for increased health expenditure by offsetting discretionary cuts in other areas of spending, it would face increasing need for either revenue-enhancing measures and/or further expenditure cuts that would exceed the cost of the currently planned spending initiatives. Moreover, simulations based on slower growth projections using both the authorities' and the OECD's tax elasticities (not reported here) show considerably deeper deficits in 2006–07.

D. Conclusions

13. This note has analyzed the recent developments in and outlook for the Irish government finances. The scenarios presented suggest that without further actions Ireland's fiscal position could move from an era of substantial fiscal surpluses to a one of deficits. While the baseline scenario indicates that the fiscal position would stabilize given the assumed economic recovery, the alternative scenarios suggest that lower revenue elasticity and/or undertaking additional health or other expenditure would—in the absence of offsetting measures—pose a significant risk of a worsening fiscal position. Furthermore, a prolonged period of sluggish growth would put a considerable, additional strain on government finances.

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[13] More than 60 percent of the total €12.7 billion cost of the plan is expected to be allocated to capital expenditure.

[14] Alternatively, higher-than-projected GDP growth would also strengthen the fiscal position. Staff's simulations suggest that—given unchanged primary spending—an average annual nominal GDP growth rate of 8½ percent in 2003–07 would be needed to achieve a zero balance by the end of the period.

[15] As estimated by the OECD (see van den Noord, 2000). The OECD elasticities suggest that a 1 percent change in the Irish GDP results in a change of 1.2 percent in corporate taxes; 1 percent in personal income taxes; 0.5 percent in indirect taxes; and 0.8 percent in social security contributions. This compares with the corresponding estimates of the authorities of 1.5 percent, 1.3 percent, 1.3 percent, and 0.6 percent, respectively.

By the same token, rapid growth would alleviate budget pressures, although most likely not sufficiently to maintain fiscal balance in the face of significantly higher growth than envisaged in the baseline scenario. Given that the margins under the SGP are all used up under the baseline scenario, any additional spending commitments or adverse fiscal shocks (e.g., from lower revenue elasticity or lower potential growth) will need to be met with offsetting fiscal measures to meet Ireland's commitments under the SGP.

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III. Ireland's Tax Effort—An International Perspective[1]

A. Introduction

1. **Ireland has experienced a persistent reduction in its tax yield in recent years**. This has largely reflected tax cuts, which coincided with an extended period of rapid economic growth. However, a recent sharp reduction in actual and prospective growth, as well as increased demands for higher fiscal expenditures, has likely precluded further tax cuts—indeed, as discussed in the staff report, possibilities for revenue increases may need to be explored.

2. **Against this background, this note examines Ireland's tax effort from an international perspective**. It notes that its tax revenues are comparatively low, and have been declining over the past two decades. This pattern reflects a combination of both developments in the size of relative tax bases, labor, capital and consumption, as well as in average effective tax rates. Ireland is seen to tax both labor and capital relatively lightly, while consumption is relatively heavily burdened. The note concludes with some background on specific tax measures as discussed in the staff report, including reducing tax expenditures; eliminating VAT zero rating and unifying the remaining rates; and introducing a local property tax.

B. Ireland's Comparative Tax Effort

3. **Ireland has a comparatively low tax yield among advanced economies**, expressed as a share of GDP (Figure 3.1). Its tax yield, at slightly above 30 percent on average over 1996–2000, is well below both the European Union and OECD Europe averages. Its share is more comparable to yields of other Anglophone economies—Canada, the United Kingdom, Australia, and the United States—than to its EU continental partners. Also its tax yield may reflect with a lag Ireland's until recently lower-than-average per capita income within the EU, as tax yields are generally positively correlated with income levels.[2]

4. **The composition of Ireland's tax revenues also differs from EU patterns in a number of respects**. It relies to a somewhat greater degree on direct taxes, especially personal income taxes, while a much smaller share of tax revenues come from social insurance contributions (Figure 3.2). The latter is consistent with Ireland's lower social security expenditures (as a share of GDP)—a feature of other Anglophone economies—compared with continental Europe. However, Ireland also derives a large share of revenues from indirect taxes, accounting for some 35 percent of the total, compared to 30 percent in the EU and OECD in general. This comprises both a greater reliance on the VAT, as well as

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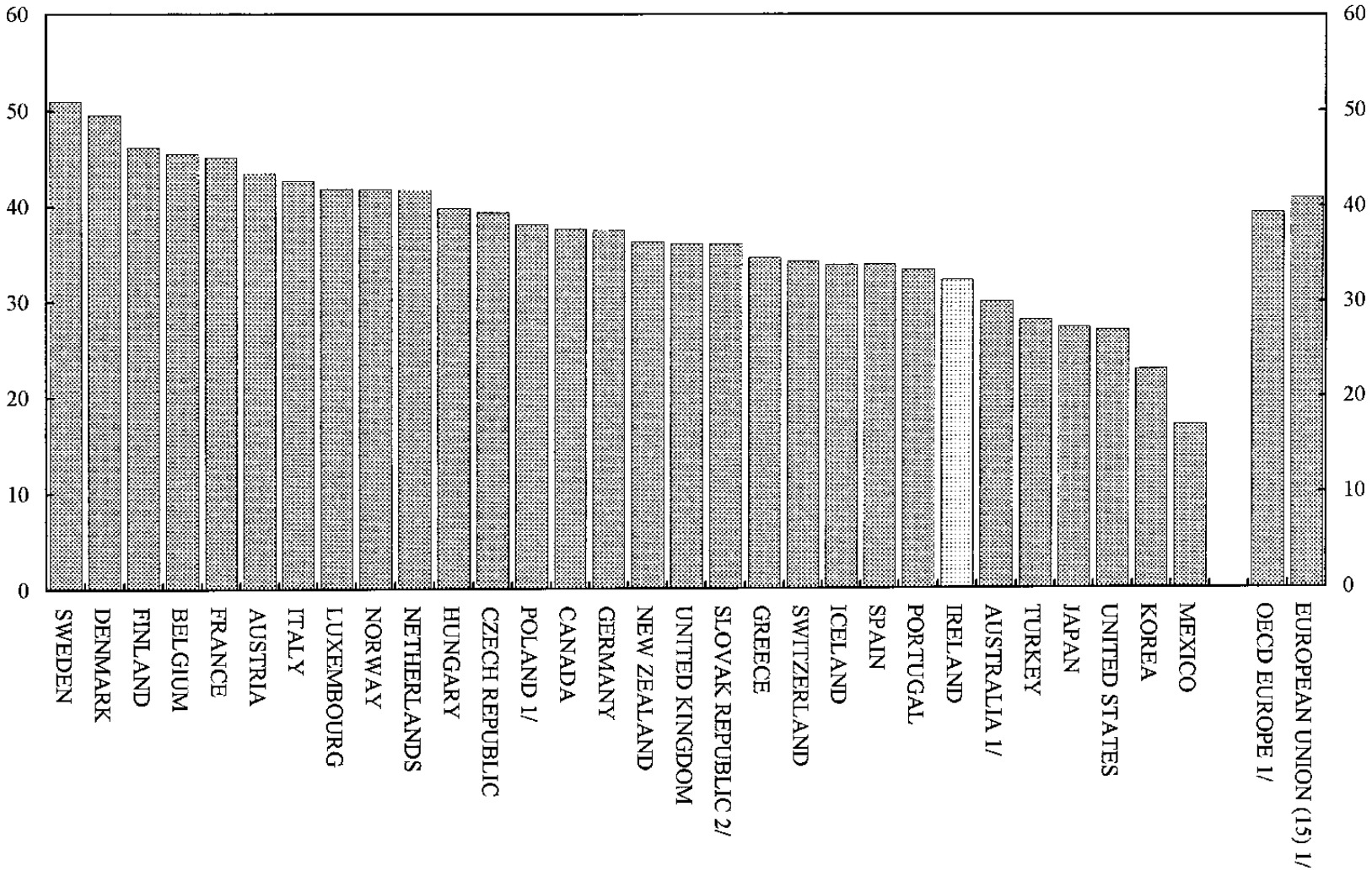
[1] Prepared by Mark Lutz.

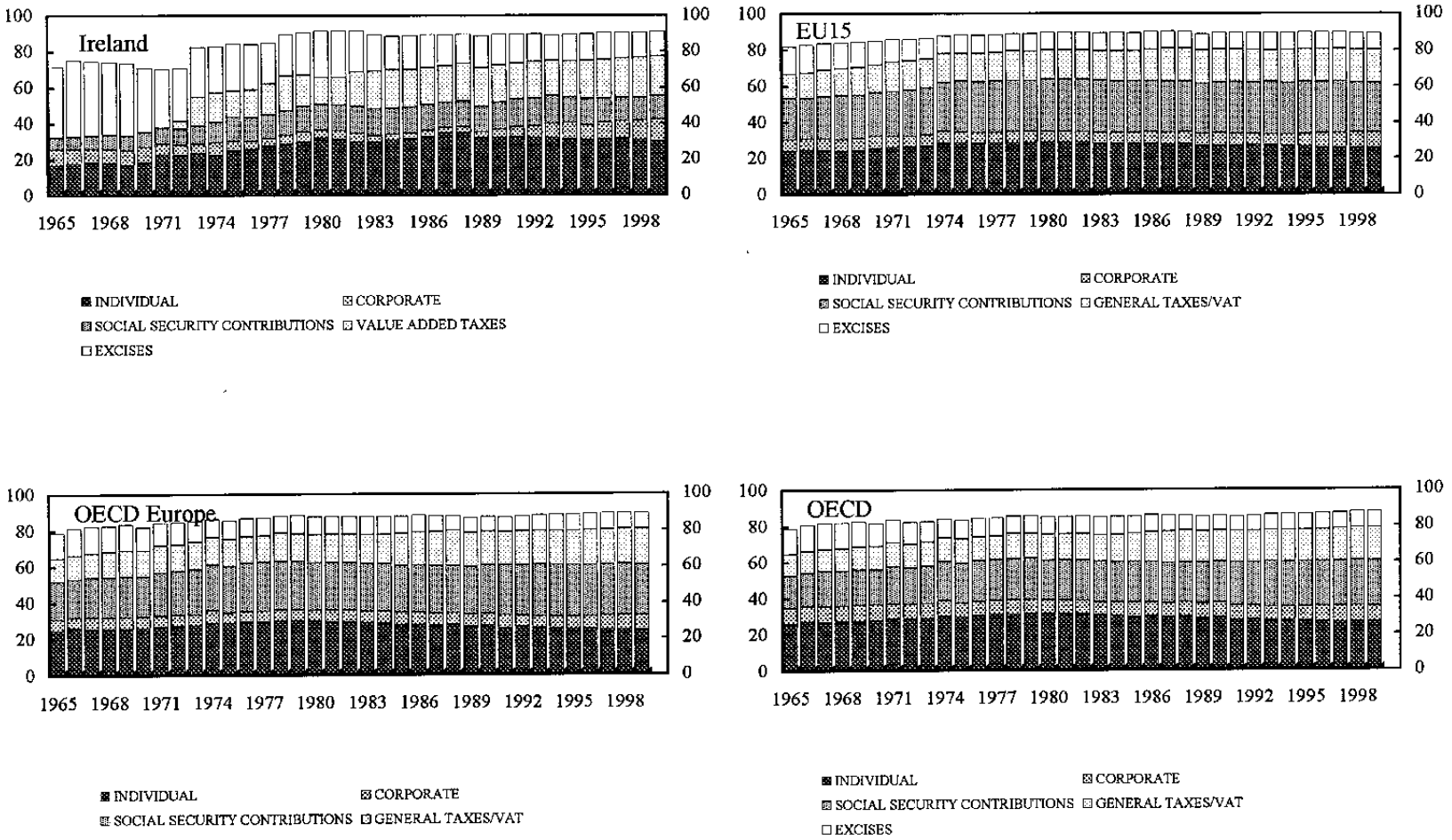
[2] See Lutz (1997), and references cited therein.

Figure 3.1. Ireland: International Comparisons of Tax Revenue, 1995–2000
(1995–2000 Averages; Percent of GDP)



Source: OECD Revenue Statistics.
1/ 1995–1999.
2/ 1998–2000.

Figure 3.2. Ireland: Tax Compostion—International Comparisons, 1965–1999
(Percent of Total Tax Revenue)



Source: OECD Revenue Statistics.

large excise revenues. Despite these differences, the five largest taxes, on households' and corporations' incomes, social insurance contributions, and general indirect taxes (including VAT) and excises account for about 90 percent of all tax revenues in Ireland and in the EU and OECD averages.

5. **Ireland's tax yield has varied substantially in recent decades** (Figure 3.3). Since the late 1980s, and following a sharp increase in the tax burden, Ireland has enjoyed a "virtuous circle" of economic prosperity, burgeoning revenues, declining government debt (as a share of GDP), and falling debt servicing costs. This has allowed for a reduction in the tax effort by about 6 percentage points of GDP in the last 15 years.

6. **This note uses the average effective tax ratios (AETRs) initially proposed by Mendoza, Razin and Tesar (MRT, 1994) to assess Ireland's tax effort from a cross-country perspective.** This approach has become increasingly popular as a proxy for effective marginal tax rates chiefly because of its simplicity: it uses internationally comparable national aggregate revenue data and proxies tax bases with internationally comparable national accounts data. Data sources and methodology underlying the AETR calculating are given in the Annex. Thus, it reflects actual revenue generated from potentially vastly different tax systems, effectively accounting for a multitude of details regarding various deductions, statutory tax rates, allowances and credits.

7. **The AETR approach, nevertheless, has a number of drawbacks as a proxy for effective marginal tax rates, which are thought to have a more important influence on economic decisions**.[3] Among the more important implicit assumptions, which may not hold, are: (i) that the taxes are borne by those paying them (i.e., not shifted to others); (ii) that the calculated (backward-looking) average tax rates are good proxies for expected future marginal tax rates; (iii) that national accounts-based tax bases are good proxies for actual bases (e.g., capital gains are included in many tax receipts, but not in national accounts tax bases, thereby overstating tax rates); (iv) and that loss carryforwards are not significant. Nevertheless, they remain a good "first brush" measure of economies' relative tax reliance. Subsequent work has suggested further refinements (see the references in footnote 3), but in most cases the variations in tax rates over time within a country, and relative country rankings over the most recent period using alternate tax estimates tend to be highly correlated.

Tax base comparisons and developments

8. **About 90 percent of Ireland's total tax revenues can be allocated to the three broad tax bases, labor, capital and consumption**. Therefore, differences in its tax effort over time, or compared to that of other economies, should largely reflect differences among,

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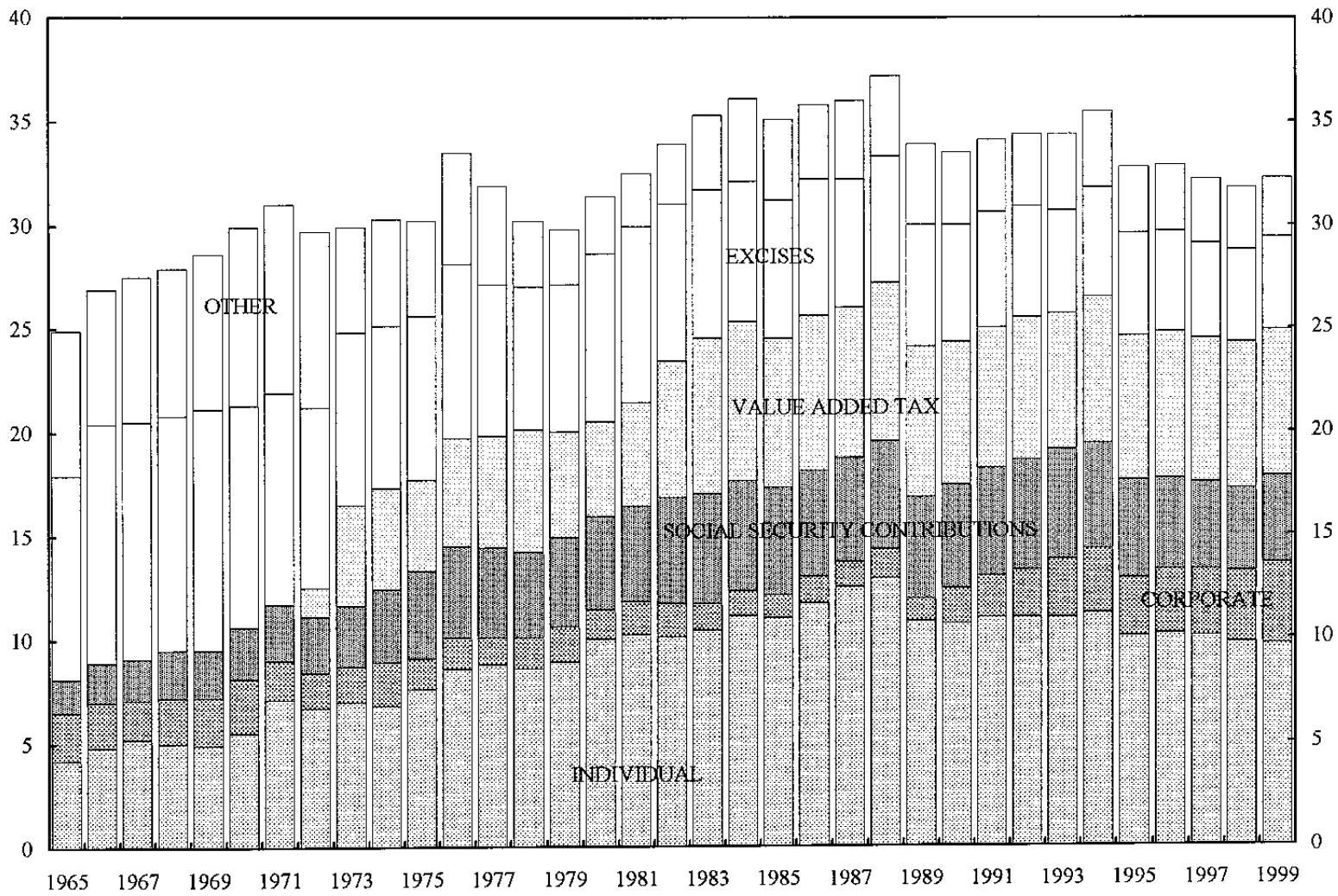
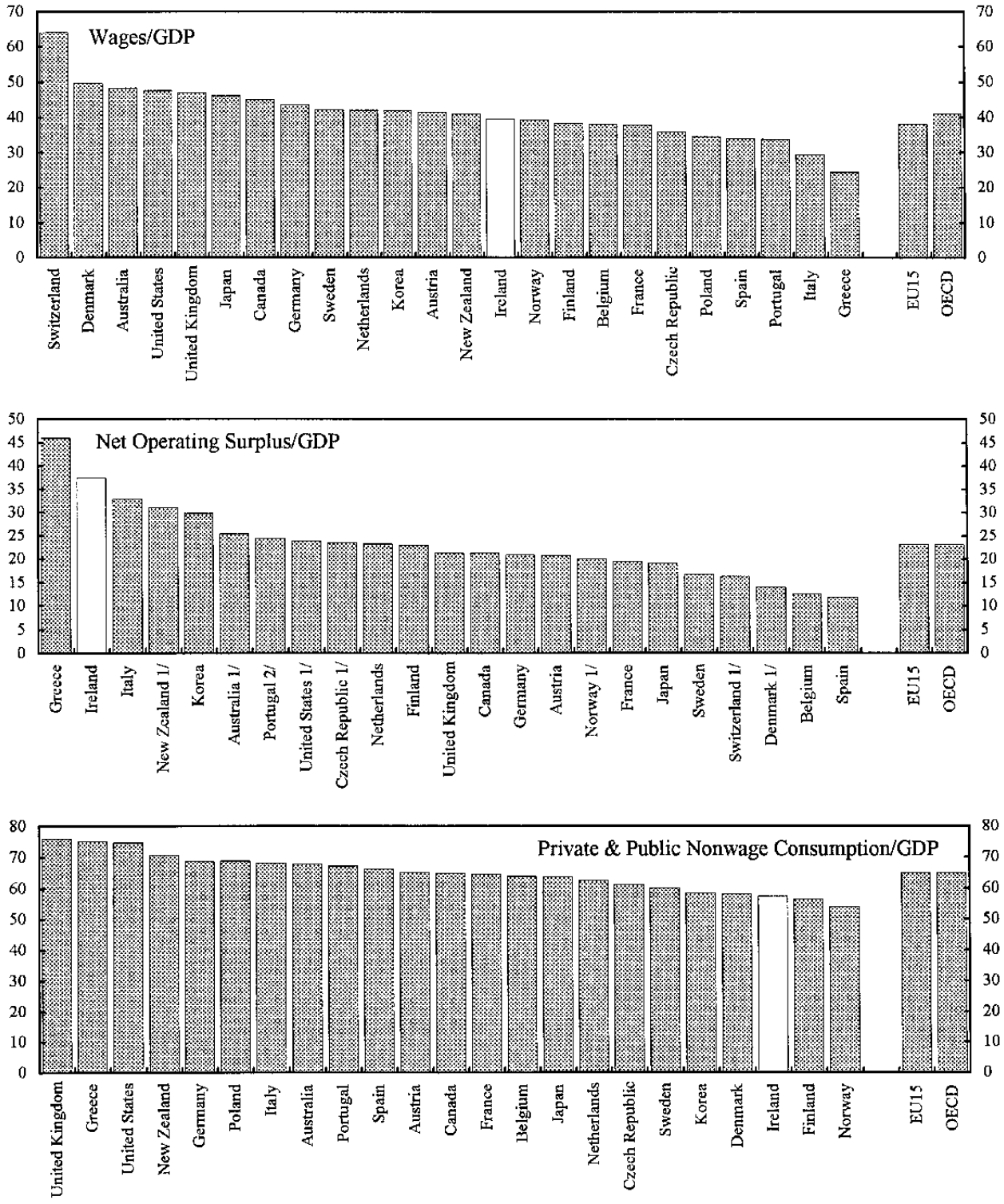
[3] These shortcomings, and attempts to overcome them, are dealt with more comprehensively in Carey and Tchilinguirian (2000), OECD (2000), and Carey and Rabesona (2002).

Figure 3.3. Ireland: Tax Revenue, 1965–1999
(Share of GDP)



Source: OECD Revenue Statistics.

Figure 3.4. Ireland: Relative Tax Bases—International Comparisons
(1996–2000 Averages)



Sources: Carey and Robesona (2002); OECD (2001); and staff calculations.
1/ 1996–1999.
2/ 1996–1998.

and changes in, the size of these component tax bases and average effective tax rates. As seen in Figure 3.4, Ireland's wage share of GDP is roughly equal to the EU average and slightly below the OECD average. In sharp contrast, Ireland's net operating surplus as a share of GDP is second only to Greece's among OECD countries, and more than 10 percentage points of GDP (or well over one standard deviation) above the EU15/OECD averages. This largely reflects the growing importance of foreign direct investment activity in Ireland over the past decades. Foreign factor incomes (the overwhelming bulk of which are returns to capital) accounted for more than 13 percent of GDP during 1996–2000.[4] Ireland's consumption tax base is among the smallest in the OECD (and slightly more than one standard deviation below the EU15/OECD averages); likely reflecting the low economic share of household incomes (comprising an average wage share and a relatively low share for unincorporated operating surpluses), as well as a relatively small government.[5]

9. **Ireland's main tax bases have shown surprising variation over time** (Figure 3.5). Broadly speaking, capital's income share has increased at the expense of labor, to the point where they are now about equal at slightly less than 40 percent of GDP each, compared to labor's share being two-thirds larger than capital's share twenty years ago. The share of private and public non-wage consumption has declined as a share of output. These patterns are also apparent, though somewhat attenuated, when expressed as a share of GNP.[6] However, it should be noted that because foreign direct investment can be taxed, GDP rather than GNP is the appropriate tax base.

10. **On the basis of the relative size of Ireland's major tax bases, and assuming that its tax rates were comparable to those of other countries, one would likely expect that Ireland's tax yield would fall somewhere in the middle**. While its wage share of GDP was broadly comparable to the OECD average, its net operating surplus was among the highest, and its consumption share was among the lowest. However, its actual tax effort depends upon its relative AETRs, and their interaction with the relative tax bases.

Tax rate comparisons and developments

11. **As noted, effective tax rates reflect the complicated interaction of statutory tax rates, as well as various exemptions, allowances, deductions and credits**. Figure 3.6

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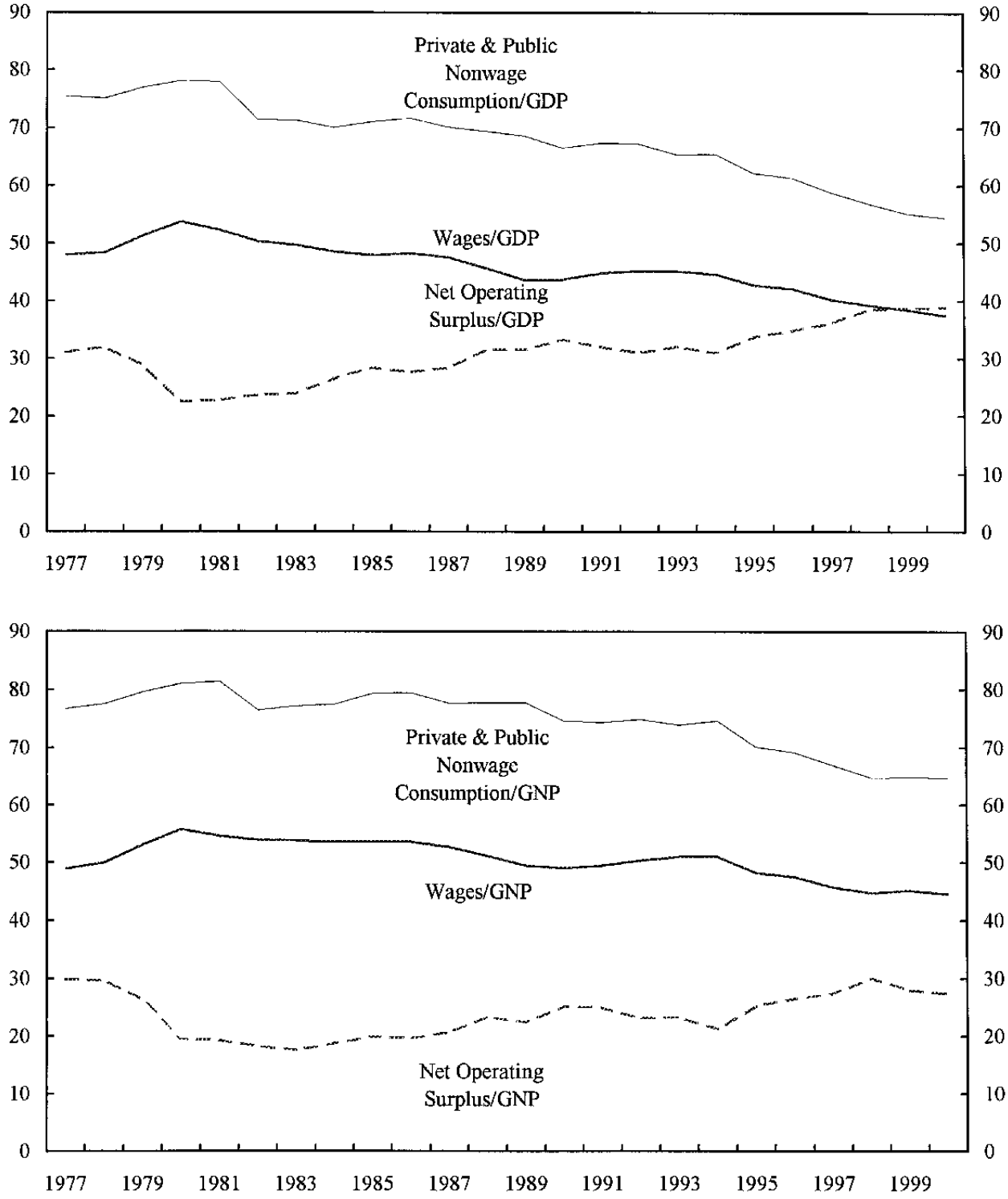
[4] See Honahan and Walsh (2002) for a fascinating discussion of the increasing role of foreign direct investment in Ireland.

[5] Private consumption as a share of GDP in Ireland averaged 51.6 percent, 8th lowest of 25 OECD countries for which data are available, and slightly less than one standard deviation below EU15 and OECD average of 56.6 and 56.9 percent of GDP, respectively.

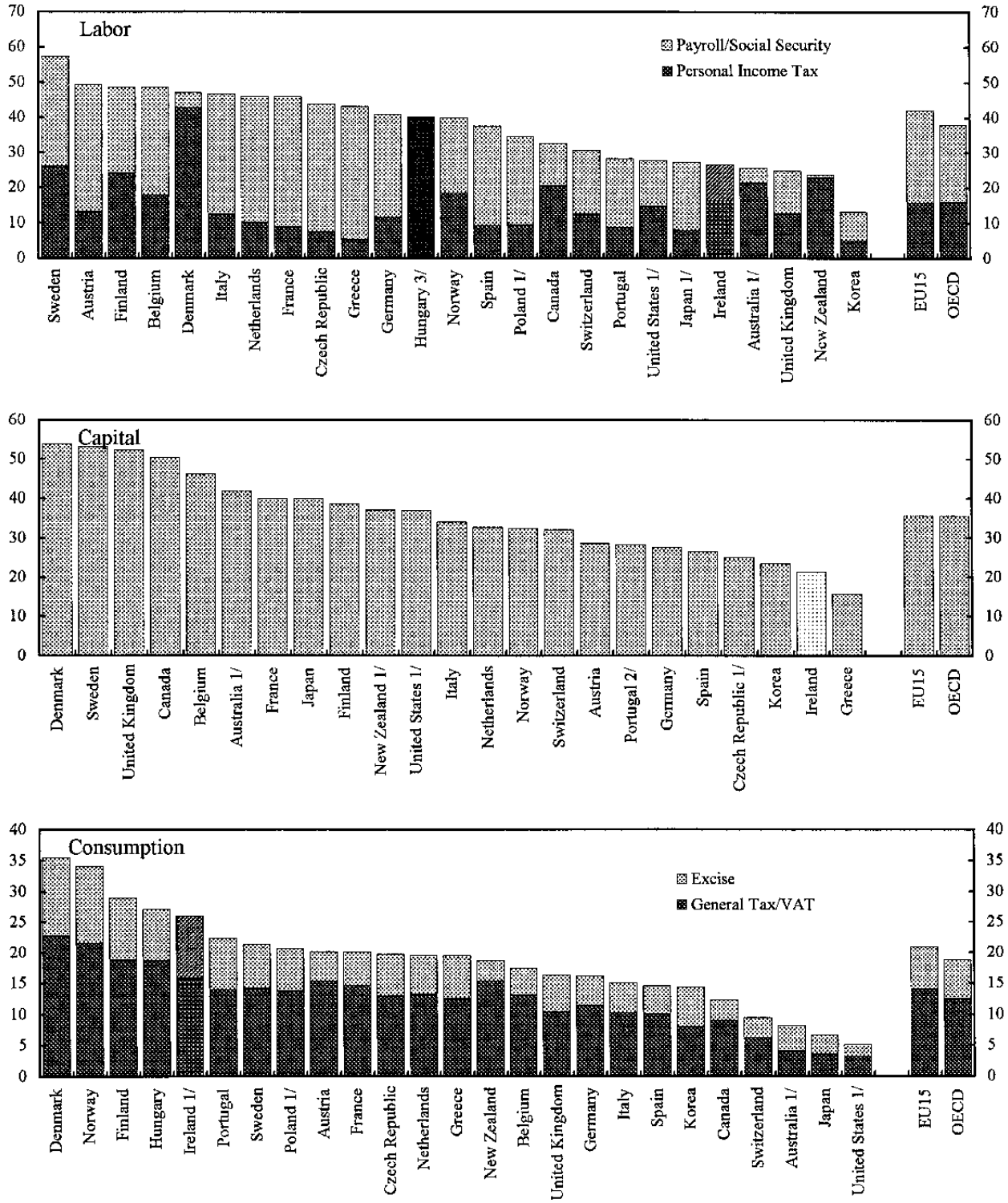
[6]Income shares other than wages and net operating surplus (namely, employer-paid social security contributions, depreciation, and indirect taxes less subsidies), have remained constant at about 25 percent of GDP, and 27 percent of GNP.

Figure 3.5. Ireland: Tax Base Developments, 1977–2000



Sources: OECD; and staff calculations.

Figure 3.6. Ireland: Average Effective Tax Ratios—International Comparisons
(1996–2000 Averages)



Sources: Carey and Robesona (2002); and staff calculations.

1/ 1996–1999.

2/ 1996–1998.

3/ Split between personal income tax and payroll tax/social security contributions not available.

compares Ireland's average effective tax rates, based on the original MRT (1994) equations (as discussed in the Annex), with those of other OECD economies (and separates the AETRs on labor and consumption into its major components). Other, more sophisticated estimates of AETRs are found to suggest broadly comparable levels, patterns, and relative tax rates across countries.[7]

12. **The results suggest that Ireland taxes direct income from both labor and capital comparatively lightly, while taxing consumption relatively heavily**. Its low rate of labor income taxation (more than one standard deviation below both EU and OECD averages) reflects mainly low social insurance contributions which, abstracting from those countries that do not have payroll-financed social security systems (Australia and New Zealand), is among the lowest in the OECD. However, Ireland's social security contributions are not far out of line with those of countries like the United States and the United Kingdom which, like Ireland, have low social security expenditures compared with continental European countries. More recently, Ireland has further cut personal income taxes, broadened the zero-and lower-rate brackets, reduced the upper rate to 42 percent, and introduced individualization of taxation. Ireland's low rate of capital income taxation has been an explicit policy choice, which has resulted in a statutory and effective tax rate far less than international averages, but has yielded—aided especially by large foreign direct investment—revenue comparable to those of other OECD economies (Figure 3.2). Ireland's average effective consumption tax share, in contrast, is among the highest of OECD economies (slightly less than one standard deviation above country averages). While VAT effective rates are close to EU averages, excise efforts are more ambitious.[8]

13. **Ireland's AETRs have varied somewhat over time, but taxes on labor and capital have been broadly stable since the mid-1980s** (Figure 3.7). Taxes on labor and consumption both rose in the early 1980s, and the latter, after falling somewhat over the next

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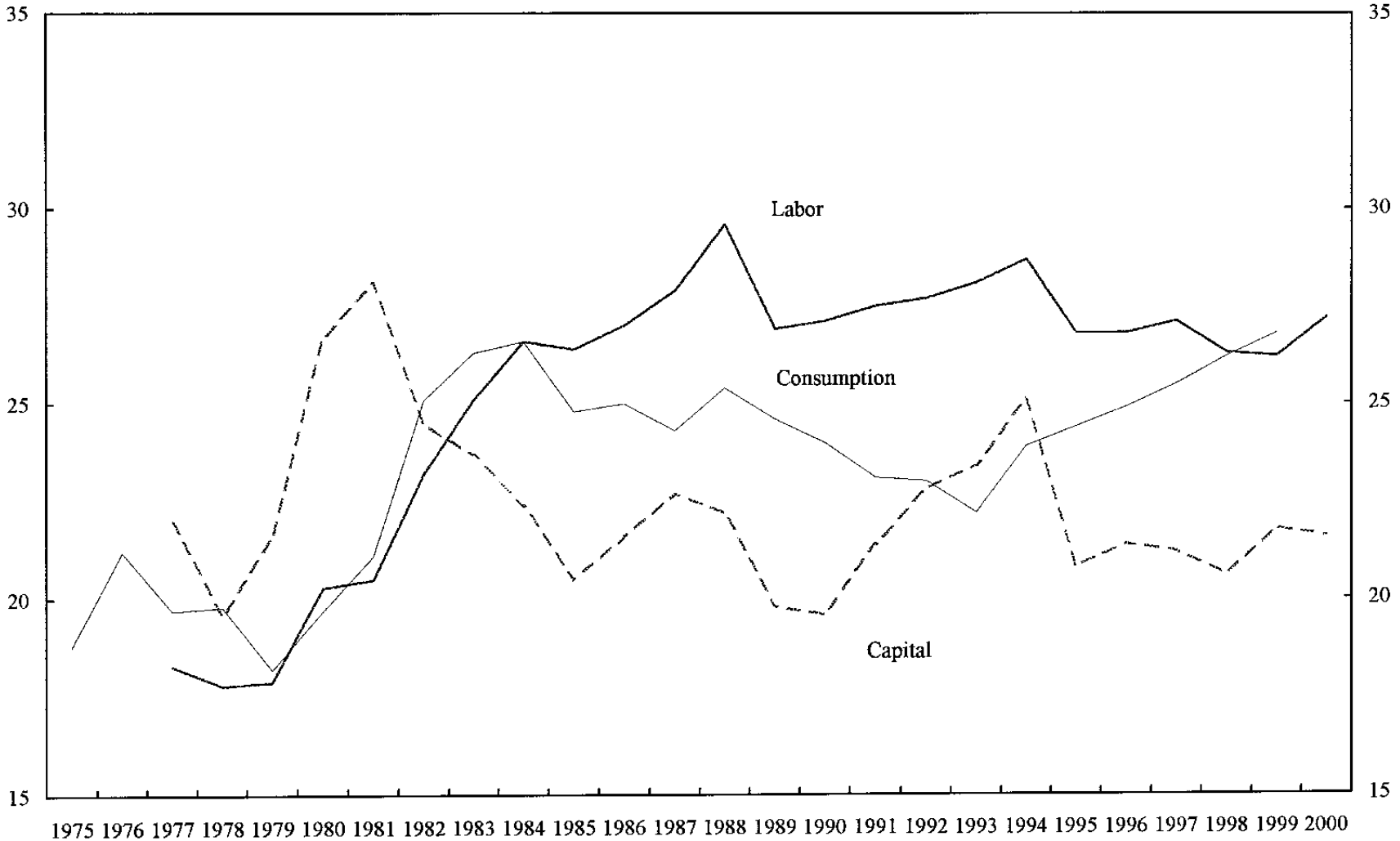
[7] Alternative measures of AETRs, incorporating increasingly realistic, albeit somewhat more complicated, allocations of aggregate tax revenue and national income components, have been suggested by Carey and Rabesona (2002), Carey and Tchilinguirian (2000), and OECD (2000). Carey and Rabesona report that the correlation coefficients between their baseline and MRT's AETR estimates are for the vast majority of countries, including Ireland, 0.8 or greater. Moreover, the Spearman rank correlation coefficient estimates of the tax rates based on MRT's 1996–2000 averages and Carey and Rabesona's baseline rates were 0.94 for both labor and consumption, and 0.89 for capital. This further suggests that Ireland's tax rate position relative to OECD partners is robust to alternate tax measures.

[8] Ireland's effective VAT tax rate for 1996–1999 was 15.8 percent, compared to an 14.0 percent EU average, within one standard deviation (of 3.5 percentage points). In contrast, its average effective excise rate was 10.2 percent, compared to a 6.9 percent of the EU average, with a standard deviation of 2.6 percentage points.

Figure 3.7. Ireland: Average Effective Tax Ratios, 1975–2000



Sources: Carey and Rabesona (2002).

decade, has been rising again since the early 1990s. Similar patterns were seen in Carey and Rabesona's AETRs as well.

Interaction of Ireland's tax bases and AETRs

14. **The "hump-shaped" patterns in Ireland's tax effort can be seen in terms of developments in its tax bases and AETRs**. The rising tax effort between the late 1970s and mid-1980s reflects rising AETRs on consumption early on and on labor throughout. This resulted from the authorities' efforts to halt a deteriorating fiscal situation and consolidate the public accounts. Remarkably enough, it also occurred at a time in which both the wage and consumption tax bases were declining as shares of GDP. Subsequently, labor's broadly constant AETR combined with a continued relative decline in the wage share led to a reduction in personal income and social insurance contributions as a share of total revenues and as a share of GDP (Figures 3.2 and 3.3). In contrast, capital's AETR fell sharply during the early 1980s, just as labor's AETR rose markedly. The rising importance of net operating surplus in the economy combined with a subsequently stable AETR on capital increased the share of corporate income taxes in total revenues and as a share of GDP. However, it should be noted that while labor and net operating surplus have now roughly equal shares of GDP, the latter's relatively low AETR implies that it contributes less to total revenues and to the overall tax effort. The share of total revenues provided by the VAT and excises has been relatively constant over the last decade (although declining as a share of GDP), as a rising AETR has offset a declining consumption share in GDP.

C. Selected Taxes in Ireland: Some Stylized Facts

15. **This section provides background on three areas identified in the staff report from which increased revenues could be obtained**: (i) reducing tax expenditures (e.g., limiting personal income tax deductions, including those for mortgage interest payments); (ii) unifying the VAT rate; and (iii) introducing a local property tax.

16. **The personal income tax has recently undergone a number of reforms**, extending the zero- and lower-rate brackets, lowering statutory rates, and introducing individualization of tax liabilities, which have significantly reduced the exceptionally progressive nature of the personal tax structure and increased work incentives (OECD 2001). A number of tax exemptions, allowances and credits exist, but their impact on revenues is difficult to judge without a comprehensive assessment of tax expenditures. Nevertheless, tax credits against mortgage interest payments may be a potentially significant tax expenditure. Given concerns about the impact of an immediate elimination of this credit on housing prices, the credit could be frozen in nominal terms or phased out over a period of years. This would, however, limit its revenue impact.

17. **Ireland administers a VAT system with a relatively high standard rate**, at 21 percent, a 12½ percent lower rate and a zero rate bracket. The standard rate applies to about one-half of all private consumption, yielding about two-thirds of revenues, while the lower rate covers almost 40 percent of consumption and yields the remaining one-third of

revenues. The zero rate applies to a relatively broad category of goods, including food, oral medicine and children's clothing, covering about 10 percent of total expenditures. Ireland's effective VAT rate, defined as the ratio of the actual VAT revenue to that which would obtain from applying the statutory rate to the consumption base, is about 60 percent, placing it in the middle of EU and OECD efforts (OECD 2001).

18. **Although Ireland's average effective tax rate on consumption is already relatively high, increased effort in this area could be achieved with likely fewer distortions than would result from higher direct taxation**. As an (unrealistic) upper bound, a static calculation of unifying all VAT rates at the standard rate suggests that revenues could be increased by about one-third, or about 3 percentage points of GDP. More realistically, unifying the rate at a lower standard rate (with adjustments made as well for excise rates, where necessary) would generate additional revenues and be less distortionary than the present system. Aside from a temporary impact inflation rate price level, there would be two arguments against unifying the rates. First, there may be concerns about the potential regressive nature of a single rate VAT. However, such concerns need to be weighed against the argument that zero rating is usually a highly inefficient way to address equity concerns. Although zero-rating has a proportionally larger impact on lower income households, the benefits in absolute terms accrue mainly to upper-income groups, given their larger absolute expenditures on zero-rated items compared with lower income households (see Ebrill and others, 2001). It would in fact be more efficient to offset any adverse effects on the poor directly through targeted transfers, including possibly through the use of earned income tax credits. Second, given VAT zero-rating on similar items in the United Kingdom, there is the possibility of revenue leakages from increased or reverse cross-border purchases.

19. **Ireland's local tax effort, generating just two percent of total tax revenue, is second lowest of all OECD economies**, and well below an unweighted average of 13.3 percent of all revenues among unitary (i.e., nonfederal) fiscal systems (OECD 2001). The benefits to greater local authority in revenue generation are well known, including greater accountability to local citizens and greater potential flexibility in setting the level of public services in light of local preferences. As local taxes are also often in the form of property taxes, preferences regarding tax progressivity could also be incorporated.

CALCULATION OF THE AVERAGE EFFECTIVE TAX RATIOS (AETRS)

In order to calculate the AETRs on capital, τ_k, and on labor, τ_l, it is necessary to calculate the AETR on total household income, τ_h. This is then used to allocate total household personal income tax revenues to labor and capital, assuming the same average household tax rate applies to both. The household AETR is calculated as follows:[9]

(1) $\tau_h = 1100/(OSPUE + PEI + W)$

This states that the average effective household tax rate is the ratio of personal income taxes paid (OECD Revenue Statistics code 1100) to the sum of operating surpluses of private unincorporated enterprises (OSPUE), property income (PEI) and wages (W).

The effective tax rate on labor, τ_l, can then be calculated as follows:

(2) $\tau_l = (\tau_h * W + 2000 + 3000)/(W + 2200)$

where the taxes include personal income taxes paid on wages (at the average household rate), total social security contributions (2000) and payroll and workforce taxes (3000). The denominator contains employers' gross labor costs, including wages as well as employer-paid social insurance contributions (2200).

The effective tax rate on capital, τ_k, is calculated as follows:

(3) $\tau_k = [\tau_h * (OEPUE + PEI) + 1200 + 4100 + 4400]/OS$

The first term in the numerator accounts for personal income taxes allocated to capital (note that this assigns all income from unincorporated enterprises to capital). The second, third and fourth terms include direct corporate income taxes (1200), recurrent taxes on immovable property (4100) and taxes on financial and capital transactions (4400), respectively. The denominator is the economy's total (net of depreciation) operating surplus.

Finally, the effective tax rate on consumption, τ_c, is calculated as follows

(4) $\tau_c = (5110 + 5121)/(CP + CG - CGW - 5110 - 5121)$

where the numerator includes both general taxes on goods and services (5110), as well as specific excises (5121). The denominator includes the both private and government non-wage purchases of goods and services, net of taxes paid on these items, to reflect the tradition of expressing the tax rate as a share of the base price of the items excluding taxes.

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[9] The terms used in the following expressions are listed in the table on the following page.

VARIABLE NAMES AND SYMBOLS USED

OECD Revenue Statistics

1100 = Taxes on income, profits, and capital gains of individuals

1200 = Taxes on income, profits, and capital gains of corporations

2000 = Total social security contributions

2200 = Employers' social security contributions

3000 = Payroll and workforce taxes

4100 = Recurrent taxes on immovable property

4400 = Taxes on financial and capital transactions

5110 = General taxes on goods and services

5121 = Excises

National Accounts

CP = Private final consumption expenditures

CG = Government final consumption expenditures

CGW = Compensation of employees paid by producers of government services

OS = Total (net) operating surplus of the economy

OSPUE = (Net) Operating surplus of private unincorporated enterprises

PEI = Households' property and entrepreneurial income

W = Wages and salaries

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IV. Ireland's Financial System—Structure and Performance[1-2]

1. This paper discusses **indicators of financial system soundness** based on official data and publications, as well as discussions with the authorities. Following a description of the structure of the banking system in Ireland, the paper examines indicators on the vulnerability and solvency of the financial system and concludes with a brief description of supervision arrangements.

A. Structure of the Financial System

2. Ireland's **banking system** comprises banks and building societies, the latter whose role has been gradually declining. The broader **financial system** includes, in addition, a variety of nonbank financial institutions, including: Collective Investment Schemes (mutual funds); investment intermediaries such as securities trading companies and portfolio management companies; exchanges and their member firms; and insurance and leasing companies. As described in the Central Bank of Ireland's *Annual Report 2000*, a **deposit protection scheme** provides coverage of 90 percent (including on nonresidents' deposits) up to a maximum of €20,000. The fund is paid for by banks and administered by the Central Bank. No compensation has been paid to date under this scheme. A similarly organized **investor compensation scheme** was established in 1998. In the event an investment firm (e.g., stockbrokers, investment and insurance intermediaries) is unable to meet its obligations, the fund will pay out 90 percent of the amount invested by a client up to a maximum of €20,000. The scheme is funded by contributions from investment firms and is overseen by the Investor Compensation Company Ltd., a separate legal body independent of, but supervised by, the Central Bank.

3. **Following rapid growth in the number of banking institutions in the mid-1990s, the system has stabilized in recent years** (Table 4.1). There is a large presence from foreign banks, operating primarily in the International Financial Services Center (IFSC).[3] However,

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[1] Prepared by Mark Lutz.

[2] This note updates "Structure and Performance of the Financial Sector," Chapter V of *Ireland: Selected Issues and Statistical Appendix*, IMF Staff Country Report No. 99/108, October 1, 1999.

[3] The IFSC, established in 1987, has developed into a significant center for a wide range of internationally traded financial services. The distinguishing feature from the rest of the financial system is qualification for tax advantages including a reduced (10 percent) rate of corporate taxes, relief from local municipal taxes, and tax relief for capital expenditure and rents on property. However, this distinction will disappear beginning in 2003 with the harmonization of all corporate tax rates at 12½ percent (with a grandfathering until 2005 of the 10 percent rate for projects begun before 1998). No distinction is made between domestic and offshore operations from a regulatory point of view. There are currently about 490 stand-alone projects in operation at the IFSC, employing in excess of 11,000 people.

their role in the domestic market has so far been limited as they have been mainly involved in dealings with nonresidents.

Table 4.1. Ireland: Structure of the Banking System

	1998	1999	2000	2001
Number of banks:	57	56	54	55
Majority state-owned (as a percent of total assets)	4	3	2	0.7
Majority foreign-owned (as a percent of total assets)	42	37	39	42
Foreign branches (as a percent of total assets)	16	14	13	12
Number of banks accounting for:				
25 percent of total assets	3	3	3	3
75 percent of total assets	23	23	23	21
Nonbank deposit-taking institutions 1/	3	3	3	3
Percent of total assets	4.3	3.4	2.9	3.0
Percent of GDP	12.5	13.6	12.0	12.8

Source: The Central Bank of Ireland.
1/ Building societies.

4. **The banking system is highly concentrated.** As indicated by Table 4.1, 25 percent of total assets is concentrated in only three banks.

B. Indicators of Vulnerability

5. **The assets of the banking system have grown rapidly in the last few years** (Table 4.2). Total banking system assets increased by about 100 percentage points of GDP in the four years up to end–2001, mainly because of the growth of IFSC business with non-residents. **Private sector credit has also grown rapidly,** albeit at a much slower pace. During 1998–2001, the ratio of credit to the nongovernment sector to GDP increased by slightly more than 20 percentage points, although the growth rate has been on a declining trend.

6. Growth in lending was backed in part by relatively **strong expansion in deposits**, although they increased far less sharply than assets and remained broadly stable as a share of GDP since 1999. Much more important has been an explosive growth in money market liabilities, largely to nonresidents, which were virtually nonexistent in 1999 and totaled over 90 percent of GDP in 2001. Central Bank lending to credit institutions rose markedly in 2000–01 to about 11½ percent of GDP for structural reasons related to the move to a single European monetary policy. These credits were to foreign-owned IFSC institutions, whose parent companies were monetary policy counterparties of other central banks, prior to the introduction of the euro, and who now operate within the integrated euro area.

7. **The foreign (non-euro) currency-denominated asset and liability positions remained closely matched.**[4] Despite the adoption of the euro, the share of foreign currency-denominated assets and liabilities has increased slightly in recent years.

Table 4.2. Ireland: Assets and Liabilities of the Banking System

	1998	1999	2000	2001
Total assets as a percent of GDP	266.9	340.1	343.4	365.7
Foreign currency-denominated				
Assets (as a percent of total assets)	n.a.	41.0	41.5	44.6
Liabilities (balance sheet/ as a percent of total assets)	n.a.	42.8	44.4	47.4
Total loans to non-government sector (as a percent of GDP)	89.6	103.6	107.5	112.2
Housing mortgage finance (share of total domestic bank loans)	40.7	39.7	39.0	38.8
Other housing finance (share of total domestic bank loans)	1.0	0.9	1.0	0.9
Other personal lending (share of total domestic bank loans)	12.4	13.0	12.2	12.5
Commercial property lending (share of total domestic (domestic bank loans, excluding financial intermediation) 1/	15.7	18.2	20.5	21.6
Contingent and off-balance sheet accounts (percent of total assets)	413.5	400.5	465.0	591.8
Total deposits, excluding interbank (as a percent of GDP)	118.4	110.9	111.2	113.5
Central Bank credit to banks (as a percent of GDP)	2.9	5.7	8.1	11.4

Source: The Central Bank of Ireland.
1/ Includes lending for construction, hotels and restaurants, real estate activities.

8. **Personal sector credit has contributed an average of 35 percent of total private sector credit growth in 2000–01**. It grew by 16.2 percent in 2001, just slightly lower than the 17.8 percent growth experienced in 2000. Personal sector credit increased from 71 percent to 73 percent of disposable income in these two years. This measure is dominated by housing finance but remains relatively low, in comparison to some other OECD countries.[5] Nevertheless, domestic banking system exposure to the property sector remains

[4] Although no limits are imposed on open position in foreign currencies, capital adequacy requirements are imposed on open foreign exchange positions. Off-balance sheet items are included in the calculation of the open position.

[5] According to the OECD *Economic Outlook* No. 70 (Dec. 2001), mortgage credit outstanding as a percentage of annual disposable income in Ireland was 55.5 percent at end-2001, compared to 55 percent in France, 71 percent in Germany, and 108 percent in the United Kingdom.

high, at about 60 percent of total loans. While credit institutions have somewhat reduced their exposure to household mortgages, their exposure to commercial property has risen. The continued high growth in credit to the private sector and, in particular, to the personal sector has prompted the Central Bank to express concerns on a number of occasions.

9. **There appears to be substantial activity related to derivatives**, with total contingent and off-balance sheet accounts amounting to almost 600 percent of total assets in 2001.[6] The bulk of the derivatives seems to comprise foreign exchange and interest swaps and the amount of complex transactions is apparently not large. The central bank requires institutions to have proper procedures and measurement systems in place for derivative activities and imposes capital requirements on such activities in line with best international practices.

C. Indicators of Profitability and Solvency

10. **Despite recent decreases, profitability remains relatively high by international standards**. However, the average pre-tax returns declined from 1.5 percent in 1998 to 0.9 percent in 2001, in part reflecting increased competition, and in 2001 an economic slowdown and some one-off events (including restructuring costs and contributions to Tier I capital, Table 4.3).

11. Notwithstanding rapid growth in lending, **domestic credit institutions remain, on average, adequately capitalized**. The average domestic risk-weighted capital-asset ratio was 10–11 percent during 1998–2001, with much higher average capital-asset ratios when foreign banks are included.[7]

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[6] The reporting of off-balance sheet items is in accordance with the provisions of the EU solvency ratio and capital adequacy Directives, which set out requirements in relation to calculating the credit equivalent amount and application of applicable risk weightings to capture credit and market risks. In the case of interest-rate and foreign exchange related items these are marked-to-market in determining the appropriate credit equivalent. The credit equivalent amounts of these accounts has averaged 8–9 percent of total assets during 1998–2001.

[7] In early 2002, AIB reported a loss of $691 million due to fraudulent trading at its subsidiary U.S. Allfirst Bank. Upon discovery of these events, the parent bank immediately estimated the losses and informed the regulatory authorities in both countries and the markets about the situation. In the event, the financial stability of the AIB group is not in question, with only a temporary dip in the risk-weighted capital adequacy ratio. In addition, the U.S. subsidiary and parent bank have worked closely with the U.S. Federal Reserve in investigating the events and resolving outstanding legal and regulatory issues.

Table 4.3. Ireland: Indicators of Profitability

	1998	1999	2000	2001
Average pretax return on total assets (in percent)	1.5	1.3	1.2	0.9
Average pretax return on equity (in percent)	26.0	23.0	23.0	16.0
Risk-weighted capital/asset ratio: all banks	37.9	23.5	21.3	24.2
Risk-weighted capital/asset ratio: domestic banks	11.0	10.4	9.7	11.2
Overall stock market price index	4,956	5,018	5,723	5,707
Bank stock price index	10,378	6,371	7,864	8,035

Source: The Central Bank of Ireland.

12. Credit institutions are expected to review their **asset quality** at least on an annual basis (Table 4.4). For assets with deteriorating quality, this review should take place quarterly. No standard asset quality criteria are applied, but the Central Bank expects each institution to assess the quality of its loan book on a conservative basis—rating and scoring systems are encouraged. Asset quality and the systems used to assess them are subject to review by supervisors during on-site inspections. Aggregate data on **nonperforming loans** show a reduction in the ratio of nonperforming loans to total lending. This indicator, however, tends to lag the economic cycle and, hence, would not necessarily capture the quality of the portfolio in the event of an adverse shock, or an economic downturn.

Table 4.4. Ireland: Provisioning Against Bad Loans

	1998	1999	2000	2001
Nonperforming loans, substandard or lower quality (percent total loans)	2.5	1.8	1.9	1.9
Total provisions for loan losses (percent of nonperforming loans):	90.3	110.4	106.1	110.8
Specific provisions	35.1	41.5	39.9	42.0
General provisions	44.5	59.0	57.4	57.6
Interest suspense accounts	10.7	9.9	8.8	11.2
Total provisions for loan losses (percent of total loans):	2.2	2.0	2.0	2.3
Specific provisions	0.9	0.7	0.7	0.8
General provisions	1.1	1.1	1.1	1.1
Interest suspense accounts	0.2	0.2	0.2	0.4

Source: The Central Bank of Ireland.

13. Total **provisions** against bad loans comprise specific and general provisions, and interest suspense accounts. Specific provision is made against a loan or other receivable, when the estimated repayment is likely to fall short of the balance. General provision is made in relation to latent losses which, although not specifically identified, are known to be present in any portfolio. Interest suspense accounts arise when an institution, having identified non-performing assets, considers it imprudent to continue crediting its income statement with doubtful receivables, but wishes for internal purposes to monitor such flows. The Central Bank can request institutions to increase the level of provisions if it is deemed inadequate. Since 1998, total provisions, and their components have increased as a share of nonperforming loans, but remained stable as a share of total loans.

D. Supervision

14. The **Central Bank** has full responsibility for the supervision and regulation of the banking system and most non-bank financial institutions and exchanges, including those operating within the IFSC, and also, from April 1, 2001, insurance and assurance intermediaries (totaling 6,010 institutions, of which 2,870 are authorized collective investment schemes, including sub-funds, 2,485 are retail insurance intermediaries and authorized advisors, and 87 are banks). The **Minister of Finance** has a statutory role in specified circumstances (e.g., with regard to the refusal to grant a banking license or to the revocation of a banking license or acquisition of banks with significant assets in Ireland). Insurance and assurance companies, including those based in the IFSC, remain subject to statutory regulation by the **Minister of Enterprise, Trade and Employment**. A bill to introduce a unified financial services supervisory authority was introduced to parliament in April 2002.

15. The **legislative basis** for the Central Bank's supervision comprises 14 domestic statutes and 15 EU directives (codified under a single directive in 2000) that together provide a modern supervisory framework. The 2000 Financial Sector Assessment Program found that Ireland complies, or largely satisfies the necessary criteria for compliance, with international codes and standards for financial sector supervision. All relevant EU directives on banking regulation and supervision have been implemented[8] In certain circumstances, supervisory decisions may be subject to appeals procedures or judicial review by the High Court.

16. **The objectives of supervision,** as stated by the Central Bank, are to protect the stability of the banking and financial system and to provide a degree of protection to the consumer of financial services. The prevention of commercial failures is not an objective of

[8] In addition, Revised Guidance Notes for credit institutions relating to money laundering were issued in November 2001. Following the events of September 11, a set of eight special recommendations on terrorist financing were agreed by the international Financial Action Task Force (FATF). The Central Bank subsequently advised financial institutions in Ireland of these recommendations, and the government is preparing enacting legislation.

regulation, rather the aim is to set down parameters governing risks that banks take and the provisions and capital charges made against such risks. The bank carries out its supervisory responsibilities through the authorization of new entities, and ongoing supervision of existing entities.

17. The **licensing/authorization process** is fundamental to supervision as the process seeks to prevent the establishment of unsuitable financial institutions in Ireland. Where necessary, detailed supervisory requirements are imposed at the time of authorization. The Central Bank has the exclusive authority to license banks, although when a license application is refused or an existing license is revoked, the consent of the Minister of Finance is required. Written licensing guidelines are provided in the *Licensing and Supervision Requirements and Standards for Credit Institutions* issued by the Central Bank.[9]

18. The approach to **ongoing supervision** is tailored to reflect the risks associated with each type of institution and activity. A range of supervisory techniques, both quantitative and qualitative, is used.[10] These include: quantitative techniques (including meeting various required financial ratios); regular mandatory reporting; regular review meetings with senior managers of supervised entities; required internal control systems and procedures (although with discretion regarding how these are structured and implemented); and periodic on-site inspections. Finally, the Bank has discretion regarding the action to be taken when prudential standards are breached, although in certain cases, the law obliges specific actions.

19. Supervisors also rely on banks' **external auditors,** who have specific obligations under the law. While external audits of prudential returns are not specifically required, external auditors have a statutory duty to report to the Central Bank if, during the course of their audit, they believe that there are material inaccuracies or omissions in returns to the Bank. External audits are required on banks' annual financial statements, and any material inaccuracies in or omissions from banks' financial statements relevant to the ability to issue a "clean" opinion have to be brought to the attention of the Bank.

20. In pursuing its mandate to contribute to the stability of the financial system, the Central Bank of Ireland has published **Financial Stability Reports** as part of its last two *Annual Reports*. In addition to an assessment of the international economic and financial setting, which has an important bearing on the strength of the financial system in an economy as open to international trade and financial flows as Ireland, the reports focus on internal sources of potential misalignment and "home-grown" risks. In particular, the Bank has been concerned regarding the rapid, albeit slowing, growth of private sector domestic credit and

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[9] This, as well as other relevant legislation and regulations, are available on the Central Bank of Ireland's supervisory webpage, http://www.centralbank.ie/supervision.asp.

[10] The Central Bank had at end-2001 185 staff involved in financial system supervision, of which 35 were involved in banking supervision, and some 64 staff supervising IFSC funds.

the sharp escalation in property prices. In this regard, the Bank has directed and evaluated a series of **stress testing exercises** by credit institutions (the latest in November 2000) simulating a variety of hypothetical economic situations, including a significant slowing of domestic economic growth, an appreciation of the exchange rate, and a drop in housing prices. In general, it was concluded that the financial system was well placed to respond to the various shocks, with solvency and liquidity ratios maintained. The financial system appeared to be more vulnerable to increases in general unemployment than to a fall in housing prices; thus, the appreciation of the euro would appear to be a particular risk. The Central Bank is further examining the results of the stress tests on an individual institutional basis, with a view to identifying and spreading best practices regarding methodologies employed before undertaking further testing. In addition, in response to the recent slowdown in the global economy, the weakness of the technology, media and telecommunications industries and the events of September 11, the Central Bank undertook detailed assessments of credit institutions' exposure to the telecommunications sector, and to industries vulnerable to the after-effects of terrorism (including airlines, insurance and tourism). It was determined that while bank exposure to the relevant sectors was in some cases not insignificant, it was not of systemic importance.

21. The Bank has also initiated an assessment of **macro-prudential risks** in order to better inform financial supervisors regarding potential systemic tensions arising from both external and domestic developments. While the analysis of Irish-specific risks is at an initial stage, recent empirical work by the Bank suggests that the probability of a financial crisis in Ireland in recent years based on macro-prudential indicators was minimal.[11] Nevertheless, as the authors suggest, it would be useful for supervisory purposes to further improve the methodology to make it more forward looking rather than contemporaneous, and to adapt it more closely to reflect the Irish financial system. In addition, work has begun to integrate macro- and micro-prudential indicators in an effort to assess financial sector risks.

[11] See Frank Browne and others (2002), "A Framework for Macro-Prudential Indicators," Central Bank of Ireland.