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Ireland: Financial System Stability Assessment Update

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IRELAND

Financial System Stability Assessment Update

Prepared by the Monetary and Financial Systems and European Departments

Approved by Ulrich Baumgartner and Michael Deppler

July 7, 2006

This Financial System Stability Assessment (FSSA) Update is based on the work of the Financial Sector Assessment Program (FSAP) team that visited Dublin March 2 to 14, 2006.

The key macro-relevant findings of the FSAP Update are:

- The Irish financial sector has continued to perform well since its participation in the Financial Sector Assessment Program in 2000. Financial soundness and market indicators are generally very strong.

- The outlook for the financial system is positive. That said, there are several macro-risks and challenges facing the authorities. As the housing market has boomed, household debt to GDP ratios have continued to rise, raising some concerns about credit risks. Further, a significant slowdown in economic growth, while seen as highly unlikely in the near term, would have adverse consequences for banks' non-performing loans. Stress tests confirm, however, that the major financial institutions have adequate capital buffers to cover a range of shocks.

- Good progress has been achieved in strengthening the regulatory and supervisory framework, in line with the recommendations of the 2000 FSAP. The strategy of creating a unified approach to risk with common elements across different sectors where appropriate, but differentiated where necessary, is being put into practice well. Improvements could nonetheless be made to enhance some aspects of supervision, especially as regards supervision of insurance and reinsurance.

The FSAP team comprised Mr. Mark O'Brien (Mission Chief), Mmes. Su Hoong Chang, Elena Duggar, Srobona Mitra (all MFD), Ms. Marialuz Moreno Badia (EUR), Mr. Jörg Genner (consolidated supervision expert, German Financial Supervisory Authority (BaFin)), and Ms. Brenda Sylvester (assistant, MFD). The mission received excellent cooperation and support from the authorities.

The main authors of this report are Mark O'Brien, Srobona Mitra, and Elena Duggar, with contributions from the rest of the FSAP team.

FSAPs are designed to assess the stability of the financial system as a whole and not that of individual institutions. They have been developed to help countries identify and remedy weaknesses in their financial sector structure, thereby enhancing their resilience to macroeconomic shocks and cross-border contagion. FSAPs do not cover risks that are specific to individual institutions such as asset quality, operational or legal risks, or fraud.

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GLOSSARY

AML/CFT	Anti-Money Laundering and Combating the Financing of Terrorism
BP	Basis point
BU	Bottom-up
CARs	Capital adequacy ratios
CBFSAI	Central Bank and Financial Services Authority of Ireland
CBI	Central Bank of Ireland (now CBFSAI)
CDOs	Collateralized debt obligations
Code	Consumer protection code
CEBS	Committee of European Banking Supervisors
CRD	EU Capital Requirements Directive
CRT	Credit risk transfer
ECB	European Central Bank
EU	European Union
FATF	Financial Action Task Force
FCR	Financial conditions report
FSCCP	Financial services consultative consumer panel
FSCIP	Financial services consultative industry panel
FSAP	Financial Sector Assessment Program
FSR	Financial stability report
FX	Foreign exchange
IAIS	International Association of Insurance Supervisors
IFS	International financial services
IFSC	International Financial Services Center
IFSRA	Ireland Financial Services Regulatory Authority
ILP	Investment-linked policies
LGD	Loss-given default
LTVs	Loan-to-value ratios
NPLs	Nonperforming loans
ODCA	Office of the Director of Consumer Affairs
PDs	Probabilities of defaults
SAO	Statement of actuarial opinion
SSIAs	Special savings incentive schemes
TD	Top down
EU-13	Non-Euro area EU members
EU-15	Euro area, United Kingdom, Denmark, and Sweden
EU-25	European Union

EXECUTIVE SUMMARY

The Irish financial sector has continued to perform well since its participation in the Financial Sector Assessment Program (FSAP) in 2000. Financial institution profitability and capitalization are currently very strong, with Irish banking sector profits amongst the highest in western Europe. Reflecting their good performance, the major Irish banks receive upper medium- to high-grade ratings from the international ratings agencies.

While the outlook remains very strong for 2006–07, there are some macro-risks that could have implications for financial system asset quality. Sustained rapid credit growth, driven largely by the record increases in mortgage credit which have accompanied the extended boom in the housing market, has resulted in household debt to GDP ratios that are now amongst the highest in Europe, raising some concerns about household sector credit risk. Moreover, a significant slowdown in growth, while seen as extremely unlikely in the near term, would have adverse consequences for employment, resulting in reduced demand for housing and a consequent slowing in the construction sector. Both corporate and household loan quality would be expected to deteriorate under such a scenario, although the likely magnitudes are uncertain due to the lack of recent experience with a major downturn in Ireland.

That said, the financial system seems well placed to absorb the impact of a downturn in either house prices or growth more generally. The results of stress tests undertaken through the Central Bank and Financial Services Authority of Ireland (CBFSAI) and the major lending institutions confirm that the major domestic lending institutions have adequate capital buffers to cover a range of large but plausible hypothetical shocks that reflect the above risks.

Further, good progress has been achieved since the 2000 FSAP in strengthening the regulatory and supervisory framework. The Irish Financial Services Regulatory Authority's (IFSRA) strategy of creating a unified approach to risk with common elements across different sectors where appropriate, but differentiated where necessary, is being put into practice well and is facilitating work prioritization and planning within the Authority. The insurance regulatory regime has also been significantly improved since the 2000 FSAP and continues to be further enhanced and developed. In parallel with these improvements, financial institutions have improved their own risk management practices, so that the financial system as a whole is better placed to identify and manage risks.

The mission nevertheless identified some areas where improvements could be made to enhance supervision, or where evolving market conditions will require parallel ongoing strengthening. In the mission's view, there will be a need to continuously review the adequacy of supervisory regulatory resources to take account of market and regulatory developments and the growth of the international financial services sector. There is scope to undertake more robust on-site visits to insurers, especially as regards independent assessments of their risk management and corporate governance practices. The introduction of a formal regulatory regime for the reinsurance industry will also be a challenge. In light of significant further developments expected in the supervisory regime for both insurance and reinsurance, and given the recent revision of the IAIS Insurance Core Principles to cover reinsurance, a formal reassessment of the IAIS Principles seems warranted, once the EU Reinsurance Directive has been fully transposed.

Box 1 summarizes the main recommendations stemming from the FSAP Update. As indicated above, reflecting the general robustness of the financial system and the supervisory framework, these recommendations are primarily for further enhancements rather than reflecting a need to address fundamental weaknesses.

Box 1. Ireland: FSAP Recommendations

Financial stability framework/stress testing

1. Medium term

- Continue to upgrade the CBFSAI's stress testing framework.
- Conduct coordinated bottom up stress testing exercises at least once every two years and investigate the potential for upgrading the templates used for bottom up stress tests, taking advantage of the richer models that banks are developing in preparation for Basel II.
- Consider extending the tests to the banks' foreign exposures, given the sizeable cross-border linkages of domestic credit institutions.

Regulatory framework

1. Ongoing

- Continue to develop the necessary expertise and ensure adequate staff resources for supervising an increasingly sophisticated financial system, especially taking into account ongoing regulatory developments (Basel II, Solvency II, and the regulation of reinsurance).

2. Short-term

- Enhance the current scope and intensity of the on-site supervisory program, in particular to strengthen the assessment of the risk management and corporate governance practices of insurers.
- Implement enhanced public disclosures by insurers, in line with the best practices established by the IAIS to allow for effective market discipline.
- Consider upgrading the position of the Prudential Director as regards IFSRA Board membership, on par with the Consumer Director.
- Strengthen monitoring of credit risk transfer activities by financial institutions.

3. Medium term

- Have a full reassessment of the IAIS Core Principles undertaken, once sufficient time has passed so that transposition of the EU Reinsurance Directive can be effectively assessed.

I. Scope of the 2006 FSAP Update

1. **This FSAP update focuses on three broad areas, reflecting the main recommendations made by the 2000 FSAP team for enhancing financial system stability and developments in the intervening period**:

- an update of the overall stability assessment, including stress testing;
- a review of the effectiveness of the IFSRA as an integrated supervisor now that it has been in existence for almost three years; and
- an in-depth examination of the regulatory and supervisory framework for the insurance sector and evaluation of impending regulatory initiatives for the reinsurance industry.[1]

2. **In relation to these three areas of focus, the FSAP update team:** (i) reviewed the implications of the banking system's relatively heavy reliance on wholesale funding; (ii) investigated the linkages between Ireland's International Financial Services Centre (IFSC) institutions and the domestic financial system as these may have strengthened following the abolition of the differential tax regime for IFSC institutions; (iii) undertook factual updates of the two financial sector standards that were assessed as part of the 2000 FSAP and where specific recommendations for improvements in supervision were made; and (iv) incorporated the recent assessment of Ireland Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) by the Financial Action Task Force (FATF).

A. Summary of the 2000 FSAP Recommendations

3. **The FSAP assessment in 2000 found Ireland's highly developed financial system had remained stable, even in times of international financial turmoil**. The regulatory framework showed a high degree of observance of international standards and codes. Nonetheless, a number of prospective short- and medium-term policy challenges were identified:

- sustained rapid credit growth, associated with the economic boom, was seen as having the potential to lead to a lowering of credit quality in some banks. In particular, the sustained rapid rise in real estate and house prices was seen as being of concern;

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[1] The examination of insurance sector regulation and supervision reviews the changes that have been made to the framework, assesses the effectiveness of the implementation of these changes in addressing previously identified weaknesses, and identifies areas where further improvements should be made. Relevant aspects of the IAIS Insurance Core Principles are used as broad benchmarks for this examination.

- increasing competition in the Irish financial system from abroad was expected to put pressure on financial institutions' profit margins; and

- the IFSC, while insulated from the domestic financial market and not of immediate systemic importance for Ireland, was still seen by the 2000 FSAP team as posing supervisory challenges. Any problem that might come to the forefront in the IFSC could negatively affect Ireland's reputation. The lack of direct supervision of the significant reinsurance industry in the IFSC was seen as a particular issue.

4. **To help address these challenges, the 2000 FSAP team recommended that the proposal that was then under consideration to unify financial sector supervision in a single agency be implemented promptly.** The FSAP team also recommended further strengthening the risk-based approach to supervision, and more rigorous application of the International Association of Insurance Supervisors (IAIS) Insurance Core Principles. Finally, the team recommended that the Central Bank should deepen its analysis of macroprudential indicators, credit developments, and sectoral price trends. A more detailed summary of the 2000 FSAP recommendations and their status as of the time of the 2006 FSAP Update is provided in Appendix I.

B. Recent Financial Sector Developments

5. **The domestic banking sector is continuing to grow strongly—with annual growth in assets of around 25 percent, it is growing approximately twice as fast as the Euro area banking system average (Figure 1, Table 1).**[2] While undergoing some consolidation, the degree of concentration in the banking system has reduced as the share of the four largest banks in total deposits has declined.

6. **Banking system profitability and capitalization are strong and NPLs are low, but credit growth remains concentrated in the real estate sector**. As expected by the 2000 FSAP team, competition has strengthened, tending to compress interest margins and reduce fees. Banks have reacted to these trends with significant cost cutting. However, they have also benefited from the record increases in mortgage credit which have accompanied the Irish housing boom, with the result that Irish banking sector profits are currently amongst the highest in western Europe. The increase in mortgage credit has also meant that assets are concentrated in property-related lending; taking commercial property lending into account, total property-related lending accounts for more than half the current stock of bank lending.[3]

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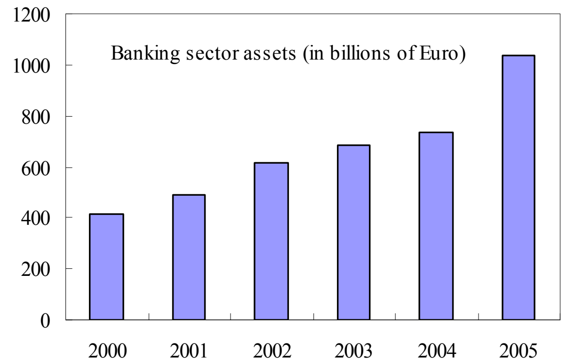
[2] The insurance sector has almost matched the rapid growth of the banking sector.

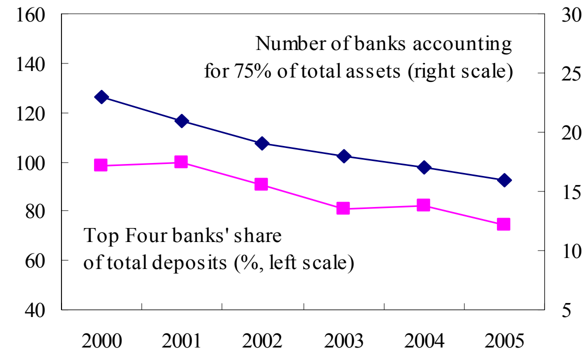
[3] As at December 2005, residential mortgages comprised 37 percent, commercial property 17 percent, and construction 5 percent, respectively, of total bank lending.

Figure 1. Ireland: Features of the Financial Sector

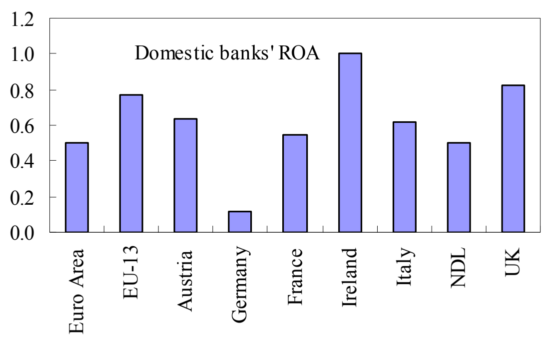
The banking sector continues to grow strongly...



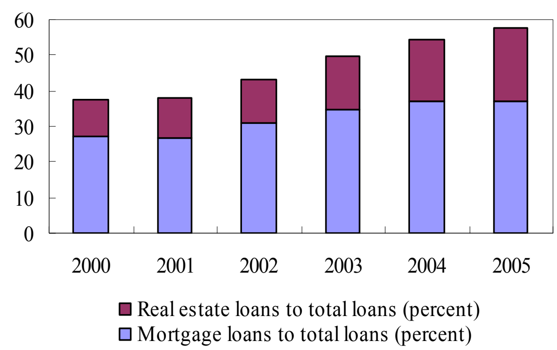
...and while undergoing consolidation has become somewhat less concentrated



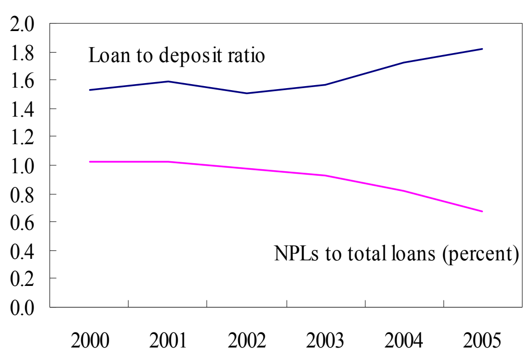
Banking profitability is strong...



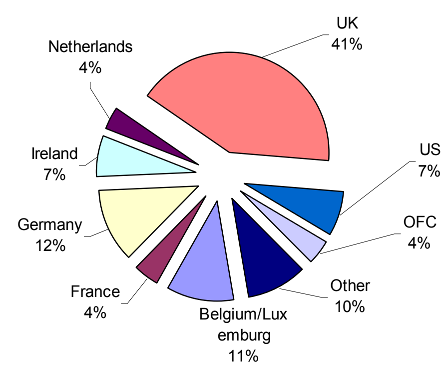
...but lending remains concentrated in real estate



Credit growth is leading to increased reliance on wholesale funding...



...but market and interbank funding remains diversified



Sources: CBFSAI, ECB, BankScope.

Table 1. Ireland: Financial Soundness Indicators for the Deposit-Taking Institutions

	2001	2002	2003	2004	2005
Capital adequacy					
All Banks					
Regulatory capital to risk-weighted assets (in percent)	13.2	14.4	15.0	14.6	13.6
Regulatory Tier 1 capital to risk-weighted assets (in percent)	10.7	10.7	10.8	10.9	10.6
Domestic Banks					
Regulatory capital to risk-weighted assets (in percent)	10.6	12.3	13.9	12.6	12.0
Regulatory Tier 1 capital to risk-weighted assets (in percent)	7.9	8.4	8.9	8.2	8.4
Asset Quality					
Nonperforming loans to total gross loans (in percent)	1.03	0.97	0.93	0.82	0.68
Nonperforming loans net of provisions to capital (in percent)	5.7	5.5	6.0	5.0	4.0
Contingent and off-balance sheet accounts (in percent of total assets) 1/	591.8	505.2	537.7	662.0	879.0
Total provisions for loan losses (in percent of total loans)	1.14	1.05	0.90	0.70	0.50
Distribution					
Personal lending as a share of total loans	52.2	55.3	55.6	55.8	54.6
(excluding financial intermediation and government)					
Of which: House mortgage finance	38.8	42.4	44.4	44.9	44.6
Other housing finance	0.9	0.8	0.4	0.3	0.3
Other personal lending	12.5	12.0	10.8	10.6	9.7
Annual credit growth rates (to private sector)	15.1	15.0	17.9	26.6	28.8
Annual mortgage credit growth rates	17.8	23.1	25.5	26.5	28.5
Commercial property lending as a percent of total loans					
(excluding financial intermediation) 2/	16.4	17.0	19.7	21.2	25.3
Concentration ratios in the banking sector					
No. of banks accounting for 25 percent of total assets	3	3	2	2	2
No. of banks accounting for 75 percent of total assets	21	19	18	17	16
Share of state-owned banks in total assets	1.0	0.0	0.0	0.0	0.0
Share of foreign-owned banks in total assets	42.0	29.0	31.0	34.0	32.3
Earnings and profitability 3/					
Return on assets (in percent)	0.9	1.0	0.9	1.0	1.4
Return on equity (in percent)	16.0	18.0	17.8	20.7	21.8
Interest margin to gross income (in percent)	65.0	62.0	60.7	58.5	66.5
Noninterest income to gross income (in percent)	35.0	38.0	39.3	41.5	33.5
Noninterest expenses to gross income (in percent)	55.0	51.0	49.6	49.4	53.4
Liquidity					
All Banks					
Liquid assets to total assets (liquid asset ratio)	30.0	30.0	33.6	33.0	34.2
Liquid assets to short-term liabilities (in percent)	37.0	34.0	41.2	40.0	40.1
Domestic Banks					
Liquid assets to total assets (liquid asset ratio)	22.7	28.0	29.0	28.0	29.0
Liquid assets to short-term liabilities (in percent)	28.2	30.5	33.3	32.0	32.3
Annual deposit growth rates	15.6	9.6	11.9	14.1	23.9
Deposits to M3 ratio 4/ 5/	1.02	1.02	1.46	1.36	1.40
Loan-to-deposit ratio vis-à-vis Irish residents 2/ 6/	1.44	1.43	1.46	1.61	1.77
vis-à-vis total 2/ 6/	1.59	1.51	1.57	1.72	1.82
Sensitivity to market risk					
Foreign-currency denominated assets (in percent of total assets)	44.6	40.1	32.5	29.4	33.9
Foreign-currency denominated liabilities (in percent of total liabilities)	47.4	42.9	34.2	32.2	35.9
Corporate sector					
Loans to non-financial corporates to total loans	30.9	30.6	32.7	34.6	35.6
Household sector					
Household debt to GDP (in percent)	38.9	43.2	49.3	61.2	72.0
House prices to disposable income	3.7	3.8	4.1	4.5	4.8
Real Estate Sector					
House prices (euro)	181,697	205,898	234,066	254,215	277,852
Mortgage loans to total loans (in percent)	26.9	31.0	34.5	37.0	36.8
Real estate loans to total loans 7/	38.0	43.2	49.7	54.4	57.5

Sources: CBFSAI

1/ Credit equivalent values.

2/ Includes lending for construction and real estate activities.

3/ 2005 data includes four banks only, including the three major banks.

4/ Non-government deposits vis-à-vis Irish and nonresidents to M3 ratio.

5/ The methodology used to compile M3 has been amended in line with Eurosystem requirements. Therefore, there is a break in the series.

6/ Nongovernment loans/nongovernment deposits ratio.

7/ Property-related lending, including real estate activities, construction and personal housing sector.

7. **Further, while international diversification of bank's assets is increasing, with the two largest banks each having an almost equal amount of domestic and foreign assets, a significant part of the foreign assets are also property-related**. These banks are therefore exposed to any general downturn in world property prices that might occur.

8. **Banking system lending growth has exceeded deposit growth for some time.** European Central Bank (ECB) data indicate that Irish banks had the lowest customer deposits-to-assets ratio of all western European Union (EU) member countries as at end-2004. As a result, a growing share of banks' funding has been from other financial institutions, including from off-shore; heavy reliance on wholesale funding potentially increases liquidity risk. As shown in Figure 1, however, the off-shore funding is diversified.

9. **Financial sector supervision was unified under the IFSRA, within the CBFSAI, from May 1, 2003**.[4] The integrated supervisory framework is intended to support better information flow between supervisors and those monitoring systemic risks, and to facilitate coordination among supervisory and monetary authorities should a problem arise. In addition there has been a strong emphasis on improving consumer protection as regards financial services.

10. **The framework for insurance supervision has been significantly overhauled since the 2000 FSAP**. Prior to the creation of the IFSRA, insurance supervision was the responsibility of the Department of Enterprise, Trade and Employment. Since then there have been major changes to strengthen insurance supervision, consistent with the recommendations of the 2000 FSAP. Looking ahead, the authorities' supervisory priorities include implementation of Basel II, the introduction of a formal regulatory regime for the reinsurance industry, and the implementation of the EU Solvency II Directive when it is finalized.

11. **The authorities have strengthened their analysis of systemic indicators and issues and have made efforts to increase public awareness of risks**. In pursuing its mandate to contribute to the stability of the financial system, the CBFSAI has commenced publication of a regular *Financial Stability Report* (FSR). A financial stability committee oversees the stability analysis and also conducts crisis simulation exercises. The CBFSAI has also undertaken a public education effort regarding the risks to borrowers arising from the house price boom and the expected rise in interest rates.

[4] The decision to unify supervision had already been taken at the time of the 2000 FSAP, however the issue of whether the supervisor should be part of the CBFSAI or alternatively a separate agency was still being considered. In the event, a separate legal entity entrusted with supervision was created but it was placed inside the central bank as an autonomous entity. The IFRSA is also responsible for consumer protection.

12. **The preferential corporate tax rate applying to financial institutions in the IFSC was abolished from January 1, 2006 (in line with EU requirements).** IFSC institutions have always received full licenses to operate in Ireland. While IFSC institutions' natural focus would be expected to continue to be on business with nonresidents, especially given Ireland's relatively small domestic market, removal of the differential tax regime could over time lead to growing business between these institutions and residents.

II. Sources of Risk to Financial Stability

A. Macroeconomic Sources of Risk

13. **As described in the accompanying Staff Report, the economic outlook remains positive and thus domestically originated macro risks to the financial system are limited.** The economy's momentum has been driven by strong employment growth which, in turn, has been boosted by record migration and increased participation. Going forward, the economy will be supported by continued strong employment and income growth, fiscal stimulus in 2006, and withdrawals from maturing special savings incentive accounts (SSIAs) that will begin in the middle of this year.[5] Business investment is expected to remain robust while residential investment is expected to expand further in 2006 before leveling off in 2007.

14. **While currently not seen as likely given the positive economic outlook, there are some risks of events that could result in a sharp slowing in growth, with a consequent deterioration in financial institutions' asset quality.** These risks reflect both domestic and external factors:

- Substantial increases in Euro interest rates, in excess of the 200 basis points generally incorporated in banks' stress tests of individual loans, would pose risks given household indebtedness levels. Private sector credit rose to record levels in 2005 with the annual growth rate reaching 29 percent in December (Figure 2). The ongoing rise in debt levels over the past decade has placed Ireland above the average of household debt-to-income ratio for Euro area countries, only surpassed by the Netherlands and Luxembourg (Figure 3).[6] Although real interest rates remain low, repayment affordability could deteriorate significantly if rates rise faster than currently expected.

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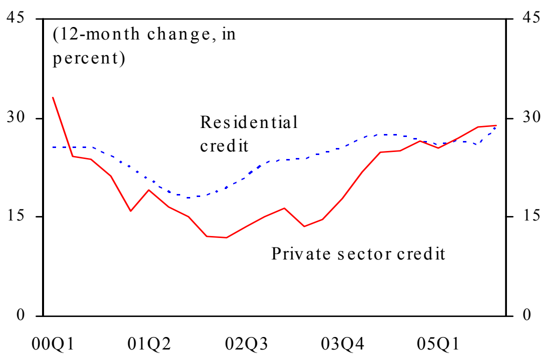
[5] Individuals receive a 25 percent tax credit on contributions to SSIAs (up to a ceiling). SSIAs were introduced in 2001–02 and must be held for five years to avoid an exit tax.

[6] A similar development of rapid debt build-up preceded the banking sector crises in the Nordic countries in the early 1990s: the household debt-to-GDP ratios soared to the traditionally higher levels of the U.S. and the U.K., much above the levels in the rest of Europe, and the years before the crisis were characterized by a rapid increase in the debt-to-GDP ratio (50 percent increase in Norway over 1984–88, 23 percent in Sweden from 1986–89, and 15 percent in Finland over 1987–90). It is worth noting, however, that there are some factors

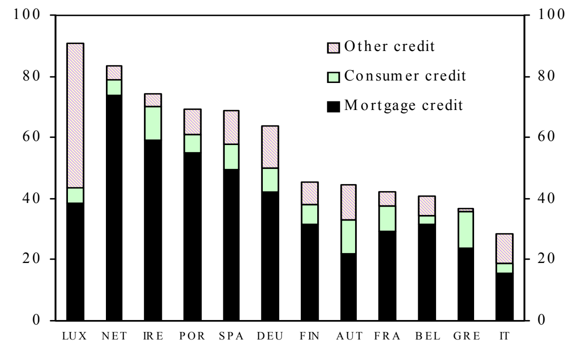
(continued…)

Figure 2. Ireland: Private Sector Credit Growth



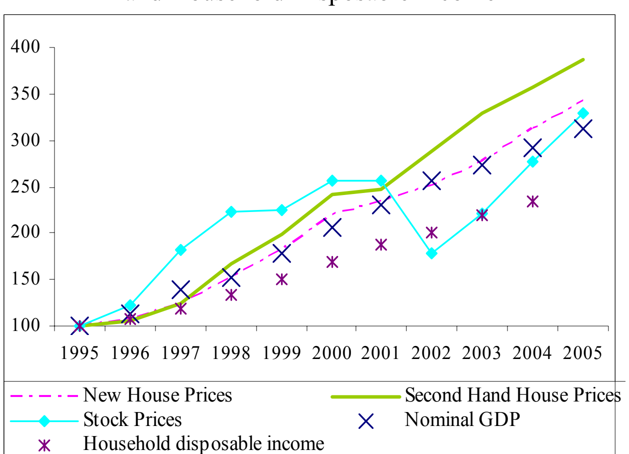
Source: CBFSAI, ECB.

Figure 3. Euro Area Household Debt (2005, in percent of GDP)



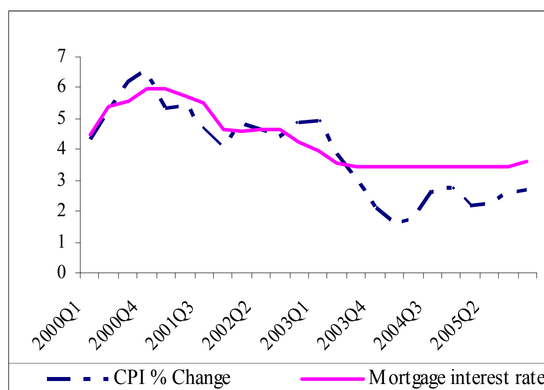
- While much of the growth in housing construction, and the extended boom in house prices, can be explained by fundamental factors of catch-up and immigration, there are concerns that house prices are now becoming overvalued; real estate prices have risen by about 10 percent per year on average since 2000, consistently faster than household average income (Figures 4 and 5). The central expectation is for an orderly slowing in the housing market. A sharp correction cannot be ruled out, however, and would have adverse consequences for employment and growth, and thus for debt servicing capacities for both households and the corporate sector.

Figure 4. House Prices, Stock Prices, GDP, and Household Disposable Income



Sources: Permanent tsp, SCO, IFS.

Figure 5. Cost of Mortgages and Inflation



Sources: CSO, IFS.

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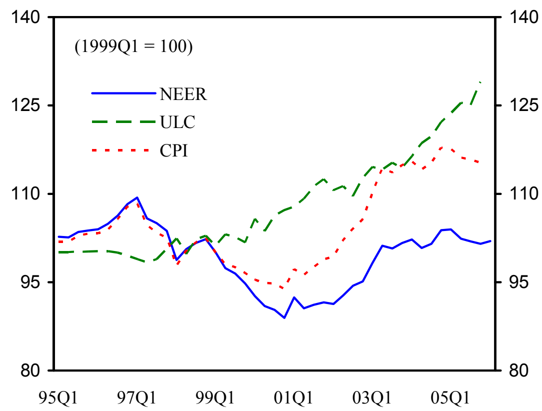
which could support higher than average debt to income ratios in Ireland. For example, Irish healthcare and education are of lower cost to households in Ireland than in many other countries.

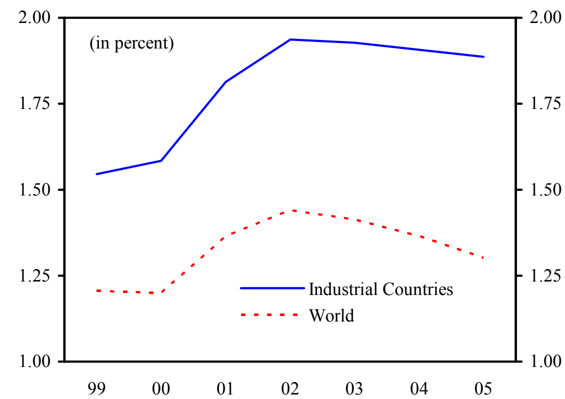
- A continued deterioration in competitiveness could dampen external demand and foreign direct investment. The economy-wide unit labor cost and consumer price index based real effective exchange rates appreciated substantially between 2001–05 (Figure 6). Similarly, further increases in oil prices could also adversely affect growth prospects, mainly through a reduction in demand from Irish major export markets (Figure 7).

Figure 6. Nominal and Real Effective Exchange Rates (24 trading partners, Economy-wide)



Source: EuroStat.

Figure 7. Ireland's Export Share



B. Financial Institutions' Counterparties

15. **As noted, private sector credit has increased very rapidly since 2000.** Credit has grown fastest for personal and commercial real estate finance, so that banks' balance sheets have become increasingly concentrated in property-related lending. While mortgage lending is generally low risk, Irish institutions' lending is more concentrated in this area than is typically the case in the rest of western Europe.

Households

16. **Levels of household gross indebtedness—primarily in the form of house mortgages—have risen sharply reflecting the continued rise in house prices in excess of incomes**. Household debt to GDP ratios have almost doubled over the last five years, and if current growth rates persist, they would double again over the next three years although, as already noted, debt levels are already high by international standards.

17. **As house prices have increased faster than disposable income, mortgage repayment burdens for first-time house buyers have risen**. The average mortgage servicing cost for first-time buyers, rose from an estimated 25 percent of average earnings in 2000 to about 29 percent by 2004. House buyers have moved to offset some of the impact of higher prices by increasing loan-to-value ratios (LTVs) and lengthening the term of loans. LTVs have grown from around 80 percent on average to around 92 percent for first-time

buyers, while average mortgage maturities have grown from around 20 years to 27 years (Table 2).

Table 2. Mortgage Terms for First-Time Buyers
(2000–04, in percent)

Term	Outside Dublin	Dublin City and County	Total
5-10 years	1.9		1.6
11-15 years	1.8	2.0	1.8
16-20 years	11.3	7.4	10.6
21-25 years	40.4	28.4	38.0
26-30 years	35.5	49.3	38.2
30+ years	9.1	12.8	9.8
Total	100.0	100.0	100.0

Source: Permanent tsb.

18. **As most mortgages are variable rather than fixed rate, recent first-time house buyers could come under financial stress if Euro interest rates rise more than expected in the near term**. Ongoing rapid income growth has led to relatively modest debt servicing burdens for many existing mortgage holders, so that any stress resulting from an increase in interest rates or a fall in house prices would be concentrated primarily in the group of recent first-time house buyers. Simulations indicate that a two percentage point increase in interest rates would raise the repayment burden for first-time house buyers by 5–6 percentage points from around 30 percent of average earnings, and 25 percent of disposable income, at present.

19. **Some banks have recently started to offer innovative mortgage products, such as 100 percent LTV and interest-only mortgages.** This reflects increased competition in the mortgage market, especially from new entrants seeking to gain market share. Most of these products are reportedly offered only to a limited range of bank customers, for example, borrowers with particularly high earning potential. Indeed, the maximum debt service to income ratios imposed by most banks on their clients mean that the majority of borrowers are ineligible for 100 percent LTV loans. Further mitigating risks, NPLs for mortgages are currently extremely low—at 0.45 percent, the ratio is amongst the lowest internationally.[7] That said, these innovative mortgage products are of higher risk to banks and the move by the authorities to require Irish banks to assign higher risk weights to mortgage loans with loan-to-value ratios above 80 percent from May 2006 onwards is therefore welcome.

[7] One reason for the very low NPLs is the prolonged expansionary phase of the business cycle in Ireland. Consequently, NPLs would be expected to rise somewhat when the expansion slows.

20. **Factors that would tend to support the housing market in the short term include the maturing of the first special savings incentive scheme accounts (SSIA) in 2006 and continued strong immigration**. Maturing SSIAs are expected to free up funds amounting to 20 percent of consumption, some of which are expected to be invested in the housing market. Ireland is one of the only three EU countries to already have an open door policy for workers from recent EU accession countries, and further strong migration flows of foreign workers are projected.

Corporate sector

21. **Credit growth to the nonfinancial corporates has rebounded across all sectors since 2002.** Commercial property-related lending was the largest component of outstanding loans to the nonfinancial corporate sector in 2005. Lending growth has been strongest for the retail, transport, and service sectors. Lending to manufacturing enterprises, after being flat for a period due to weaker growth in industrial production, has recently started to grow.

22. **Corporate sector credit risks remain low**. While the nonfinancial corporate sector debt-to-GDP ratio increased slightly over 2004 (by 5 percentage points to 90 percent), the rate of potentially insolvent liquidations fell in both 2004 and 2005, and remains significantly below its long run average. Indications from retail sales, investment, and confidence surveys are that corporate sector profitability improved in 2005.

23. **The distribution of debt is skewed, with a small number of firms holding the majority of the debt**. However, these are large international firms and in its latest FSR, the CBFSAI felt that the debt of these companies is likely to have been sourced from abroad, reducing the financial stability implications for the Irish banking system.

C. Funding and Liquidity

24. **Bank lending growth in Ireland has been consistently in excess of deposit growth, resulting in increased reliance on wholesale funding**. The domestic private-sector loans-to-deposits ratio of 1.7 (as of August 2005) is significantly above the Euro area median of 1.3. The four major Irish banks currently fund between 35 and 53 percent of total funding on the interbank and securities markets. Moreover, Irish banks' exposure to capital market funding, at 30 percent of assets, is among the highest in the EU. Interbank and securities markets are generally viewed as being more sensitive to confidence than are deposits, and thus they represent a less stable source of funds in times of real or perceived financial stress. Wholesale funding is also generally more expensive than deposit funding—the margin of lending rates over wholesale funding costs for Irish banks decreased further toward end-2005).

III. Strengths and Vulnerabilities: Institutions and Markets

A. Banks

Banking sector performance

25. **The banking sector continues to perform well against the backdrop of rapid credit growth, the low interest environment, and strong house price inflation.** The strong performance of the sector is partly driven by the retail focus—especially mortgage business—of domestic banks. Banks are well capitalized, relatively efficient, and highly liquid. Irish banks are among the most profitable in the EU despite having relatively low net interest margins (due in part to their heavy reliance on wholesale funding) (Figure 8).

26. **Loan-loss provisions are low but cover more than 85 percent of NPLs.** Given the low default rates of mortgages combined with considerable house price increases, mortgage loans have low specific provisions (0.03 percent of total loans).

Liquidity

27. **Offsetting to some extent the liquidity risks arising from relatively high reliance on wholesale funding by the Irish banking system, the funding has become increasingly geographically diversified**. Also, Irish banks' funding needs are small relative to the size of the liquid Euro market (where much of the funding is raised) and any shocks that might occur would be more likely to result in some increase in funding costs rather significantly reduced access. Finally, the maturity mismatch of funding and loans has not changed significantly over the last five years and Irish bank liquidity asset levels are good.

28. **Issuance of covered bonds by Irish banks has recently become more popular as a funding source**. This development was partly stimulated by new Irish legislation on covered bonds in 2001, which *inter alia* broadened the scope of risk protection by making loans from other countries such as the United States, Canada, Switzerland, and Japan eligible for the collateral pool.[8] Ireland is ranked sixth in terms of outstanding volumes of covered bonds in Europe, but only accounts for about 2 percent of the total. Issuance to date has been by the larger banks as it requires the availability of sufficiently large pool of homogenous eligible assets, and it requires larger volumes to be cost-effective. While covered bond issuance is attractive to the banks, those involved seem aware of the liquidity risks associated with over-reliance on any one funding source, and thus are ensuring that wholesale funding remains diversified.

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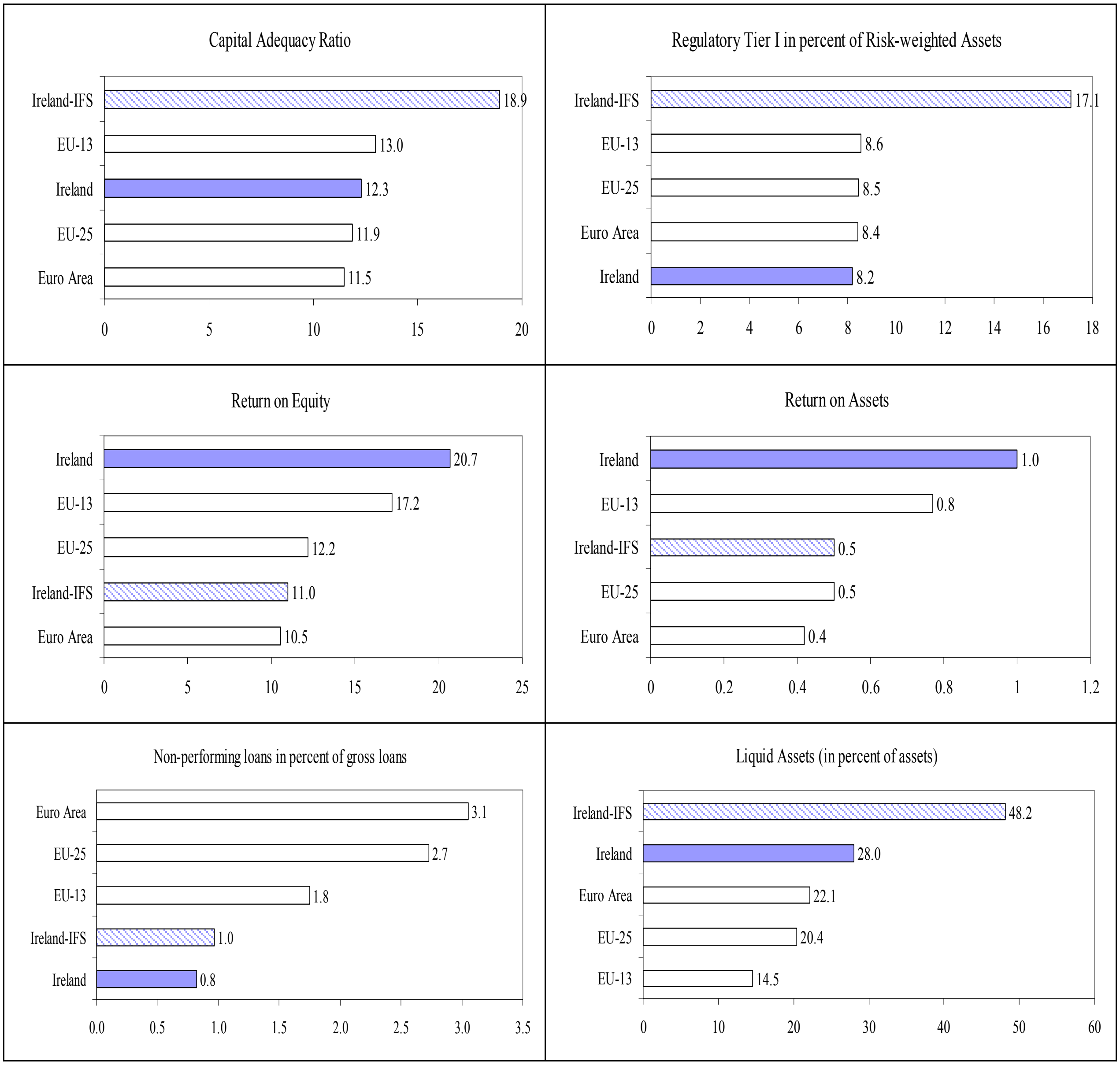
[8] With the exception of Luxembourg, most European countries limit the asset pool to European Economic Area assets.

Figure 8. Ireland Banking Soundness Compared 1/



Sources: ECB; and CBFSAI.

1/ Data as of end-2004. All domestic banks in EU-13, euro area, EU-25. Two series for Ireland are included—'Ireland' comprises domestic banks for CAR, Tier I ratio, liquid assets, all banks for the others; 'Ireland-IFS' comprises banks in Ireland's IFSC.

29. **Derivatives are growing in importance—with notional values approaching 900 percent of total assets in 2005—but data on credit risk transfer (CRT) activities are limited and available only with lags**. While CRT helps in risk dispersion, the quantitative techniques required to value and hedge these instruments are still evolving, exposing market participants in all jurisdictions to potentially large risks and increasing the need for careful monitoring. Understanding the extent and type of CRT activity in Ireland is also important given the increasing funding requirements in the context of rapid credit growth. The FSAP update team therefore recommends strengthened monitoring of credit risk transfer activities in Ireland.

Stress tests

30. **As part of the FSAP Update, the mission and the CBFSAI agreed on a series of stress tests to be carried out by: (i) a sample of systemically important lending institutions (bottom-up (BU) tests); and (ii) the CBFSAI (top-down (TD) tests).**[9] The institutions covered by both sets of tests comprise the set of large lending institutions judged to be potentially systemically important (nine banks and two building societies).

31. **The two main shock scenarios used for the tests were guided by the risks identified above.** These include strong external linkages of the Irish economy and the concentration of bank lending in the property market. The scenarios were calibrated using the CBFSAI's macroeconometric model using end-2005 balance sheet positions. The first shock scenario incorporates a sharp downturn in the housing market, a large increase in the interest rate, significant withdrawals of customer deposits, a fall in equity prices, and a depreciation of the Euro/U.S. dollar exchange rate. The second scenario involves a substantial increase in interest rates following a mild economic downturn.

32. **The TD tests are complicated by the extended period of strong economic performance in Ireland**. This makes it difficult to quantify the sensitivity of credit risk to economic developments, and thus the relationship between the scenarios and provisioning at the macro level. As a proxy for this relationship in the TD tests, the FSAP team therefore estimated the effect of macroeconomic shocks on provisioning levels in European industrial countries using panel data for EU-15 banks.

Results

33. **The TD and BU tests produced broadly consistent results, indicating that the banking system is resilient to a range of shocks, including those incorporating severe assumptions on credit risk.** Under both sets of tests the first shock scenario has the largest impact. Due to the downturn in GDP growth in both scenarios, bank asset growth (especially

[9] See Appendix II for more details on the stress tests and summary tables of assumptions and results.

loan growth) slows considerably followed by declines in operating income growth and nominal profit growth, and a high increase in NPLs.

34. **There are some differences between the results of the BU and TD tests due to differences in approach under the testing frameworks**. The BU tests are more dynamic in structure, with the institutions able to incorporate such factors as assumptions on lags and ongoing trading income to offset part of the initial impact of the shock. The TD tests are more conservative, and to some degree less realistic, with the entire possible impact of a shock being written off capital with no offsets. Thus the TD tests may in some sense be interpreted as "worst case" estimate of the impact of a shock vis-à-vis the BU tests.

35. **The mission team's EU-15 model in conjunction with the first shock scenario implies an increase in NPLs by 80 percent, assuming that loss-given default (LGD) remains at 50 percent.** Because NPL levels are extremely low in Ireland, the impact of this increase on capital adequacy ratios (CARs) is limited; the scenario does not cause any bank's capital adequacy ratio to fall below the 8 percent minimum. However, were NPLs to rise to 3.13 or by almost 400 percent over three years, as suggested by the BU tests, then the CARs would be significantly hit (assuming no other adjustments to capital). Irrespective of the differences between the two sets of tests, both indicate that the banking sector seems resilient to severe shocks. Still, given the rapid credit growth in the Irish economy, credit risk is deemed the most important risk factor.

36. **The TD test on house price declines shows that the banking sector has enough profit and capital buffers to withstand severe shocks on combinations of house price declines and default rates.** The test shows that the current value of provisions set aside for mortgage lending would cover a scenario of 25 percent fall in house prices. Even if the mortgage NPL ratio were to increase from the currently low 0.45 percent to 5 percent after a 40 percent fall in house prices, the banks' existing capital buffer would adequately absorb the resulting loss.

37. **The TD stress tests on various market risks showed very small effects**. A 400 basis point (bp) tightening of interest rates brings down system CARs by only a small amount, with balance sheet effects on the market value of bond portfolio partially offset by a positive income effect on the banking and trading books. A separate test on an increase in wholesale rates to calculate repricing risk was not considered as meaningful as, with most loans being at variable rates, banks would easily be able to pass the increase on. The direct balance sheet effect of exchange rate changes is negligible, and the indirect foreign exchange-induced credit risk effect of a 30 percent euro appreciation is also small. Although a 30 percent fall in equity prices reduces CARs by 0.54, data on net open positions in equities are not available and the effect on CARs is an overestimation.

38. **Liquidity risks seem manageable** A test on liquidity risk assumed a withdrawal of private sector deposits benchmarked against the total value of liquid assets, and separately, a

haircut on liquid assets to reflect unexpected difficulties accessing wholesale funding sources. A 30 percent reduction in private sector deposits, arising for example from an idiosyncratic rumor that spreads to other banks, would exhaust 15 percent of liquid assets. The main wholesale liquidity test assumes a 10 percent haircut on sale of assets such as debt securities and government bonds held by banks. Beyond effects on profits/capital—losses arising from the haircut would push overall CAR down to just over 9 percent—the banks appear to have generally appropriate contingent liquidity arrangements to address tightening of access to wholesale markets.

39. **Although both the CBFSAI and the banks have been doing stress tests on a regular basis since 1999, the methods are still being developed and the frequency of the coordinated BU tests is relatively low**. In the FSAP update team's view, there is scope to further improve the quality of the tests over the medium term. Data issues will for the time being constrain the power of any stress tests, but the authorities could start developing the methodologies for such tests, which could guide decisions on the types of data that would be necessary.

40. **Possible areas for changes to the stress testing framework include**: using the experiences of other countries' banking systems with economic downturns to help in quantifying the link between the macroeconomic shock scenarios and loan-loss provisions in Ireland; increasing the frequency to the BU stress tests to at least once every two years; extending the tests to the banks' foreign country exposures, given the sizeable cross-border linkages of domestic credit institutions; and upgrading the templates handed to the banks for filling up BU results to include more details and tests, taking advantage of the richer models that banks may already be using in preparation for Basel II.

B. The International Financial Services Sector

41. **The 2000 FSAP team found that linkages between the institutions providing international financial services (IFS) and the domestic financial system were limited, so that risks to the domestic system emanating from the institutions providing these services were negligible**. That said, some of the IFS providing institutions have always had ownership linkages with the major domestic banks. Further, the recent abolition of the favorable tax regime for the IFS institutions has lowered barriers to stronger financial linkages with the domestic financial sector.

42. **The FSAP update therefore included a review of the IFS sector in Ireland**. In line with the 2000 FSAP findings, IFS institutions still deal primarily with off-shore customers. As a result, possible avenues for contagion between these institutions and purely domestic Irish financial institutions remain limited. However, any soundness problems with the IFS institutions could result in reputational problems and even a decline in the activities in the sector (and thus lower employment and taxes, and underutilization of existing services infrastructure). For a more detailed summary of the findings of this review, see Appendix III.

43. **The CBFSAI may wish to consider including IFS institutions in stress tests in the future**. These institutions are of growing importance in terms of employment and fiscal revenues. Further, the possibility remains for growing linkages between the IFS sector and the domestic financial system over time. Including these institutions in the stress testing framework would also be consistent with the practice of other jurisdictions with large IFS sectors, for example, Luxembourg.

IV. The Financial Stability Policy Framework

44. **The regulatory and supervisory framework has been strengthened since the 2000 FSAP, so as to better address the challenges and risks facing the Irish financial system**. The two most significant changes were: (i) the creation of a unified financial regulator (the IFSRA) as from 2003; and (ii) the substantial upgrading of the framework for insurance supervision.

45. **The IFSRA is at an advanced stage of preparation for implementation of the revised EU Capital Requirements Directive (CRD), which will be used within the EU to implement the Basel II capital adequacy framework, from 1 January 2007**. The IFSRA has been an active contributor to the work of the Committee of European Banking Supervisors (CEBS) in this regard, and its approach to implementation will closely follow the guidance published by CEBS. The IFSRA has established a forum for discussing CRD Implementation issues with the industry. Established in July 2005, it has met five times to date and is proving to be an effective means of carrying out informal consultation on the CRD. In preparation for the CRD, the major Irish banks are in the process of upgrading their internal risk rating models and associated with the implementation forum are a number of working groups dealing, inter alia, with model validation, pillar 2 and prudential reporting.

46. **The FSAP update's analysis of the effectiveness of the IFSRA's application of its supervisory processes and decisions to individual financial institutions was based on discussions with the IFSRA and market participants, together with reviews of primarily higher level supervisory and regulatory documentation**.[10] Based on this information and associated analysis, the FSAP update team's assessments of integrated supervision framework and, within that, insurance supervision are positive. Nonetheless, there are some areas where improvements can be made. Evolving market conditions and international regulatory developments will also require continuous upgrading and fine tuning of the IFSRA's supervisory framework and approach.

47. **Box 2 provides a summary of recommendations for areas where the supervisory framework could be further strengthened**.

[10] Confidentiality requirements limited access to supervisory reports on individual institutions.

Box 2. Supervisory Framework—Recommendations

1. General

- Continue to monitor and improve efficiency, effectiveness and consistency of prudential supervision across all sectors regulated by the IFSRA.
- Continue to ensure adequate resources for supervising an increasingly sophisticated financial system, and international regulatory developments such as Basel II, Solvency II, and reinsurance. This should take account of financial institutions motivations in moving toward investments in more complex financial products and more leverage by financial institutions.
- Consider upgrading the position of the Prudential Director as regards IFSRA Board membership, on par with the Consumer Director.
- As the financial system develops, a move toward higher specialization might require a more formalized approach of internal information sharing. Furthermore, the development of a tracking system for supervisory activities might be useful to support the planning and exercise of the ongoing supervision.
- The involvement in ongoing discussions of the legal framework for prudential supervision on a domestic, EU, and global level, the growing significance of cross-border co-operation in prudential supervision as well as a general move toward a more integrated approach to risk management across risk categories and across the different financial institutions all suggest that some centralization of functions might be helpful, especially in the areas of supervisory policy and evaluation of risk models.
- Build capacity on investigations/enforcement and establish clear authority and decision making processes under the Administrative Sanctions regime, particularly on deciding on administrative route or criminal prosecutions.
- Provide explicit legal powers to the IFSRA to deal effectively with significant owners and key functionaries who no longer meet fit and proper requirements.

2. Banking

- Continue to develop the expertise necessary to cope with the challenges imposed by the implementation of Basel II, especially in the area of the supervisory review process and the assessment of management awareness.

3. Insurance

- Review the current scope and intensity of the on-site supervisory programme to enable an independent assessment of the risk management and corporate governance practices of insurers.
- Review the current regulatory requirements for the Statement of Actuarial Opinion on technical reserves of non-life insurers and consider appropriate measures to strengthen the oversight and independence of actuaries.
- Implement enhanced public disclosures by insurers, in line with the international best practices established by the IAIS to allow for effective market discipline.

4. Credit unions

- Continue to develop the regulatory framework for the supervision of credit unions, especially with regard to the risk management of their investment activities. Further out, it might be useful to bring the supervision of credit unions under the responsibility of the Prudential Director rather than remaining as a separate unit.

A. Integrated Supervision

48. **The IFSRA was established on May 1, 2003 as the body responsible for integrated supervision in Ireland.** The mission of the IFSRA, which was created as a distinct legal entity within the CBFSAI, is "to help consumers make informed financial decisions in a safe and fair market and to foster sound dynamic financial institutions in Ireland, thereby contributing to financial stability." To this end, it adopts an integrated approach that balances consumer protection, prudential supervision and financial stability.

49. **As a distinct component of the CBFSAI with clearly defined regulatory responsibilities, the IFSRA has operational and budgetary autonomy**. The creation in November 2004 of the Financial Services Consultative Industry Panel and the Financial Services Consultative Consumer Panel has enhanced public accountability of the IFSRA. However, while the IFSRA's published strategic plans track progress in achieving high-level targets, there would seem to be scope for provision of performance indicators, such as enforcement actions taken, in its annual reports.

50. **A major impetus for the establishment of a single regulatory authority in Ireland was consumer protection rather than the emergence of complex cross-sectoral groups in the domestic financial market**. Major initiatives in the area of consumer protection have consequently been a focus of public and political interest since the establishment of the IFSRA and highly visible. This is also an area where financial institutions feel there have been more dramatic changes in the regulatory framework.

51. **Notwithstanding the higher profile of the IFSRA's consumer protection activities, there have also been significant achievements in the prudential framework.** The IFSRA has combined the central bank's pre-existing sectoral supervisory responsibilities with the additional ones that were transferred from other agencies in a seamless manner. While responding to the challenges imposed by EU legislation, it has created an organizational structure and a consistent corporate culture that are likely to enhance financial stability.[11] Centralization of common functions and harmonization of processes and procedures have helped reduce the cost of regulation. Exchange of information and expertise between different areas of supervision has been facilitated, and there have been significant efforts to achieve a consistent approach to prioritizing supervisory resources across institutions.

52. **The marriage of prudential supervision and consumer protection has proven beneficial so far**. Initiatives with regard to best practices in market conduct should not only

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[11] To some extent the IFSRA's task may have been made easier by its relatively small size and the well developed approach for bank supervision which provided a base for the supervisory approach and culture of the new organization.

result in a reduction of operational risk but enhance good corporate governance, a precondition for efficient risk management.

53. **The IFSRA has also made significant progress in market conduct regulation and supervision.** A cross-sectoral consumer protection code is expected to come into effect in mid-2006. The consumer directorate also provides information and assistance to consumers who have a general service complaint. A Financial Services Ombudsman's Bureau was set up in 2004 to deal independently with unresolved consumer complaints.

54. **The IFSRA has not had to deal with a failure of a significant financial institution, and thus its framework for doing so has not yet been tested**. The financial industry in Ireland has benefited from an extended period of benign economic conditions that has supported profitability and growth even in a competitive market. Going forward, however, further competition and market inroads by foreign financial institutions are likely to reduce margins, and promote greater complexity of financial institutions' operations, increased risk-taking and higher leverage.

55. **Maintaining adequate and effective supervision in a fast changing environment will remain an ongoing challenge**. Increasing sophistication and complexity of market participants and financial instruments will require continuous upgrading of the skills of the IFSRA's staff in an environment of a limited pool of talent, an already tight labor market and high salaries. The strong commitment to cooperation and the high level of interaction with market institutions should not impede proactive and decisive intervention by the IFSRA.

56. **Consideration could be given to upgrading the position of the Prudential Director to full IFSRA Board membership, on par with the Consumer Director**. This would make clear to market participants the relative importance of the two functions and could also help to highlight any trade-offs between the consumer protection and supervision objectives that could conceivably occur should a major financial institution fail.

B. Insurance Supervision

57. **The regulatory framework for insurance reflects the IFSRA's broadly principle-based approach, reflective of and appropriate for the mature and sophisticated insurance market in Ireland**. Within the IFSRA, the insurance supervision department and the consumer directorate are responsible for prudential and market conduct regulation and supervision of insurers, respectively.

58. **Good progress has been made in strengthening the off-site and on-site prudential supervision framework for insurers.** Prudential regulatory requirements are sound and in line with the relevant EU directives and IAIS Core Principles. The IFSRA has established guidelines and standards to enhance insurers' corporate governance and is updating its fitness and probity framework. Due consideration should, however, be given to the appropriate scope and intensity of prudential on-site visits to enable independent assessment of the risk

management and corporate governance practices of insurers. To facilitate continuous monitoring and timely regulatory interventions, there are plans to introduce quarterly statutory reporting by all insurers by end-2006.

59. **The IFSRA has been empowered, since 2004, to exercise a range of regulatory sanctions in a proportionate manner.** Nevertheless, in the FSAP team's view, the IFSRA's ability to sanction persons who no longer meet the fit and proper tests could be strengthened.

60. **Since 2002, the IFSRA has expanded the role of actuaries in certifying the financial performance and condition of insurers**. The appointed actuaries of life insurers are required to present financial condition reports (FCR) once every three years, aimed at identifying plausible threats to satisfactory financial condition and related risk mitigation measures. In exercising reasonable reliance on the professional judgment of actuaries, there is scope for the IFSRA to collaborate with the actuarial profession to strengthen the oversight and independence of actuaries.

61. **Going forward, the IFSRA faces a number of challenges in order to maintain and upgrade the quality of insurance supervision in Ireland.** As Ireland is among the most important reinsurance jurisdictions in the world, the IFSRA is planning for early transposition of the EU Reinsurance Directive in 2006. It is also proposing the adoption of an economic capital model to assess solvency of reinsurers as an indicator to bridge the gap between Solvency I and Solvency II. The IFSRA is in active discussion with the Society of Actuaries to introduce actuarial valuation of liabilities, while appropriate solvency and disclosure requirements for finite and captive reinsurers are under consideration. To further facilitate effective market discipline, it is recommended that the IFSRA implement the international best practices on public disclosure standards by insurers established by the IAIS.

62. **Effective supervision of the significant and sophisticated reinsurance market will hinge on the adequacy of supervisory staff with the relevant training and experience**. The impending quarterly statutory reporting for insurance companies and the adoption of a more risk-focused approach to supervision will also have significant resource implications.

63. **In light of the significant expected further changes to Ireland's insurance supervision regime, the FSAP Update team is of the view that a formal reassessment of the Core Principles should be carried out.** This would be particularly useful in light of Ireland's global importance in reinsurance and the extension of the IAIS Core Principles to cover reinsurance. However, a formal assessment should allow sufficient time after Ireland's transposition of the EU Reinsurance Directive so as to be able to properly assess implementation.

C. AML/CFT Issues

64. **An evaluation of Ireland's AML/CFT framework and implementation of international standards was undertaken by the Financial Action Task Force (FATF) in July 2005 and the FSAP mission drew upon this evaluation in undertaking its work**. The main issue raised by the FATF was that the Irish guidelines are not legally enforceable (but in practice appear to be followed and "enforced" in a traditional supervisory sense). The FATF also questioned whether the Irish supervisor had sufficient sanction powers to deal with infractions of the AML/CFT law by institutions it supervises. The FSAP mission's understanding is that both issues should be addressed by the Irish authorities, to the extent necessary, in the context of implementing relevant EU directives.

Annex: Factual Updates of Observance of Selected Financial Sector Standards and Codes

This annex contains factual updates of the assessments that were undertaken as part of Ireland's 2000 FSAP for the Basel Core Principles for Effective Banking Supervision and the International Organization of Securities Commissions (IOSCO) Objectives and Principles of Securities Regulation. The factual update of the BCP assessment was undertaken by Jörg Genner (BaFin), and the factual update of the IOSCO Objectives and Principles was undertaken by Elena Duggar (MFD).

The updates were based on several sources including:

- reviews of relevant legislation, regulations, policy statements and other documentation;
- detailed interviews with the supervisory authorities;
- meetings with relevant independent bodies; and
- meetings with relevant financial sector firms and associations.

A. Basel Core Principles for Effective Banking Supervision

Summary of 2000 FSAP conclusions

65. An assessment of Ireland's observance of the Basel Core Principles for Effective Banking Supervision (BCPs) was carried out by the initial FSAP mission in 2000. The assessment found that the regulatory framework showed a high degree of observance of the BCPs.

66. The main challenge was seen as ensuring continuation of existing very high standards. The recommendations aimed at supporting this objective included further strengthening of the risk-based approach to supervision through an increased focus on systemic issues. In particular, the FSAP team recommended that the regulatory framework be continuously adapted to the changes in the banking environment. Other recommendations were that: (a) the Regulator should ensure that banks follow prudent credit analysis guidelines; (b) the Regulator should consider setting stricter provisioning or capitalization requirements for banks that engage in riskier lending; and (c) more frequent on-site inspections should be performed to help the early identification and solution of problems.

Factual update of material recent developments

67. A number of actions have been taken to further strengthen the regulatory and supervisory framework for banking since the BCP assessment, including adapting the regulatory and supervisory framework in order to implement EU legislation. The most significant change in the supervisory environment was the establishment of a unified Irish Financial Services Regulatory Authority (the IFSRA) in 2003. However, the impact of this on banking supervision was limited since this activity was already being performed by the

IFSRA's predecessor. Looking forward, the implementation of the Capital Requirements Directive (Basel II) will be the main challenge.

Objectives, Autonomy, Powers and Resources (CP 1)

68. As a distinct component of the CBFSAI with clearly defined regulatory responsibilities, the IFSRA has operational and budgetary autonomy. In terms of accountability, the IFSRA is accountable to parliament through a legal requirement on the chairman and other members of its board, who are appointed by the Minister of Finance, to appear before parliament on request. In addition, the annual budget, strategic plan, and annual report require prior approval from the Minister of Finance.[12] The financial services consultative industry panel (FSCIP) and the financial services consultative consumer panel (FSCCP) were established in November 2004 to enhance public accountability of the IFSRA. Supervisory decisions of the IFSRA are subject to appeal (to the Financial Services Appeal Tribunal in the first instance and subsequently before the High Court), as part of regulatory due process that supports accountability.

Prudential Regulation and Requirements (CPs 6–15)

69. Supervisory initiatives have taken into account the 2000 FSAP's recommendations. These included, for example, a study of the mortgage lending practices and underwriting standards of credit institutions, and a review of the international activity of subsidiaries of Irish credit institutions. Implementation of IFRS is likely to result in a decrease in provisioning due to an incurred loss model. However, shortfalls of expected losses over impairment provisions will result in a deduction from regulatory capital under the CRD regime, and therefore should be adequately dealt with.

Methods of Ongoing Banking Supervision (CPs 16–20)

70. The IFSRA has intensified its banking supervision in several respects. First, the Authority has issued and continues to issue a substantial number of consultation papers on a broad range of subjects from market conduct rules to fit and proper testing. The off-site review and on-site inspections of credit institutions have also been intensified. A dedicated inspection unit is performing an increasing number of: (i) cyclical inspections; (ii) theme inspections; and (iii) unscheduled and/or unanticipated inspections.

71. A risk factor rating system has been introduced for supervised institutions with the objective of achieving a more sophisticated, efficient and effective management of prudential supervision. Due to the relatively small number of more complex financial groups, the

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[12] The IFSRA receives 50 percent of its funding from the CBFSAI and 50 percent from the institutions supervised.

system has so far been applied at the individual institution level rather than the group level. The ratings are used as a tool to determine the level of scrutiny that should be attributed to an individual institution. They assist in the allocation of resources within departments and drive the nature and level of the regulatory action program including the frequency and scope of on-site inspections. Furthermore, the use of the system should result in an increased understanding of the risk profile of the individual financial services providers and highlight areas requiring corrective action. These ratings have become an integral part of the work of examiners and assist the creation of an "audit trail." The results enable the IFSRA to recognize trends in the risk profile both of an individual institution and the market and to identify issues of supervisory concern.

72. The rating system is expected to be further developed and enhanced as experience with using it is gained, as well as to provide the basis for the development of the risk assessment system the IFSRA will be required to operate as part of the EU Capital Requirements Directive. There is also expected to be a general move toward more qualitative assessment criteria.

Formal Powers of Supervisors (CP 22)

73. The IFSRA has the legal power to take a sufficient range of enforcement actions including an administrative sanctions regime that was established in 2004. However, there is no evidence that enforcement actions have been necessary so far with the exception of a few formal inquiries. In fact, reliance on principles, consultation and cooperation seems to have resulted in financial services providers undertaking remedial action as soon as possible to avoid the IFSRA taking action.

B. IOSCO Objectives and Principles of Securities Regulation

Summary of 2000 FSAP conclusions

74. An assessment of Ireland's observance of the International Organization of Securities Commissions (IOSCO) Objectives and Principles of Securities Regulation was carried out as part of the FSAP in 2000. The assessment, which was undertaken prior to the approval of the comprehensive assessment methodology by IOSCO in 2003, found that Ireland's securities regulatory regime conformed broadly with all IOSCO principles that were relevant in a small market. The FSAP team encouraged the authorities to maintain vigilance in view of the fast growing market and, in view of the large international presence of securities operations in Ireland, to continue to adapt securities regulation and supervision to the fast changing market environment and the developments in IOSCO principles.

Supervisory framework and factual update of material recent developments

75. Since 2000, the main market (the Official list) of the Irish Stock Exchange (ISE) has grown by about 18 percent in terms of market capitalization to reach about Euro 94 billion as at end-2005, still relatively small by international standards. In 2000, the ISE launched a new dedicated market for technology stocks, ITEQ, in addition to its other three markets: the Official list, the Developing Companies market (DCM), and the Exploration Securities market (ESM). In April 2005, the ISE launched the Irish Enterprise Exchange market (IEX), designed to suit the needs of small to mid-sized companies, which replaced the DCM and the ESM markets, and which is seen as an attempt to compete with the London Stock Exchange Alternative Investment Market. Since 2000, the ISE has moved to electronic trading primarily conducted on the ISE Xetra trading platform in the equities market and on the EuroMTS platform in the Government bond market.

76. As a regulated European stock exchange, the ISE complies with the requirements of the EU Prospectus Directive in relation to securities listed on its regulated markets. In recent years the ISE has established a leading position globally in investment funds and specialist securities listings, and has contributed to the rapid growth of the funds industry in Ireland. The number of Collective Investment Schemes in Ireland has increased from 824 (2355 including sub-funds) in 2000 to 964 (3798 including sub-funds) in 2005, and their assets have almost tripled over the last five years to reach Euro 584 billion in 2005. The ISE's success in attracting funds is partly due to its flexible and rapid procedures; it has a specialized department to deal with the listing of offshore funds.

77. Since 2003, the Irish Financial Services Regulatory Agency (IFSRA) regulates the securities markets in Ireland under the Central Bank and Financial Services Authority Of Ireland (CBFSAI) Acts 2003 and 2004. All relevant European Union Directives have been, or will shortly be, transposed into Irish law, including the Prospectus Directive, the Market Abuse, and the Transparency Directives. Three departments for the supervision of the capital markets have been established. The Market Supervision Department (MSD) supervises the Irish Stock Exchange and FINEX and undertakes the IFSRA's functions under the Prospectus Directive, the Market Abuse Directive and Transparency Directive (when the latter is transposed). The Investment Service Providers Supervision Department (ISPS) is responsible for the supervision of financial intermediaries. The Financial Institutions and Funds Authorization Department (FIFA) authorizes all financial services providers and supervises collective investment schemes. The IFSRA supervises both domestic entities and International Financial Services (IFS) entities, and does not distinguish between the two in terms of authorization and supervision, applying uniform policies, requirements, and risk rating. The IFSRA uses a risk-based structured approach to guide supervision of all financial subsectors.

78. Following is a more detailed listing of material developments in securities regulation, including in those areas were the 2000 FSAP suggested that improvements could be made:

Principles relating to the regulator (CPs 1–5)

79. Since 2003, 50 percent of the IFSRA's budget is being provided from the CBFSAI's budget, while 50 percent is provided by the industry, allowing for independence. Staff numbers in SES and FIFA increased from 88 in 1998 to 120 in 2005 (56 in SES and 64 in FIFA). The demand for staff in the securities markets continues to be very high with the rapid growth of the IFS sector, but the shortages of qualified staff in the private sector reported in 2000 have reportedly been alleviated, and with these the potential negative effects of competition for staff.

80. Requirements applying to the members of the ISE and firms engaged in the provision of investment business services were consolidated and updated in revised Handbook for Investment and Stockbroking Firms, published in November 2000. Two handbooks for Authorized Advisors and Restricted Intermediaries were published in May 2001 and were effective as of November 2001.

Principles for the enforcement of securities regulation (CPs 8–10)

81. A new administrative sanctions regime, allowing for supervisory action and administrative sanctions, in addition to criminal prosecution by the Courts has been established. Consistent with the recommendation of the previous FSAP assessment, the administrative sanctions regime provides a more flexible enforcement system.

Principles for cooperation in regulation (CPs 11–13)

82. As anticipated at the time of the 2000 previous FSAP assessment, the IFSRA has entered into a number of further Memoranda of Understanding (MOUs) with other securities regulators, including the U.S.A's FINEX and the Commodity Futures Trading Commission.

Principles for collective investment schemes (CPs 14–16)

83. Within the IFSRA, the supervision of collective investment schemes is the responsibility of the FIFA Department, while the supervision of insurance companies is the responsibility of the Insurance Supervision Department. Consistent with international practice, collective investment schemes are authorized as a product, while insurance companies are authorized as a company. Therefore, theoretically there could be different rules applying to similar products, such as insurance bonds and units in a unit trust, an issue raised as a possible problem in the 2000 FSAP assessment. A new disclosure regime for life insurance products, which was in preparation during the 2000 FSAP assessment, has come into effect and is currently being reviewed and updated.

Principles for market intermediaries (CPs 17–24)

84. The strain placed on brokerage operations and back-office functions arising from difficulties in staff recruitment, noted by the 2000 FSAP assessment, has been alleviated as a number of brokerage firms have established arrangements to outsource back-office operations. Revised general and supervisory requirements, advertising requirements, client money requirements and the Code of Conduct have been issued in a Handbook to all supervised firms.

Principles for the secondary market (CPs 25–30)

85. The ISE has moved to electronic trading and reporting through the ISE Xetra platform. Through an alliance with Deutsche Börse, ISE operated on a special segment of the Xetra platform in Frankfurt. This has overcome the delay in the timing of information noted by the 2000 FSAP assessment.

Appendix I. Status of 2000 FSAP Recommendations

2000 FSAP Recommendations	Implementation Status
General	
Introduce a single regulatory authority, to more efficiently supervise the insurers/reinsurers in the IFSC. Commence supervision of reinsurers. Ensure adequate resources for supervising an increasingly sophisticated financial system, including to evaluate financial institutions' internal models and to supervise banks' growing derivative activities.	Single regulatory authority came into being in 2003. Supervision does not differentiate between IFSC and domestic institutions. Work is ongoing to commence supervising reinsurance in line with the forthcoming EU directive and to improve resource availability and skill levels for supervision.
Further adapt and refine CBI stress tests, in particular to facilitate comparability across institutions, in order to identify potential problems and to encourage financial institutions to initiate their own internal testing.	The CBFSAI now calibrates its macro scenarios using its macro econometric model prior to giving them to the banks for BU stress tests. But BU tests are done only once every 2-3 years. One big bank out of the top three Irish banks is about to start a comprehensive internal stress test and one building society has an affordability model that is used to create an affordability index for each borrower.
Compile and publish data on overall and regional real estate transactions and price developments to permit lenders to better judge overall market trends.	The Department of the Environment, Heritage, and Local Government publishes annual and quarterly housing statistics bulletins, which contain house price statistics and loan and borrower profile data.
Banking system	
Continuously adapt the regulatory and prudential framework to the changes in the banking environment.	The regulatory and prudential framework is sound and in line with the relevant EU Directives. The current challenge is the implementation of an action plan so that credit institutions will be in a position to take on their additional responsibilities under the Capital Requirements (Basel II) Directive (CRD).
Ensure that banks follow prudent credit analysis guidelines. Consider setting stricter provisioning or capitalization requirements for banks that engage in riskier lending and also if moral suasion is not enough to curb excessive lending growth.	Ensuring that banks follow prudent credit analysis guidelines is a focus of the enhanced off-site and on-site supervision. Further progress is to be expected due to the implementation of the CRD. Implementation of International Financial Reporting Standards is likely to result in a decrease in provisioning due to an incurred loss model. However, shortfalls of expected losses over impairment provisions will result in a deduction from regulatory capital under the CRD regime and, therefore, should be adequately dealt with.
Perform more frequent on-site inspections to help the early identification and solution of problems.	A dedicated unit performs more frequent on-site inspections. The introduction of a risk management system for every institution supervised and a significant increase in staff result in a more sophisticated, efficient and effective management of ongoing prudential supervision and should facilitate the early identification of any problems.

2000 FSAP Recommendations	Implementation Status
Insurance Strengthen the staffing for insurance supervision, and ensure that the focus on consumer protection is accompanied by a more comprehensive risk-based approach to off-site and on-site supervision. Ensure more rigorous application of the IAIS principles and standards. Strengthen supervisory resources and satisfy the supplementary criteria, particularly for the key principles related to risk management.	The number of prudential supervisory staff has been increased from 17 to 30 (planned 35), of which 5 are currently involved in formulating the formal regulatory regime for reinsurance. The IFSRA has made significant progress in market conduct regulation and supervision. There is an ongoing need to continuously review the adequacy of regulatory resources to take account of the size and sophistication of the insurance market as well as evolving market dynamics and regulatory developments.
Securities Remove stamp duty on share purchases as it inhibits the development of a stronger liquid market in Irish equities.	The stamp duty has not been removed.
Credit Unions Continue monitoring closely the operations and growth of the credit union sector to ensure its continued soundness. Re-examine the legal and regulatory framework of the sector in order to minimize regulatory arbitrage as the range of products offered by credit unions (e.g., credit cards) grows.	The regulation of credit unions in Ireland was transferred from the Registrar of Friendly Societies to the newly created position of Registrar of Credit Unions under the umbrella of the IFSRA in May 2003. Since then, the Registrar of Credit Unions has carried out a series of themed inspections in credit unions covering the areas of money laundering, investments, credit, and information technology. A series of guidance notes was issued to credit unions arising out of these inspections covering money laundering, investments, and governance. A guidance note relating to credit is currently being developed and there is an ongoing work program aimed at strengthening the supervisory framework for credit unions under the IFSRA Strategic Plan.
Deposit Insurance Consider increasing the size of the premiums in order to speed up the accumulation of funds to cover the risks facing the deposit insurance system as the size of the fund seemed possibly insufficient to cover depositors in case of a bank failure.	Premiums were not increased. However, as there has been no need for recourse to the fund since the 2000 FSAP, its size has increased from Euro 202 million to Euro 338 million in 2004.

Appendix II. Stress Tests

86. **This Appendix describes the stress tests performed in the context of the 2006 FSAP Update of Ireland.** The exercises were carried out jointly by the Central Bank and Financial Supervisory Authority (CBFSAI) and a set of Irish financial institutions that were considered to be the main players in the banking sector, in consultation with the FSAP Update mission. The tests were aimed at assessing the resilience of the Irish banking sector to a set of hypothetical shocks that were considered extreme but with a positive, albeit small, probability of occurrence. The Appendix outlines the methodology, coverage, types and magnitudes of the shocks, and the results of the exercise.

The tests and shock sizes

87. **The CBFSAI carries out a range of both Top-Down (TD) and Bottom Up (BU) stress tests using a framework developed in 1999.** The last set of BU tests and TD analyses were conducted in end-2003 and reported in the Financial Stability Report (FSR 2004). For the FSAP Update round, BU tests were conducted by 11 Irish retail institutions comprising 9 banks and 2 building societies that have 95 percent of the mortgage market and 88 percent of the non-government deposit market in Ireland, using two scenarios calibrated from a macroeconometric model developed by the central bank, using on- and off-balance sheet data for end-2005 data (Table 3). The CBFSAI, in consultation with the FSAP team, also conducted a set of sensitivity tests and scenario analyses (based on one of the scenarios for the BU tests) on the same set of retail institutions to validate the BU results. The central bank intends to publish the results of the 2006 stress testing round in their next Financial Stability Report.

88. **Both single factor sensitivity tests and a scenario analysis are considered in the TD tests.** The TD analyses use prudential data collected by the Financial Regulator, institutions' annual accounts, and the Central Bank's money and banking statistics. However, only the credit risk test for the TD exercise can be directly compared to the corresponding BU tests because the banks were only asked to do the scenario analyses, and were not requested to do sensitivity tests.

Table 3. Shock Scenarios Based on CBI's Macroeconometric Model

Economic Activity (% volume changes, year on year)	**2006**	**2007**	**2008**
BASELINE 1/			
GDP	4.8	5.2	4.7
Private Consumption	6.3	6.6	4.4
Gross Fixed Capital Formation	3.8	3.5	3.1
Exports	4.8	5.7	5.6
Imports	5.3	5.6	4.7
Inflation (average % year-on-year change in HICP)	2.2	2.1	2.1
Unemployment (% of labor force)	4.3	4.3	4.3
House Price Inflation	7.0	6.3	6.1
SHOCK SCENARIO 1 2/			
GDP	3.2	-0.3	-4.8
Private Consumption	6.0	4.3	-0.4
Gross Fixed Capital Formation	-5.8	-13.6	-7.9
Exports	3.2	-3.9	-7.5
Imports	3.0	-4.9	-5.0
Inflation (average % year-on-year change in HICP)	2.1	1.7	1.5
Unemployment (% of labor force)	4.5	6.6	9.7
House Price Inflation	-13.0	-8.7	1.1
SHOCK SCENARIO 2 3/			
GDP	3.6	1.0	-2.0
Private Consumption	5.9	4.0	0.4
Gross Fixed Capital Formation	-3.9	-9.8	-12.2
Exports	3.9	-1.2	-2.5
Imports	3.7	-2.4	-3.4
Inflation (average % year-on-year change in HICP)	2.1	1.8	1.9
Unemployment (% of labor force)	4.5	6.2	8.7
House Price Inflation	-13.0	-8.7	1.1

1/ Based on the projections in CBI's Quarterly Bulletin No. 1 2006, with the horizon extended to 2008.
2/ This scenario represents the model-based outturn if the economy were subjected to a series of shocks based on extreme realizations of historical data—sharp downturn in world trade by 6%, a significant (25%) appreciation of the Euro, a sharp reduction in foreign direct investment resulting in machinery and equipment investment being 25% lower than in the baseline (with a strong negative impact on Irish exports), a reduction in housing output to 50,000 units from the current 80,000 units. Policy interest rates are assumed unchanged. Separately, a 40% decline in house prices is built into this scenario based on real disposable income growth. Interest rates and the stance of fiscal policy held constant. The scenario takes effect beginning of 2006Q3. The joint probability of occurrence of the shocks is less than 1%.
3/ A less extreme scenario than the first. World trade is not explicitly modeled but appreciation of the euro of a lesser (10%) magnitude is included. Contraction of housing construction and of FDI is of the same magnitude but occurs more gradually than in the first scenario. There is a steady rise in nominal short-term interest rates, which was assumed by banks to yield a cumulative increase of either 1.25 percentage points or 2.50 percentage points above the current level.

89. **Since the CBFSAI's macroeconometric model does not incorporate the effect of macro shocks on banks' non-performing loans, the FSAP Update team estimated a cross-country provisioning model to conduct a credit risk test.**[13] A cross-country model was used to capture variation of output growth and unemployment rate between and across countries, especially those that had undergone recessions; this is not possible with Irish data given the extended upswing in the economy. A panel data model is estimated for 496 banks from EU-15 countries covering 1996–2004. Log of loan-loss reserves in percent of gross loans is regressed on bank size (log of loans/assets), and a set of macroeconomic variables—log of unemployment rate, growth rate of index of industrial production, long term interest rate, square of long term interest rate, and real house price inflation rate. Pooled OLS estimates suggested that provisions were most sensitive to changes in the unemployment rate (+), much less sensitive to output growth rate (-) and real house price inflation rate (-). The estimated coefficients were used to estimate increases in provisioning and, given the current loss-given-default, increases in probability of default proxied by non-performing loans.

90. **The CBFSAI, in consultation with the FSAP team, conducted the following additional TD tests**:

- Macro credit risk—several sensitivity tests assuming combinations of increasing NPLs and loss-given defaults.
- Credit risk associated with real estate prices—various house price scenarios were analyzed assuming different mortgage default rates, and assessed against existing profit and capital buffers.
- Interest rate risk—the effect of changes in interest rate on net interest income ('income effect') based on repricing gap data on banking and trading books, and on the balance sheet of banks using maturity of bond investments.
- Liquidity risk—the effect of a significant withdrawal of resident private sector deposits. A second test involves a reduction ('haircut') in value of liquid assets to proxy the effect of increased funding costs stemming from a generalized reduction banking system access to wholesale markets.
- Foreign exchange (fx) risk—indirect (credit risk) effects; direct fx risk is negligible.
- Equity price risk—given the small share of equities in banks' balance sheet, this risk is negligible.

[13] This model is similar to the panel data provisioning model developed in Kearns A., 2004, "Loan losses and the Macroeconomy: A Framework for Stress Testing Credit Institutions'' Financial Well-Being," Financial Stability Report, Central Bank of Ireland, using data on the 2003 Irish stress test participants.

Results

Bottom-up results

91. **A major outcome of the first shock scenario is a drastic reduction in asset growth, increase in non-performing loans but almost no change in profitability (ROA) from the baseline (Table 4).** Due to the sharp downturn in GDP growth in this scenario, bank asset growth (especially loan growth) slows considerably followed by declines in operating income growth and nominal profit growth. But return on assets *increases* above the baselines in 2006 and 2007 before taking a dip in 2008 to be almost similar to the baseline. This result could be due to the fact that even though nominal profits (before provisioning and taxes) grow at a pace much lower than the baseline, there is a dramatic fall in asset growth, pulling up returns on assets.

Table 4. Summary of BU Test Results

			Weighted average impact from banks' baseline forecasts (percentage points)				
Scenario	**Assumptions**		**NPLs**	**Asset growth**	**Operating income growth**	**CAR**	**ROA**
Scenario 1	All 11 banks: severe economic downturn	2006	0.31	--	--	0.27	0.02
		2007	1.19	-10.76	-7.46	1.00	0.03
		2008	2.28	-10.94	-8.33	1.30	0
Scenario 2	1. 6 banks: 1.25% increase in interest rates, 69.9% of total assets 1/	2006	0.41	--	--	0.33	0.03
		2007	1.12	-10.48	-5.17	1.01	0.08
		2008	2.54	-11.77	-7.51	1.43	0.09
	2. 5 banks: 2.50% increase in interest rates, 30.1% of total assets 1/	2006	0.13	--	--	0.24	-0.01
		2007	0.82	-4.66	-3.14	0.55	0
		2008	0.86	-7.42	-5.77	1.06	-0.02

1/ Two sets of results are reported, based on the interest rate increase taken or assumed by banks to run this test. Due to some confusion, some banks ran the test exercise with a 1.25 percentage point increase in interestrates while others assumed a 2.5 percentage point increase. There are 6 banks in the first set (with a 1.25 percent increase in interest rate) comprising 69.9 percent of the assets, and 5 banks in the second set.

92. **Non-performing loans increase considerably as percent of gross loans—with mortgage loans still showing the lowest NPLs—growing by more than 2.5 times the baseline over the three years.** However, the cover ratio—loan loss reserves in percent of non-performing gross loans—falls in the shock scenario. This was also a feature of the previous round of BU tests that the banks had participated in, and appears to be the result of banks assumptions on collateral values and collateral recovery rates. A fall in the cover ratio

implicitly assumes that even though the probability of default (proxied by actual non-performing loans) is rising due to the severe downturn, the loss given default is not.[14] Capital adequacy rises under the shock scenario even as it falls under the baseline (although the differences are very small). This is also true for the bank that has the minimum capital adequacy ratio (CAR) under the baseline. Owing to a full balance sheet treatment by banks in the BU tests, the CAR is boosted by factors that still help profits grow (albeit at a slower pace); these factors would be difficult to consider in the TD tests.

93. **Overall, the second shock scenario, as expected, has a milder effect on key ratios than the first.** Operating income growth, return on assets, and net interest margin are higher in 2008 under this scenario than for Scenario 1. However, there does not appear to be a relationship between interest rate rise and NPL-growth in this scenario.

Top Down results

94. **The mission team's EU-15 model in conjunction with the first shock scenario implies an increase in NPLs by 79 percent, assuming loss-given default (LGD) remains at 50 percent (Table 5).[15]** Because NPL levels are extremely low in Ireland, the impact of this increase on CARs is limited; the scenario does not cause any bank's capital adequacy ratio to fall below the 8 percent minimum. A more severe (but arbitrary) 100 percent increase in the NPL ratio would have a stronger impact but would still not have systemic implications. Irrespective of the differences between the two sets of tests, both indicate that the banking sector seems resilient to severe shocks. Still, given the rapid credit growth in the Irish economy, credit risk is deemed the most important risk factor.

95. **The banking sector seems resilient to severe assumptions on credit risk.** However, the underlying increase in non-performing loans predicted by the model (assuming LGD remains the same) is 1.57 compared to the BU tests' 3.13 in 2008 under Scenario 1. With the same LGDs—that is 50 percent—and NPLs between 2.61 and 3.48 percent in the TD case, three banks accounting for 9 percent of assets would fall below the minimum CAR of 8 percent. But the two tests are not exactly comparable given that the BU tests assumes an adjustment of many variables over three years with CARs actually increasing at the end of 2008. However, if the actual increase in NPLs in the BU tests (from 0.8 in 2006 to 3.13 in 2008) is written off 2006 regulatory capital, using 50 percent LGD, then CARs would fall by 1.04 percentage points, which is less than but roughly comparable to the TD test.

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[14] For mortgage loans, however, the cover ratio rises slightly from about 18 percent in the baseline to about 20 percent under the shock scenario in 2008.

[15] To the extent that LGD is proxied by the coverage of NPLs by specific provisions, the LGD for the aggregate banking sector was 50 percent in 2005.

Table 5. Summary of TD Test Results

Tests 1/	Shocks and assumptions	Weighted average impact on CAR in pp	Number of banks < 8%
Credit risk	1. Scenario 1: 3-year cumulative impact 2/ LGD remains the same at 50% Increase in PD by 80%	-0.44	0
	2. Increase in PD by 100%, LGD=50%	-0.56	1
	3. Increase in PD by 100%, LGD=75%	-0.85	1
		Banking book	
Interest rate risk	1. 200bp downward parallel shift	-0.05	0
	2. 400bp upward parallel shift	0.11	0
		Trading book	
	1. 200bp downward parallel shift	-0.01	0
	2. 400bp upward parallel shift	0.02	0
		Market value of bond assets	
	1. 100bp upward parallel shift	-0.12	NA
	2. 400bp upward parallel shift	-0.48	NA
Liquidity risk	1. 10% haircut on debt securities & government bonds	-1.52	2
	2. 20% haircut on debt securities & government bonds	-3.10	4
	1. 10% deposit withdrawal 3/	5	NA
	2. 30% deposit withdrawal 3/	14.9	NA
		Fx-induced credit risk	
Exchange rate risk 4/	1. Default rate: 10% of fx loans + LGD: 50% as a result of 30% depreciation in EUR versus all foreign currencies	-0.19	0
Equity price risk	30% fall in equity prices	-0.54	NA

1/ House price declines are excluded from this table, as the methodology for the test was different. See text for the summary results.
2/ Increase in PD based on the EU-15 cross-country econometric model.
3/ Resulting value of withdrawal/value of liquid assets in percent.
4/ The direct balance sheet impact of exchange rate change on net open fx position is negligible and not reported.

96. The TD stress tests on various market risks—including interest rate risk, equity price risk, and foreign exchange risks—showed very small effects. A 400 basis point (bp) increase in interest rates would lower the market value of the bond portfolio resulting in a 0.62 percentage point change in average CAR, and this would in any case be partially offset by small positive income effects in the banking and trading books. A 30 percent fall in equity prices results in -0.62 percentage point erosion of the average CAR. Indirect foreign exchange (FX) risk has a very small effect on CARs, even under the assumption of severe shocks.

97. **A test on liquidity risk assumed a withdrawal of private sector deposits and a haircut on liquid assets**. The withdrawal—due for example to idiosyncratic rumors that spreads to other banks—was benchmarked against the total value of liquid assets to see whether it could be met out of the existing stock of liquid assets. A 30 percent reduction in sight deposits would exhaust 15 percent of liquid assets. Separately, a haircut is applied to the stock of debt securities and government bonds held by banks to proxy the impact of the banks attempting to sell their entire liquid assets portfolio to meet sudden liquidity needs arising, for example, from sudden difficulties in accessing wholesale funding sources. A 10 percent haircut would push overall CAR to 9 percent.

98. **Recognizing that new mortgage borrowers were most at risk of falling into negative equity following a house price fall, the Central Bank designed an innovative test to check if the level of existing provisions could absorb the resulting increase in loss-given-defaults at different default rates.** Here, the LGD is calculated from the existing mortgage book and applied to various default rates. To set a benchmark for the typical LGD, a hypothetical average mortgage with 90 percent LTV was assumed to originate in each of the years for the last 10 years. Then each of these loans was amortized through the years till 2006, and the outstanding LTV for each mortgage loan is calculated by using current average house price.

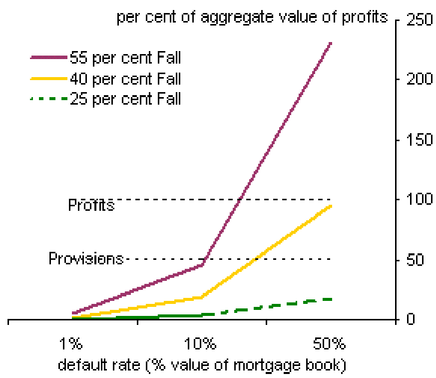
99. **Hypothetical (nominal) house price declines of 25 percent, 40 percent, and 55 percent were then applied to the outstanding LTVs to calculate the typical LGD if the mortgage were to default.** The actual mortgage loan book is then divided into buckets according to the years in which the loans were first originated. It is (very conservatively) assumed that all loans in each of the buckets had LTVs 90 percent or above at the time of origination.[16] The hypothetical LGD is then applied to the calculated LTV in each bucket under the assumptions of house price declines of 25 percent, 40 percent, and 55 percent

[16] Also refer to Box D of FSR (2004). As part of the reporting on BU test results, the banks were also asked to submit data on mortgages with <60 percent, 60–75 percent, and >92 percent LTVs. Between 26 and 33 percent of mortgages—depending on the method of calculation—had LTVs greater than 75 percent, and 1.8–6.1 percent had LTVs above 92 percent.

respectively. Under various assumptions of default rates, the value of the total loss as a percent of the aggregate value of the buffer created by profits is calculated.

100. **The test shows that the current capital buffer would absorb very high default rates and house price declines (Figure 9).** The graph below shows losses from mortgage loan defaults at various default rates and house price declines. The value of provisions set aside for mortgage loans was 12 percent of profits at end-2005; this would cover losses from a 25 percent fall in house prices and up to 10 percent default rates. If the 50 percent risk-weight for mortgage loans is considered as an additional capital buffer for unexpected losses, then this mortgage capital buffer along with mortgage provisions covers even a 55 percent fall in house prices and a 10 percent default.

Figure 9. House Price Falls and Aggregate Buffers 1/



1/ The kinks on the lines are due to a non-uniform x-axis scale.

Appendix III. The International Financial Services Sector

A. Introduction

101. **Over the last two decades, Ireland has been very successful in promoting itself as a centre for financial services companies**. This success is due to a variety of factors, including an attractive fiscal and regulatory environment and the availability of a highly educated workforce. As a result, about 450 international institutions are currently operating from Ireland, including over 50 percent of the top 50 global financial institutions. Although Ireland's international financial services companies deal primarily with cross-border customers, linkages with the domestic economy are increasing.

102. **An analysis of the international financial services (IFS) sector in Ireland, was undertaken as part of the FSAP Update**. The objective was to examine the linkages between the international financial institutions in Ireland and the domestic economy to assess whether or not they are increasing. The major strengths and vulnerabilities of credit institutions in the Irish IFS sector were also examined.

B. Background

103. **The development of an IFS sector in Ireland began with the establishment of the International Financial Services Center (IFSC) in 1987**. The main incentive offered to investors at the time included a reduced corporate tax rate of 10 percent and relief from local municipal taxes, as well as from taxes on capital expenditure and rents on property. Institutions consequently entered the IFSC primarily to deal with cross-border customers.[17]

104. **There is no longer any distinction between IFSC and non-IFSC institutions from a taxation perspective**. In 1998, agreement was reached between the Irish authorities and the EU Commission to phase out the preferential IFSC regime by January 1, 2006. This phasing out was implemented, in conjunction with the introduction of a new 12.5 percent Irish corporate tax rate starting from January 1, 2003. As a result there is now no fiscal distinction between IFSC and non-IFSC institutions.[18] While the initial stimulus for the creation of the center was a favorable tax environment and the availability of a young and well-trained workforce, the IFS is now well established.

105. **From a modest start, the IFSC has grown to become of significant importance for the economy** (Figure 10). The IFS sector currently employs more than 21,000 people, or

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[17] Business transactions between Irish residents and IFSC companies were permitted at the higher tax rates.

[18] Nevertheless, the tax regime that now applies to IFS operations is one of the most attractive regimes available to financial companies considering locating operations in other countries.

about 38 percent of all those employed in the financial sector, up from 8 percent in 1993. The direct tax yield from IFS companies is €663 million (or about 12 percent of total corporate taxes), substantially higher than the €4.7 million tax yield in 1989. The increasing role of the IFS sector in international asset management and trading has resulted in large gross levels of foreign assets and liabilities (each well above 600 percent of GDP). Linkages with the domestic economy have increased over time, and IFS banks' assets held against Irish residents now represent about 30 percent of GDP.

Structure

106. **Ireland's IFS sector is dominated by credit institutions and investment funds** (Table 6).[19] As of December 2005, there were 51 banks in the IFS sector accounting for about 37 percent of the total bank assets.[20] Of those, 22 banks were foreign banks' branches benefiting from the EU passport established in 1994. The majority of activities conducted by these banks are in the international wholesale banking market.

Table 6. IFS Sector: Key Statistics
(Billion of euros)

Bank assets	348.8
Net asset values of funds administered in Ireland	874
of which:	
Irish domiciled	513.9
Non-Irish domiciled	360
Assets under management	270
Cross-border life assurance premiums (2004)	9.4
Cross-border gross non-life premiums (2003)	14

Sources: Central Bank and Financial Services Authority of Ireland; IDA; Finance Dublin-May 2005; Dublin International Insurance and Management Association.

107. **The IFS sector is one of the largest funds administration and custody centers in the world**. Recent statistics list the number of authorized funds at around 3800 (2,120 Undertakings for Collective Investment in Transferable Securities), with the net asset value of Irish-domiciled funds estimated at over €500 billion. The IFS sector is, however, primarily a back-office operation of firms whose front offices are located in the main international financial centers. Ireland has also developed into a leading center for alternative investment activities, mainly hedge funds. There are now over 4,000 funds and sub-funds listed on the Irish Stock Exchange (ISE), making the ISE the largest exchange in the world for fund listing, ahead of Luxembourg. Asset management activities are not as well developed as asset services activities, with assets under management (AUM) in Ireland representing only about 0.5 percent of global AUM.

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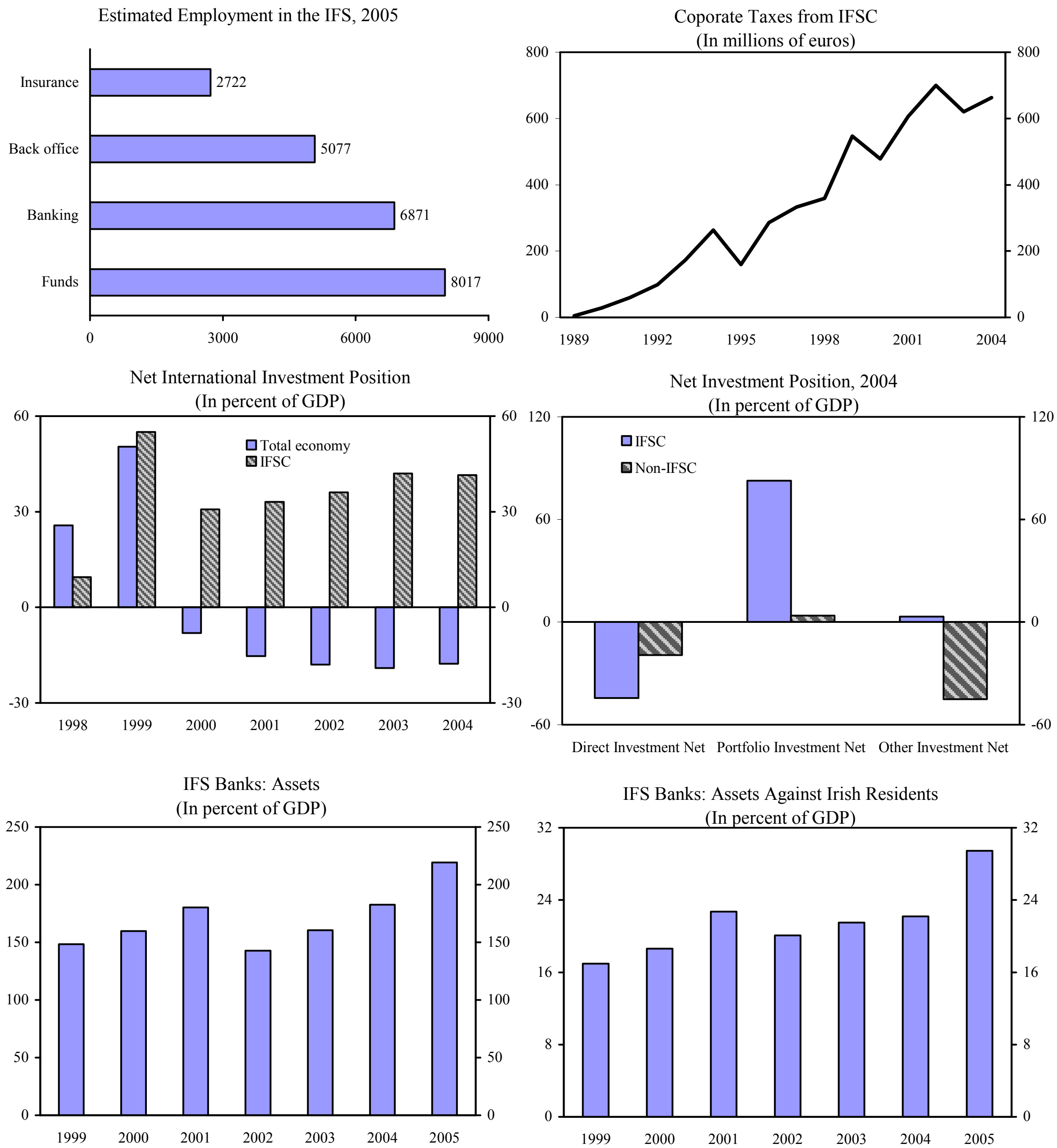
[19] IFS banks are defined here as nonclearing credit institutions with predominantly foreign business.

[20] The share of total banks assets of IFS banks has declined from a peak of 50.3 percent in 2002, due to the closure of a number of banks in 2003, including Deutsche Bank and Dresdner Bank, and the remarkable credit growth in the domestic financial sector.

Figure 10. Economic Significance of the IFS Sector



Sources: Central Bank of Ireland; Central Statistics Office; Department of Finance; and IDA.

108. **The insurance sector has become one of the major financial services activities in Ireland, as many of the world's leading insurance and reinsurance companies have established there**.[21] As a result, Ireland is now Europe's largest cross-border life insurance center and one of the largest reinsurance markets in the world.

109. **Countries with the largest presence in the IFS sector are (besides Ireland itself) the U.S., the U.K., and Germany, which together account for 40 percent of projects** (Table 7). U.S. firms dominate the funds sector, accounting for about one-third of all funds companies operating in Ireland. Despite the closure of three German banks in 2002, German banks still account for about 10 percent of all banks in the IFS sector.

Table 7. Ireland: IFS Companies by Top Ten Domiciles

Country	Share (in percent)
U.S.	20.4
Ireland	19.7
U.K.	9.7
Germany	9.7
Italy	7.4
Netherlands	5.2
Bermuda	4.9
France	3.8
Belgium	2.5
Luxembourg	2.2

Source: *Finance Dublin Yearbook 2005*.

Regulation and supervision

110. **All banking, securities, and insurance activities are subject to supervision according to rules and regulations applicable in Ireland**. IFS institutions have always received full licenses to operate in Ireland, and no regulatory distinctions have been made between these institutions and financial institutions in the domestic financial system.

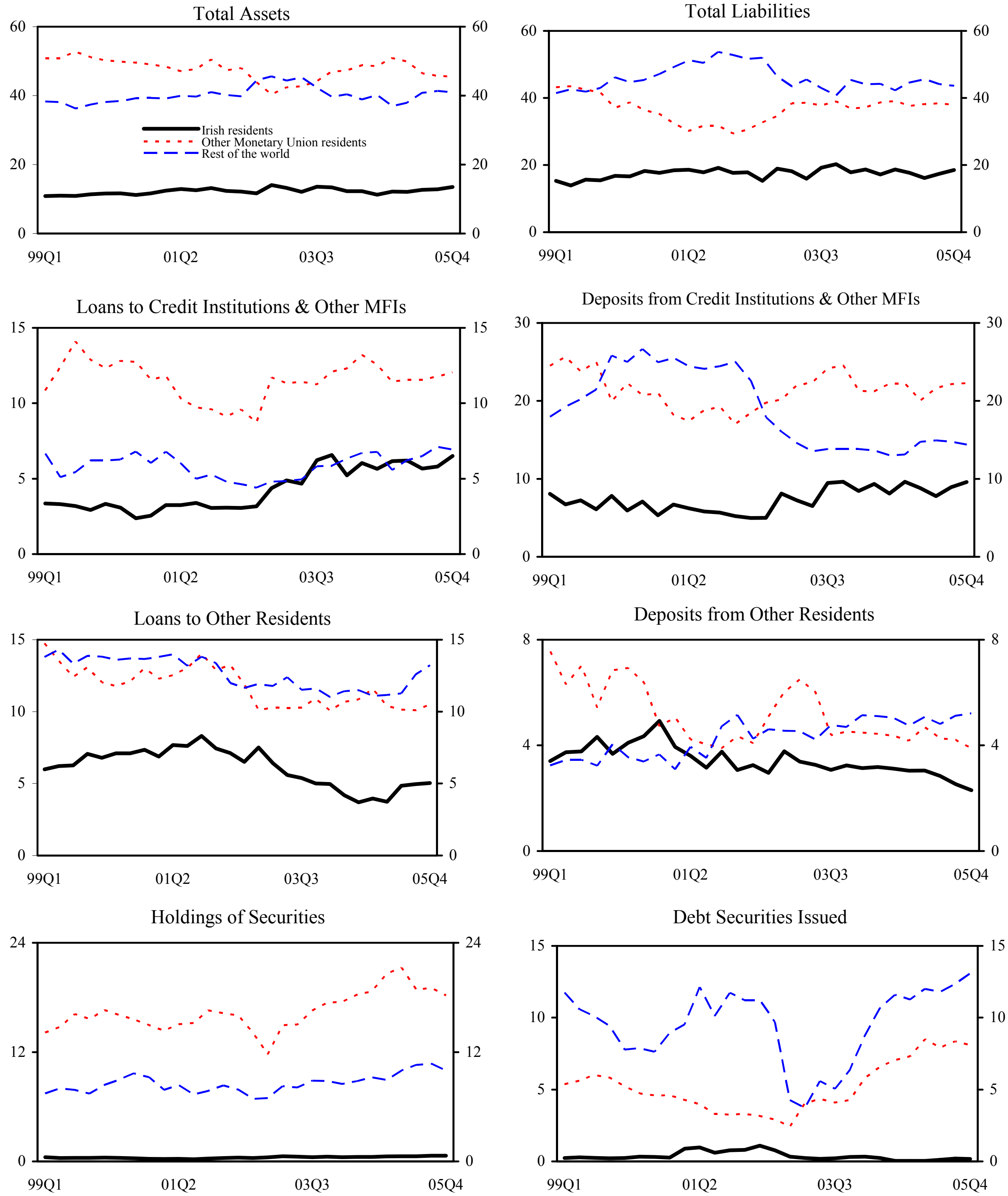
111. **In prioritizing resources for supervisory purposes, the IFSRA does not distinguish between domestic and IFS institutions.** The allocation of resources reflects the assessments of inherent risks, business processes, and the potential impact of failure on the Irish system. The latter criterion does mean, however, that IFS institutions will generally receive less supervisory attention than non-IFS institutions.

C. Linkages with the Domestic Economy

112. **Linkages between IFS banks and the domestic sector are limited and mainly on the funding side** (Figure 11). Total liabilities with Irish residents account for 40 percent of GDP, while assets held against Irish residents stand at about 30 percent of GDP. On the funding side, IFS banks are net borrowers in the Irish interbank market; however borrowing from Irish financial institutions, although increasing since 2003, accounts only for 9.6 percent of IFS banks' liabilities. Borrowing from other Irish residents accounts only for about 2 percent of IFS banks' liabilities. About one-third of that borrowing is intra-IFS and mainly in foreign currency.

[21] Subsidiaries of foreign groups are key players in the IFS sector, selling into other EU states.

Figure 11. IFS Sector: Geographical Distribution of Assets and Liabilities, 1999–2005 1/
(In percent of total assets)



Source: Central Bank of Ireland.
1/ Legend in upper left panel applies to all panels.

113. **Lending to the domestic Irish economy is small and consists mainly of revolving credits and other short-term facilities**. IFS banks' domestic lending accounts for about 5 percent of IFS banks' assets. Further, the vast majority of the lending which does exist is to other financial intermediaries, with about two-thirds of the domestic lending being to other entities in the IFS sector (Table 8).

Table 8. IFS: Sectoral Distribution of Lending to Irish Residents 1/

	In Percent of Lending to Irish Residents	In percent of GDP
Financial intermediation	88.9	9.7
Construction	2.4	0.3
Real estate and business activities	2.4	0.3
Manufacturing	1.6	0.2
Electricity, gas and water supply	1.5	0.2
Transport, storage and communications	1.2	0.1
Wholesale/retail trade and repairs	1.2	0.1
Other	0.8	0.1

Source: Central Bank of Ireland.
1/ As of September 2005.

114. **Linkages between financial institutions in the IFS sector and the domestic financial system, while strengthening as IFS credit institutions have increased their presence in the Irish interbank market, thus remain limited**. In particular, contagion risks are small because non-Irish counterparts still remain the main sources of interbank funding for both IFS and non-IFS institutions. Moreover, even a severe deterioration of domestic macroeconomic conditions is likely to have a limited impact on IFS banks as their exposure to the domestic industrial sector is small.[22]

D. Vulnerabilities and Soundness

115. **As IFS banks are strongly linked to major industrialized countries, macroeconomic developments in these countries could affect IFS banks' financial stability**. Total assets and liabilities with non-Irish residents account for over 80 percent of IFS banks' balance sheets. On the asset side, IFS banks are mostly exposed to Italy, Germany, and the U.K. among EU countries, and to the U.S. among non-EU ones. As a result, a cyclical slowdown in Europe or the U.S. would reduce revenues from interest margins and could increase the amount of nonperforming loans. Declining equity values could also lead to a reduction of banks' financial wealth, as well as commissions and fees. These effects are somewhat mitigated because of the geographical diversification across European countries.

116. **More specifically, the most important sources of vulnerability for IFS banks come from exposure to foreign financial institutions** (Table 9). Interbank and securities are the main sources of funds, with the former accounting for 41 percent, and the latter about

[22] Domestic financial institutions' exposure to non-MFIs in the IFS sector, at 2 percent of total assets, is also very small and has been on a declining trend since 2002.

21 percent of total assets. IFS banks conduct about half of their interbank lending and borrowing activities with European financial institutions. On the liability side, IFS banks are mostly exposed to the U.K., Germany, and Belgium and, to a lesser extent, the U.S. The largest exposure on the interbank market is with counterparts in Belgium and Italy. The largest currency exposure is to the U.S. dollar, which accounts for about 30 percent of IFS banks' cross-border business.[23]

Table 9. IFS: Sectoral Distribution of Lending to Non-Irish Residents 1/

	In Percent of Lending to Non-Irish Residents	In percent of GDP
Financial intermediation	60.2	31.7
Real estate, renting, and business	11.6	6.1
Transport, storage, and communications	10.6	5.6
Electricity, gas and water supply	3.9	2.1
Manufacturing	3.5	1.8
Personal (private households)	2.6	1.4
Construction	2.2	1.2
Other	2.2	1.2
Other community, social, & personal services	2.2	1.2
Wholesale/retail trade and repairs	1.1	0.6

Source: Central Bank of Ireland.
1/ As of December 2005.

117. **As shown in Figure 8 in the main body of this report, IFS banks' capitalization and liquidity are strong, but profitability is lower than their European peers'**. IFS banks exhibit regulatory capital levels well above the regulatory minima, both in terms of total capital and Tier 1 capital. The regulatory capital ratio stood at 16.5 percent as at end-2005, down from 19.1 percent in 2000, with a large fraction of total capital being composed of Tier I capital. Nonperforming loans (NPLs) are low.[24] Liquidity is high and well above the minimum statutory requirement. The loan-to-deposits ratio (including financial intermediation) is high at 2.7, reflecting the reliance of IFS banks on wholesale funding. The profitability of IFS banks, as measured by return on assets (ROA) and return on equity (ROE), is lower than banks EU-13 countries, reflecting the IFS banks' implicit low-risk strategy, with a large portfolio of securities holdings and low-spread interbank positions.

[23] Since a large share of IFS transactions are with European counterparts, more than half of the IFS banks' cross-border assets and liabilities are denominated in euros.

[24] As of end-December 2005, NPLs accounted for only 0.3 percent of aggregate loans, while the ratio of NPLs net of provisions to capital was -0.7 percent.

E. Conclusions

118. **IFS institutions deal primarily with cross-border customers and, therefore, they are vulnerable to economic factors and cycles in other countries and reputational risks**. Financial sector failures in IFS banks are unlikely to have as strong an adverse impact on Ireland as would failures in domestic Irish institutions. However, as highlighted by the 2000 FSAP team, it remains a concern that an IFS bank failure could trigger reputational problems for the IFSRA. Further, any major decline in the volume of financial sector activities would have repercussions on the domestic economy through a reduction in banks' profits and fiscal revenue, lower employment, and underutilization of services infrastructure.

119. **Going forward, continued supervisory vigilance will be essential, as the IFS sector is expected to become more sophisticated, and linkages with the domestic financial system may grow**. From this perspective, the regulatory authority should consider conducting stress test on IFS institutions to identify those institutions that are vulnerable to particular shocks and implement corrective action measures. This would be consistent with the practice in other jurisdictions with large IFS sectors—for example, Luxembourg.