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Denmark: Financial System Stability Assessment, including Reports on Observance of Standards and Codes on the following topics, Banking Supervision, Insurance Supervision, Systematically Important Payment Systems, and Anti-Money Laundering and Combating the Financing of Terrorism

This Financial System Stability Assessment on Denmark was prepared by a staff team of the International Monetary Fund and the World Bank as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on September 8, 2006. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of Denmark or the Executive Board of the IMF.

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DENMARK

Financial System Stability Assessment

Prepared by the Monetary and Capital Markets and European Departments

Approved by Ulrich Baumgartner and Michael Deppler

September 8, 2006

This Financial System Stability Assessment is based on two visits to Copenhagen during November 7-18, 2005 and May 16-22, 2006 as part of the Financial Sector Assessment Program (FSAP). The FSAP team included: S. Kal Wajid (Mission Chief), Tonny Lybek (Deputy Mission Chief), Francois Haas, Vassili Prokopenko, Miguel Segoviano, Kalin Tintchev, and Jan Woltjer (all Monetary and Capital Markets Department); Robert Tchaidze (European Department); and Peter Hayward, Stefan Spamer, Henning Göbel, Kirsten Nordbø Steinberg, and Erik Huitfeldt (all external consultants). As part of the FSAP, the Fund also conducted the AML/CFT assessment for Denmark during February 27-March 15, 2006. The assessment was conducted by Richard Lalonde (Team Leader), Paul Ashin, Margaret Cotter, Giuseppe Lombardo, and Navin Beekarry (all Legal Department). In addition to discussions with officials and market participants, the FSAP team relied on the relevant statutes and regulations as well as self assessments prepared by the authorities. Following are the main findings, which were discussed with the authorities on May 22, 2006 and during the Article IV consultation discussions in June 2006:

- The financial system is generally resilient and well supervised, underpinned by an effective legal and financial infrastructure. The recent strong performance of the sector, driven by rapidly expanding credit and an exuberant housing market will be difficult to sustain. To forestall any potential problems in the financial sector, supervisors should intensify efforts to monitor risks and use stress testing more effectively in assessing banking system vulnerability. The authorities should also make greater use of their authority to require additional capital as appropriate in individual cases.

- The mission found generally a high degree of compliance with the international financial standards and codes. Nonetheless, the autonomy and accountability of the DFSA should be entrenched by providing the agency a statutory basis and granting it greater budgetary autonomy. While the regulatory framework has worked well in the current environment, it could benefit from upgrading the guideline on internal controls to an Executive Order and broadening the coverage of fit-and-proper requirements.

The main authors of this report are S. Kal Wajid, Tonny Lybek, Vassili Prokopenko, Francois Haas, and Robert Tchaidze.

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	Anti–Money Laundering
BCP	Basel Core Principles
CCP	Central Counterparty
CD	Certificates of Deposits
CDD	Customer due diligence
CFT	Combating the Financing of Terrorism
CLS	Continuous Linked Settlement
CP	Core Principle
CPSIPS	Core Principles for Systemically Important Payment Systems
CPSS	Committee for Payments and Settlement Systems
CSD	Central Securities Depository
CSE	Copenhagen Stock Exchange
CVR	Central Business Register
DBA	Danish Bankers Association
DCCA	Danish Commerce and Companies Agency
DFSA	Danish Financial Supervisory Authority
DN	Danmarks Nationalbank
DNFBP	Designated non-financial businesses and professions
DVP	Delivery-versus-Payment
EL	Expected Losses
ESCB	European System of Central Banks
EU	European Union
FBA	Financial Business Act
FBC	Financial Business Council
FI	Financial Institutions
FIU	Financial Intelligence Unit
FoP	Free of Payment
FSA	Financial Supervisory Authority
FSAP	Financial Sector Assessment Program
GF	Guarantee Fund for Depositors and Investors
IAS	International Accounting Standards
ICP	Insurance Core Principle
ICSD	International Central Securities Depository's
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions'
IT	Information Technology
LOLR	Lender-of-Last-Resort
MCM	Monetary and Capital Markets Department

ML/FT	Money Laundering/Financing of Terrorism
MLA	Mutual Legal Assistance
MoEB	Ministry for Economic and Business Affairs
MoU	Memorandum of Understanding
NAO	National Audit Office
NPO	Non-profit Organizations
OTC	Over-the-Counter
PEP	Politically exposed persons
ROSC	Report on Observance of Standards and Codes
RSS	Recommendations for Securities Clearing and Settlement Systems
RTGS	Real-Time Gross Settlement
SME	Small and Medium-sized Enterprises
SØK	Serious Economic Crime
SSE	Stockholm Stock Exchange Ltd
SSS	Securities Settlement Systems
STA	Securities Trading Act
STR	Suspicious Transaction Reports
UL	Unexpected Losses
UNSCR	UN Security Council resolutions
VP	Danish Central Securities Depository

I. OVERALL STABILITY ASSESSMENT

1. **The financial system exhibits generally sound fundamentals.** The system appears resilient and is well supervised, underpinned by an effective legal and financial infrastructure. It is currently enjoying the fruits of robust economic growth, low unemployment and inflation, and fiscal and current account surpluses. Lending continues to be strong, coinciding with rising housing prices. Profitability of financial institutions is at record levels and the number of corporate bankruptcies is the lowest in many years.

2. **The recent strong performance, driven by rapid credit growth and an exuberant housing market, will be difficult to sustain.** The advanced cyclical phase of the economy is most evident in the expansion of monetary and credit aggregates and higher asset prices. Housing prices in Denmark have outpaced those in the other Nordic countries, underpinned by the low interest rates, new types of financing, and the property tax freeze. A combination of continued prudent macroeconomic policies, structural reforms, and actions to avoid unbalanced housing market developments will be needed to maintain macroeconomic and financial stability.

3. **A key lesson of the early 1990s when the banking system was in distress, is the fact that financial sector problems tend to incubate in good times.** While the macroeconomic environment is now much better, and banks have improved their risk management techniques, capital cushions are expected to decline with the implementation of Basel II. Stress test results show that while the system can absorb sizable shocks, a very severe scenario could entail significant shortfalls in required capital. As large investors in mortgage bonds, banks have benefited in the recent past from revaluation gains from declining interest rates. Prospective interest rate increases would likely have the opposite effect in the near term.

4. **Mortgage finance institutions are financially sound and risks in their balance sheets are well contained by design.** They issue mortgage bonds that must have cash flows that fully match those of the loans they make, thereby allowing individual borrowers access to low cost financing in the capital market. The impending EU regulation on covered bonds is likely to pose significant transitional issues for the mortgage bond system. When it is amended in accordance with the EU regulations, some of its attractive features would be traded off against the potential long term benefits of opening up mortgage bond issuance to banks. To fully realize these benefits, it would be important to ensure continued effective disclosure and transparency and a level playing field among market participants.

5. **The life-insurance and pension funds industry has largely addressed the problems stemming from past issuance of contracts with high guaranteed returns.** This has been helped by higher interest rates, reductions in guaranteed rates, and some degree of hedging. However, life-insurance companies and pension funds continue to sell products with guaranteed returns that may cause problems later. This requires continued monitoring by the Danish Financial Supervisory Authority (DFSA) of companies' ability to meet their long-term obligations under varying interest rate environments.

6. **The payment and securities clearing and settlement systems are generally functioning effectively and efficiently.** The amendments to the Securities Trading Act (STA), making explicit the oversight responsibilities of the Danmarks Nationalbank (DN), further enhance the system.

7. **The mission found a high degree of compliance with the international supervisory standards it assessed.** The DFSA—an autonomous institution under the Ministry of Economic and Business Affairs—conducts effective risk-oriented supervision. Going forward, lower capital cushions of many supervised institutions, new supervisory techniques (Basel II), and international coordination pose challenges for the DFSA. Among these are building capacity to validate models and identify emerging risks and strengthening mechanisms for effective coordination with other supervisory authorities in the region. Box 1 summarizes the mission's main recommendations.

Box 1: Denmark FSAP—Main Recommendations

Near-term financial stability

- Any easing of capital requirements under Basel II should be done gradually, and supervisors should make use of their regulatory authority to require additional capital as appropriate in individual cases. The mission supports the regulation limiting the decreases in capital requirements in 2007-08 for institutions that would use advanced methods for determining their capital adequacy.

- Efforts to better monitor, compile information, and model the impact of various shocks should be intensified through strengthened stress testing capacity at the DFSA. The DFSA should consider more frequent inspections as warranted.

- Close monitoring of the housing market, strict adherence to supervisory rules, and effective consumer information about risks are recommended to avoid unbalanced housing market developments which could adversely affect financial stability.

Structural issues

- The autonomy and accountability of the DFSA should be entrenched by providing the agency a statutory basis and granting it greater budgetary autonomy. With respect to the latter, separation of its legislative and regulatory activities and supervisory budgets should be considered.

- The resources available to the DFSA should be reassessed in light of the need to expand the agency's capacity to verify banks' internal models to calculate liable capital, undertake stress testing, and ensure an effective framework for anti-money laundering and combating financing of terrorism.

- While the regulatory framework has worked well, it would benefit from upgrading the guideline on internal controls to a more binding Executive Order and broadening the coverage of fit-and-proper requirements.

II. MACROECONOMIC SETTING, FINANCIAL STRUCTURE AND RISKS

A. Macroeconomic Background and Risks

8. **Denmark's macroeconomic performance has been strong, but the economy now faces the risk of overheating.**[1] Economic growth reached 3.2 percent in 2005 and remained strong in early 2006, driven in part by rapidly appreciating house prices. Inflation—anchored by the euro-peg—is close to 2 percent and unemployment reached record low levels in 2006. The general government balance realized a surplus of some 4 percent of GDP in 2005 and the external current account surplus reached 3.0 percent of GDP.

9. **Monetary and credit aggregates and asset prices have increased rapidly.** In 2005, bank lending grew 21 percent and loans by mortgage credit institutions increased 12 percent. House prices in Denmark have outpaced those in the other Nordic countries (Figure 1), increasing by 22 percent on average during 2005, underpinned by low interest rates, increased demand, the property tax freeze since 2001, and new and more flexible forms of financing.[2] To avoid unbalanced housing market developments, close monitoring of the market, strict adherence to supervisory rules, and effective consumer information about the risks of over-borrowing are recommended Since 2002, the Danish stock market has outperformed most other Nordic indices (Figure 2).

10. **Trends in the debt structure of households suggest that they are becoming more susceptible to interest rate changes.** Household indebtedness increased to some 230 percent of disposable income—high by international comparison. The build-up largely reflects financing of consumption, real estate purchases, investment in pension funds, and other financial investments. The share of variable interest rate debt in total household debt has increased substantially and loans with variable rates accounted for about half of total mortgage loans at the end of January 2006. Low income households are most vulnerable to interest rate changes. Pockets of vulnerabilities remain in the corporate sector, although on the whole the sector has benefited from favorable conditions and bankruptcies have declined.

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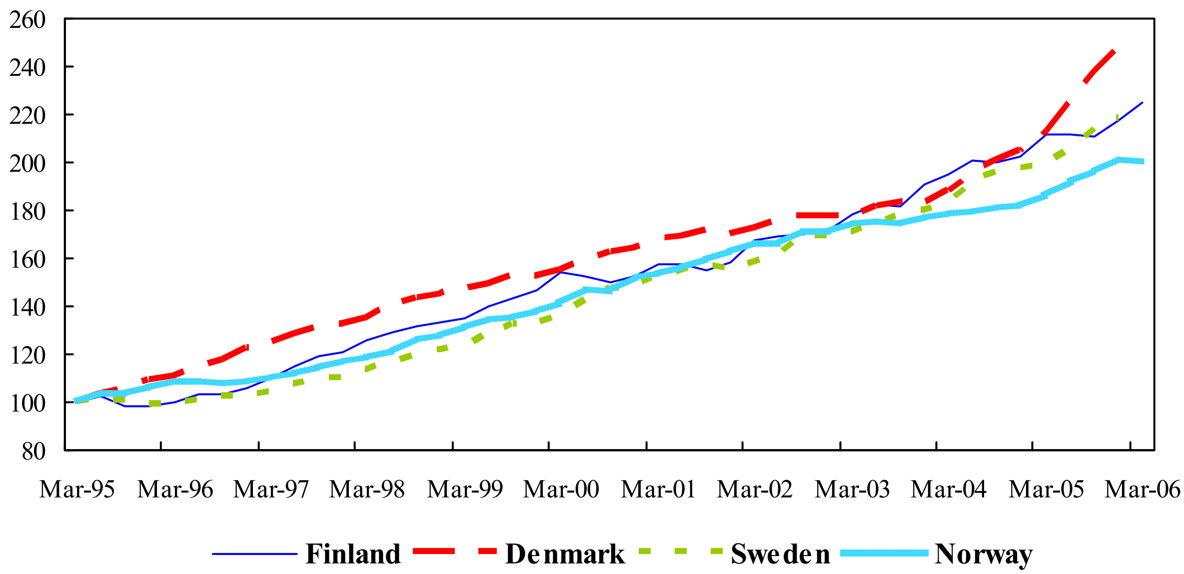
[1] Macroeconomic developments and policies are discussed in detail in the accompanying Staff Report for the 2006 Article IV Consultation (www.imf.org).

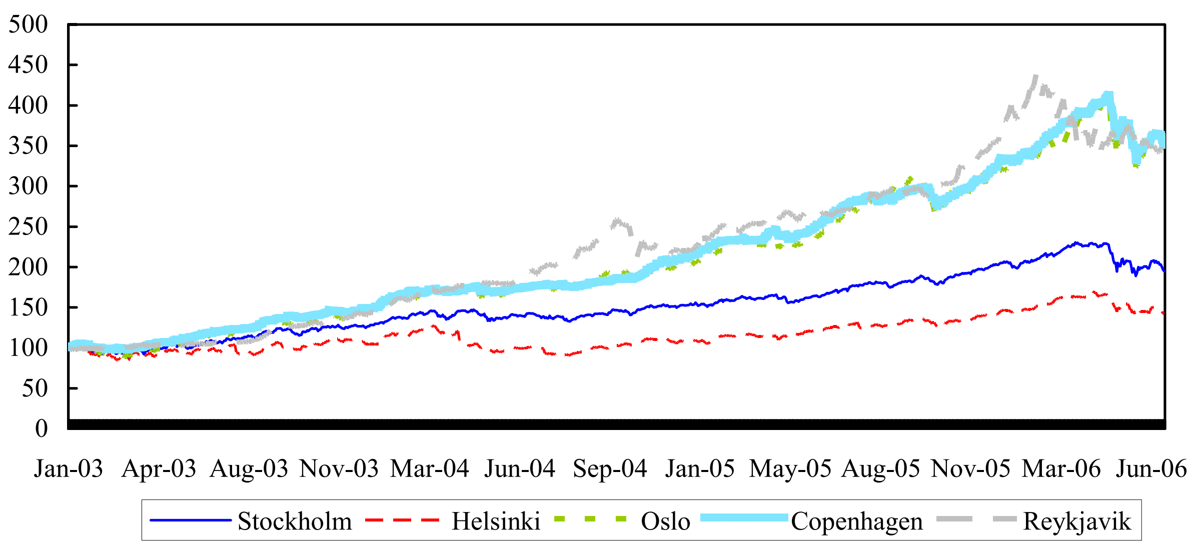
[2] See also the Selected Issues paper on housing market developments in Denmark.

Figure 1. Nordic Countries: Residential Real Estate Prices, March 1995–March 2006
(March 1995=100)



Source: National statistical offices, Haver.

Figure 2. Nordic Stock Exchanges: All Share Indexes, January 2003–June 2006
(January 2003=100)



Source: Datastream.

B. Financial Structure and Risks

11. **The Danish financial sector is deep, diversified, and dynamic, with total financial assets close to five times GDP (Table 1).** While credit institutions—commercial banks and mortgage banks—dominate the system, nonbank financial institutions—insurance companies and pension funds—and capital markets are also prominent. In particular, the mortgage bond market is sizable and its unique features have attracted considerable international interest. Conglomeration, cross-border operations, and concentration are key characteristics of the financial system in Denmark. A few large groups operate as conglomerates offering a wide range of services and products. The system is highly concentrated despite the presence of a large number of small institutions.

Commercial Banks

12. **At end-2005, total assets of commercial banks were around 194 percent of GDP.** Commercial banks include savings and cooperative banks, which are governed by the same legislation. The two largest banking groups—Danske Bank and Nordea Danmark—account for about 65 percent of commercial bank lending. The five largest banking groups account for approximately 79 percent of total loans and 83 percent of total assets.

13. **The banking sector is relatively competitive and efficient by international comparison even though it is highly concentrated.** Indicators of intermediation efficiency have been improving in recent years. In particular, the spread between lending and deposit rates and operating costs as a share of total assets have been declining, and banks are quick to adopt new technologies.[3] Nonetheless, both net interest income and net fee and commission income as a percent of total assets are higher than the EU-25 average. Concentration in the banking industry does not seem to have significantly impeded competition. The standard concentration ratios—the share of top five banks and the Herfindahl Index—are high but comparable to those in other countries, such as Belgium, Finland, and the Netherlands. Competition is intense among the large institutions and at the domestic regional level. The market is also quite contestable and an increasing number of institutions are providing cross-border banking services. Efforts to promote transparency can further increase competition and allay reported consumer concerns about banks' fees and charges.

[3] Based on rough comparison of intermediation spreads which may be influenced by the inclusion of mortgage banks in Denmark that traditionally operate with low margins.

Table 1. Denmark: Financial System Structure, 1995–2005

	Dec-95	Dec-00	Dec-01	Dec-02	Dec-03	Dec-04	Dec-05
				Number of institutions			
All banks	211	197	195	189	185	181	170
Commercial banks	200	186	186	180	176	172	161
Mortgage banks	10	10	8	8	8	8	8
Specialized banks	1	1	1	1	1	1	1
Insurance companies	206	199	189	171	165	162	160
Life insurance	52	63	58	43	41	37	36
Non-life insurance	154	136	131	128	124	125	124
Pension funds	104	89	85	82	81	78	77
Occupational pension funds	32	31	31	31	30	30	29
Company pension funds	72	54	50	47	47	44	44
Special pension funds	...	4	4	4	4	4	4
Brokerage houses	5	29	30	29	28	32	31
				Assets (in percent of GDP)			
All banks	208.7	250.8	274.3	296.5	305.1	321.2	331.9
Commercial banks	103.1	140.3	148.9	164.4	165.5	172.5	193.6
Mortgage banks	100.9	106.5	121.1	127.7	135.0	144.5	134.3
Specialized banks	4.7	4.1	4.3	4.4	4.6	4.1	4.0
Insurance companies	43.9	58.3	56.6	56.7	60.3	63.7	70.2
Life insurance	34.8	50.2	48.6	48.7	51.9	55.2	61.3
Non-life insurance	9.1	8.1	8.0	8.0	8.4	8.5	8.9
Pension funds	35.0	49.2	47.9	46.3	49.9	54.1	58.3
Occupational pension funds	14.3	20.8	20.4	20.2	21.4	23.1	24.5
Company pension funds	3.3	3.3	3.0	2.7	2.7	2.7	2.7
Special pension funds	17.4	25.0	24.5	23.4	25.8	28.3	31.1
Brokerage houses	0.1	0.1	0.1	0.1	0.1	0.1	0.1
				Number of employees			
All banks	46,263	44,871	44,373	44,140	43,052	42,788	43,879
Commercial banks	43,135	40,906	40,933	39,957	38,740	38,685	39,714
Mortgage banks	3,128	3,921	3,394	4,134	4,261	4,048	4,111
Specialized banks	...	44	46	49	51	55	54
Insurance companies	13,959	13,374	13,228	13,046	13,157	13,665	13,553
Life insurance	2,064	1,442	1,606	1,709	1,723	2,365	3,248
Non-life insurance	11,895	11,932	11,622	11,337	11,434	11,300	10,305
Pension funds	1,036	1,289	1,365	776	840	818	1,290
Occupational pension funds	439	460	464	470	490	516	493
Company pension funds	35	42	39	40	40	38	36
Special pension funds	562	787	862	266	310	264	761
Brokerage houses	...	267	316	248	272	320	353

Source: The Danish Financial Supervisory Authority.

14. **The presence of foreign banks—mainly from other Nordic countries—is substantial.** Foreign ownership of Danish banks is significantly higher than the average for the EU countries. At end-2005, there were 9 foreign subsidiaries, 26 foreign branches, and 271 foreign credit institutions providing some cross-border banking services into the country.[4] Banks with Nordic parents accounted for approximately 84 percent of foreign banks' total assets. The largest of them, Nordea, is currently contemplating transforming itself into a European Company based in Sweden, with a branch structure. The Danish branches will be systemically important and pose a number of supervisory challenges.

15. **Banks' report solid financial soundness indicators**, **but buffers in the system are being lowered (Table 2).** Capital adequacy and asset quality remains high, with the overall capital adequacy ratio at 13¼ percent and accumulated provisions at 1.0 percent of total loans outstanding at end-2005. Banks reported record profits in 2005—21¼ percent return before tax on equity compared with 17¾ percent in 2004. Profitability was boosted by growth in fees and commissions, primarily from securities trading and refinancing activity. The system-wide income to cost ratio improved from 1.7 to 2.0.

16. **The implementation of the International Financial Reporting Standards (IFRS) has allowed banks to revoke previous provisions and banks intending to use internal models under Basel II would likely seek to lower their capital requirements.** Ten Danish banks have indicated that they would use advanced internal ratings under Basel II to be implemented in 2007-08. Against the backdrop of rapidly expanding bank balance sheets and prospective changes in the interest rate environment, the reduction of the capital buffer needs to be approached with caution and implemented gradually. In this context, the regulation limiting the reduction of capital requirements during 2007-09 for banks using advanced methods is welcome. The DFSA would need to carefully assess capital adequacy in individual institutions and require additional capital commensurate with the risk profile of each institution, consistent with Pillar II of Basel II.

Stress Tests

17. **Credit Risk: Stress tests show that commercial banks can withstand sizable shocks, but would experience substantial capital shortfalls if subjected to severe shocks**. Results of both top-down and bottom-up stress scenarios (Box 2) that evolve over three years show that by the third year the mandatory capital adequacy ratio of the system is breached but manageable, and only in the worst case scenario is the shortfall substantial.

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[4] For an analysis of foreign ownership of Danish commercial banks, see "Foreign Banks in Denmark" by Jakob Windfeld Lund and Kristine Rasumssen, *Monetary Review, 1st Quarter 2006* (Copenhagen: Danmarks Nationalbank). See: http://www.nationalbanken.dk/C1256BE9004F6416/side/Monetary_review_2006_1_Quarter!opendocument.

Table 2. Denmark: Financial Soundness Indicators of Commercial Banks, 2000–05

(In percent, unless indicated otherwise)

	Dec-00	Dec-01	Dec-02	Dec-03	Dec-04	Dec-05
Capital Adequacy						
Regulatory capital to risk-weighted assets (Tier 1+Tier 2)	12.7	13.0	13.5	14.0	13.5	13.2
Tier 1 capital to risk-weighted assets	9.9	9.7	10.2	10.8	10.7	10.2
Capital (net worth) to assets 1/	6.7	6.2	5.7	5.9	5.7	5.7
Asset Composition and Quality						
Sectoral distribution of lending to residents						
Nonfinancial companies	28.9	32.7	30.9	35.9	36.0	33.8
Financial institutions	30.3	27.3	31.8	26.2	22.2	26.1
General government	2.3	2.6	2.5	2.9	2.8	2.4
Households	37.1	36.1	33.9	34.2	37.8	36.2
Other	1.3	1.3	0.8	0.8	1.2	1.6
Geographical distribution of lending to non-residents						
Euro area	26.7	27.8	24.3	21.1	20.6	20.0
Great Britain	26.8	22.8	23.3	26.6	28.4	26.1
Sweden	14.6	21.3	24.8	26.4	29.0	29.5
Norway	4.9	8.4	10.3	8.4	8.7	10.0
USA	5.1	5.4	5.2	5.1	3.2	4.2
Other countries	22.0	14.4	12.1	12.3	10.1	10.2
Nonperforming loans to gross loans and guarantees	0.5	0.5	0.6	0.6	0.5	0.3
Nonperforming loans to gross loans	0.7	0.7	0.9	0.8	0.7	0.4
Nonperforming loans net of provisions to Tier 1 capital	0.9	1.3	2.0	2.0	1.8	0.9
Provisions to nonperforming loans	81.1	76.5	66.5	63.0	66.0	75.7
Stock of total provisions to total gross loans	2.5	2.3	2.2	2.3	1.5	1.0
Loan-loss provisions made during the year to total gross loans	0.3	0.4	0.3	0.4	0.1	-0.03
Sum of large exposures to Tier II capital 2/	103.2	128.8	133.8	139.1	139.7	146.1
Foreign-currency loans to total loans 3/	...	...	...	35.9	38.9	42.2
Loans to assets	73.7	70.0	67.9	68.3	66.4	66.0
Credit growth	14.8	7.4	1.5	4.6	14.2	24.7
Earnings and Profitability						
Return on assets before tax	...	1.1	1.0	1.2	1.3	1.3
Return on assets after tax	...	0.8	0.7	0.9	0.9	1.0
Return on equity before tax	...	17.3	16.7	20.8	17.7	21.2
Return on equity after tax	...	12.8	12.1	15.4	13.7	16.3
Net interest income to gross income	63.1	69.9	72.1	66.9	64.4	61.9
Noninterest income to gross income	36.9	30.1	27.9	33.1	35.6	38.1
Noninterest expenses to gross income	66.4	61.7	63.3	57.3	61.6	57.4
Liquidity						
Liquid assets to total assets (exclusive of interbank lending)	4.3	5.3	7.7	8.0	6.1	7.4
Liquid assets to total assets (inclusive of interbank lending) 4/	29.6	25.0	28.3	29.3	26.6	30.2
Liquid assets to short term liabilities 5/	110.7	91.6	112.3	117.0	103.3	120.6
Gross loans to deposits	114.1	113.8	109.4	103.3	105.4	115.3
Liquidity coverage as a percentage of the requirement	...	152.8	153.1	189.5	176.9	140.1
Net external liabilities to total liabilities 6/	2.0	7.4	8.9	12.1	10.5	13.4
Sensitivity to Market Risk						
Interest rate loss exposure to Tier 1 capital 7/	2.6	3.5	2.6	3.4	1.8	1.5
FX exposure to Tier 1 capital 1 8/	6.4	7.3	8.4	7.6	5.2	5.9
FX exposure to Tier 1 capital 2 9/	0.1	0.1	0.1	0.1	0.1	0.3
Net position in equities to capital	36.9	31.2	24.1	28.1	29.9	19.9
Net position in financial derivatives to capital	-3.6	-1.6	-7.7	-7.5	-6.9	0.1
Earnings per share	0.7	0.9	0.9	1.2	1.2	1.7
Market value to book value ratio	...	0.9	0.9	1.3	1.6	1.9
Indicators for other sectors						
Number of corporate bankruptcies	175.0	214.0	188.0	232.0	225.0	226.0
Real estate price index (March 1995=100)	165.9	175.5	199.7	194.9	231.6	307.2

Sources: The Danish Financial Supervisiory Authority, Danmarks Nationalbank and Statistics Denmark.

1/ Shareholders' equity to total assets.

2/ Large exposures are defined as the sum of assets and off-balance-sheet items that, after a reduction for secured exposures, exceed 10 percent of the combined Tier II and Tier III capital.

3/ 2005 figure corresponds to July 2005.

4/ Included in liquid assets are on balance sheet cash, loans to MFIs and bonds with original maturity of less than a year.

5/ Included in short-term liabilities are deposits available on demand and time deposits with original maturity of less than a year .

Box 2. Stress Tests—Credit Risk

The FSAP mission conducted top down and bottom up stress tests. Severe, but plausible, single factor shocks and macroeconomic scenarios were developed in consultation with the DN and DFSA. The size of the shocks were based on historical information covering at least an entire economic cycle and encompassing episodes of financial distress. In the bottom-up approach the DFSA requested the banks to run the scenarios and shocks through their internal models. The top down approach was based on a portfolio credit risk based methodology implemented by staff. The scenarios were as follows:

Scenario 1—boom-bust in real estate prices and credit. Under this scenario, decreases in asset returns—resulting from the sharp increase in asset prices and high levels of indebtedness in the economy—lead economic agents to revise their expectations about asset prices turning the boom into a bust. Asset prices fall and credit growth decreases (down by 14.2 percent). With reverse wealth effects, consumption, aggregate demand, and GDP falls, and unemployment increases (relative to baseline). Depressed collateral prices (down by 27 percent), higher unemployment (up by 3.8 percent) and decreasing GDP (down by 6.8 percent) have a negative impact on banks' assets, increasing the proportion of non-performing loans.

Scenario 2—foreign shock stemming from an abrupt correction in global imbalances. Under this scenario, the Danish kroner, in line with the euro, appreciates against the U.S. dollar and other currencies (up to 29 percent), leading to a loss of competitiveness and lower demand for Danish goods. The trade balance deteriorates, GDP falls (down by 4.1 percent), and unemployment rises (up by 3.2 percent), relative to baseline. There is a shift in expectations, negatively affecting private consumption and depressing economic activity further. This, in turn, negatively affects non-performing loans, increasing banks' losses.

Scenario 3—boom-bust in real estate prices and credit plus a strong increase in European interest rates. This scenario is similar to scenario 1 above, but also assumes that the continuation of high oil prices increases inflationary pressures in Europe, prompting the European Central Bank to significantly increase interest rates. Danmarks Nationalbank follows suit and policy interest rates rise (250 bp). The reassessment of asset values is reinforced by higher interest rates and higher debt servicing, turning the boom into a bust. Asset prices start falling, consumption decreases, aggregate demand contracts, GDP falls, credit growth decreases (down to 19.5 percent), and unemployment increases relative to baseline. Higher interest rates, depressed collateral prices (down by 41.9 percent), higher unemployment (up by 5.1 percent), and decreasing GDP (down by 9.2 percent) negatively impact banks' assets and non-performing loans.

The impact of the scenarios on capital adequacy ratio are summarized below.

Stress Test: Resulting Capital Adequacy Ratios (percent)

	Scenario 1	Scenario 2	Scenario 3
Top-down			
2006	8.5	8.5	8.6
2007	8.3	8.3	8.0
2008	6.7	8.1	5.7
Bottom-up			
2006	10.5	10.1	9.3
2007	9.0	9.2	7.4
2008	6.6	7.7	4.5

Source: Banks' staff estimates.

18. **Stress test results need to be interpreted with caution.** The most severe scenario attempts to simulate hypothetical extreme events with a low likelihood. The model also does not take into account the second round portfolio adjustments aimed at limiting the impact on profitability which is, typically, the first line of defense.[5] In addition, the results are based on the average banking system but will effect individual banks differently.

19. **The cumulative effects of the macroeconomic shocks are reflected in the increasing probabilities of default and expected and unexpected losses over the three-year period.**[6] Credit risk could materialize if the accelerated and acute increase in house prices and levels of leverage in the economy later led to a collapse in real estate prices. The results suggest that recent developments, which appear to increase the vulnerability of households to interest rate fluctuations, in combination with an external shock (scenario 3) could reinforce the stress on the banking system. Credit risk thus remains a major risk factor for the banking system.

20. **Market Risk: On average, exposure to market risk seems relatively modest, but may vary significantly among institutions.** The impact of individual shocks to interest rates, equity prices, real estate prices, and the exchange rate on capital of banks is modest (see Appendix). Most loans in banks' portfolios have flexible interest rates, so that the effects of the single factor shocks are transmitted primarily through credit risk. These shocks can potentially result in losses on banks' holdings of financial instruments, mainly mortgage bonds. However, banks dynamically hedge most of this portion of their portfolio, adjusting it in response to changes in interest rates so as to maintain a matched duration. Banks' net open position in foreign exchange (including the euro) is also modest, so that even a substantial exchange rate shock results in only limited impact on banks' capital adequacy.

21. **Liquidity and Contagion Risks: Analysis of banks' holdings of large amounts of government and mortgage bonds acceptable as collateral to the Nationalbank indicate that these risks are not significant.** At end-2005 banks' holdings of bonds, of which most are collaterable assets, represented 19.5 percent of total assets and 49.5 percent of all deposits. The DN's analysis of uncollateralized bilateral exposures in the interbank market indicates the risk of interbank contagion is insignificant and manageable.[7]

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[5] Banks' baseline projections indicate an upward trend in profits. The stress testing model assumes that profitability remains at the 2005 level which may be difficult to sustain under the stressed scenarios. To this extent the negative impact on capital may be understated.

[6] Expected losses (EL) are defined as EL= PoD x Exposure x LGD, where PoD is the probability of default and LGD is the loss-given-default of each loan in a bank's portfolio. While it is important to estimate ELs, estimating "unexpected losses" (ULs) is fundamental to the effective management of credit risk. Economic capital should be available to cover ULs.

[7] The approach and results are presented in Danmarks Nationalbank's *Financial Stability Report, 2005* and in *Contagion Risk in the Danish Interbank Market* by Elin Amundsen and Henrik Arnt, Danmarks Nationalbank Working Papers 2005–29, Danmarks Nationalbank, Copenhagen. Liquidity in the payment systems is discussed in "Protection of Settlement in Danish Payment Systems" in Danmarks Nationalbank's *Financial Stability Report, 2006*.

C. Mortgage Credit Banks

22. **Danish mortgage financing system is profitable, transparent, and effective in delivering low cost mortgage financing to borrowers.** Specific legislation, allows specialized mortgage credit institutions to issue mortgage bonds on behalf of the borrowers. The framework is supported by an effective system of land registration as well as clearly defined procedures for foreclosures. With total assets close to 135 percent of GDP, mortgage credit institutions are slightly smaller than the commercial banks and their reported soundness indicators are good (Table 3). Mortgage bonds as well as the mortgage credit institutions are highly rated by international rating agencies, and mortgage bonds are accepted by the Nationalbank as collateral.

23. **The mortgage credit system faces significant challenges.** In recent years mortgage financing has undergone several changes and new products have emerged, including variable interest rates, deferred amortization, and capped adjustable rate loans. Variable rate mortgage loans now account for about half of all such loans. New types of loans necessitate new types of bonds to observe the balance principle. The wider range of mortgage products could negatively impact the overall pricing and liquidity of the mortgage market if it results in a less homogeneous mortgage market with a series of smaller and less liquid bonds. This could affect the appetite of investors—mostly institutional investors—for Danish mortgage bonds.[10]

24. **The impending EU regulation on covered bonds is likely to pose a transitional challenge for the Danish mortgage system.** As covered bonds, the loan to value on mortgage bonds will need to be observed continuously instead of only at the origination of the loan. Besides mortgage credit institutions, banks would be allowed to issue such covered bonds. This would allow more funding flexibility, but would tend to limit the direct access to the capital market provided to the borrower under the current system. In principle, competition should ensure efficient pricing of covered bonds. However, the two largest banks and regional banks as a group would be in a more advantageous position to issue covered bonds because of their branch networks and greater proximity to customers. With a broader range of available collateral and possibilities to provide additional capital, banks would be in a better position to adapt to loan to value fluctuations compared to mortgage finance institutions. Realization of the potential long run benefits of covered bonds would place a heavy premium on effective disclosure and transparency and a level playing field among market participants.

[10] See "Trends in Mortgage-Credit Financing: the Market and its Players," by Lars Jul Hansen, in *Monetary Review*, 1st Quarter, 2006, Danmarks Nationalbank, Copenhagen.

Table 3. Denmark: Financial Soundness Indicators for Mortgage Credit Institutions, 2000–05

	Dec-00	Dec-01	Dec-02	Dec-03	Dec-04	Dec-05
Capital Adequacy						
Regulatory capital to risk-weighted assets (Tier 1+Tier 2)	12.6	11.5	11.7	11.6	12.4	12.7
Tier 1 capital to risk-weighted assets	11.5	11.1	11.2	11.0	11.6	11.3
Capital (net worth) to assets 1/	5.3	4.8	4.8	4.9	4.7	5.3
Asset composition and quality						
Residential real estate loans to total loans 2/	76.1	76.7	76.7	77.0	77.0	77.8
Commercial real estate loans to total loans 2/	22.3	21.6	21.7	21.4	21.4	20.8
Other loans to total loans	1.6	1.7	1.6	1.6	1.5	1.5
Adjustable rate lending to total lending	8.7	19.2	26.7	33.2	41.3	45.8
Stock of total provisions to total loans and provisions	0.3	0.3	0.2	0.2	0.2	0.1
Write offs and loan loss provisions made during the year	-0.03	0.01	0.01	0.01	0.02	0.0
FX loans to total loans	1.4	4.6	6.4	6.1	5.7	4.8
Credit growth	3.8	9.2	7.7	8.4	6.5	11.1
Loans to capital ratio 3/	15.1	15.7	15.8	15.4	14.8	15.4
Earnings and Profitability						
ROA before tax	...	0.4	0.4	0.5	0.5	0.6
ROA after tax	...	0.3	0.3	0.4	0.3	0.4
ROE before tax	9.1	8.7	8.6	10.5	9.3	10.9
ROE after tax	6.4	6.5	6.1	8.0	7.1	8.4
Operating income to operating expenses ratio 4/	2.7	2.6	2.5	2.9	3.1	3.6
Net interest income to gross income	94.1	97.0	94.9	85.8	91.9	95.0
Net non-interest income to gross income	-1.2	2.3	2.4	4.8	2.0	5.0
Noninterest expenses to gross income	39.2	37.5	38.0	34.7	36.5	35.2
Liquidity						
Liquid assets to total assets 5/	15.8	22.6	23.0	23.2	26.6	28.9
FX liabilities to total liabilities 6/	2.0	5.1	7.5	7.7	7.6	6.7
Sensitivity to market risk						
FX exposure to Tier I capital 7/	2.9	5.0	1.5	3.1	1.1	1.2

Sources: FSA and Danmark's National Bank.

1/ Shareholders' equity to total assets.

2/ Included in residential lending are lending for owner-occupied dwellings, private rental housing, subsidized housing. Commercial real estate lending includes lending for trade, industry, offices and agriculture.

3/ Defined as "gearing" by the FSA.

4/ Income on core activities including value adjustments for changes in current prices as a percentage of expenses on core activities including provisions. The indicator contains all profit and loss items except extraordinary items and tax.

5/ Included in liquid assets are items due from credit institutions and bonds.

6/ Bond liabilities in foreign currency to total liabilities.

7/ Calculated as the largest amount of the short-term currency exposures and the long-term currency exposures.

D. Insurance Companies

25. **The Danish insurance industry is well developed and its performance has generally improved following the difficulties early in this decade (Table 4)**. At end-2005, assets of life insurance and general pension funds amounted to almost 120 percent of GDP. The five largest companies account for about 55 percent of gross premiums and the ten largest for 73½ percent.[12] Assets of non-life insurance companies amounted to 9 percent of GDP at end-2005. This market is mainly one of individual business, motor, and household insurance, representing approximately 70 percent of the non-life market. In 2005, gross premiums amounted to 2.9 percent of GDP (Table 5). Life insurance companies and pension funds are covered by the same legislative framework. Reinsurance is mainly provided from the international market, although there are five captive Danish reinsurance companies that primarily reinsure risks originating from the group.

Table 4. Selected Financial Indicators for Life Insurance and Pension Funds, 2001–05
(In percent unless indicated otherwise)

	2001	2002	2003	2004	2005
Life insurance					
Gross premiums to GDP	3.72	4.01	4.23	4.23	4.37
Net premiums to GDP	3.67	3.95	4.19	4.21	4.34
Return on equity before tax	-13.65	2.86	14.37	11.74	11.34
Return on investments before tax on pension returns	-1.68	2.98	6.51	9.82	12.98
Ratio of operating expenses to gross premiums	7.17	7.31	7.21	6.55	5.79
Ratio of expenses to provisions	0.7	0.7	0.8	0.6	0.6
Ratio of equity to provisions	6.6	7.5	8.7	8.5	8.7
Ratio of excess solvency to provisions	3.2	3.9	4.7	4.6	4.7
Solvency indicator	166.8	182.1	201.5	195.0	196.8
Pension funds					
Gross premiums to GDP	0.9	0.9	1.0	1.0	0.8
Return on equity before tax	-19.04	-30.99	25.5	23.16	23.55
Return on investments before tax on pension returns	-1.5	-1.16	7.72	11.78	17.44
Ratio of operating expenses to gross premiums	3.6	3.5	3.4	3.1	3.0
Ratio of expenses to provisions	0.2	0.2	0.2	0.2	0.2
Ratio of equity to provisions	17.21	13.43	17.35	20.41	23.74
Ratio of excess solvency to provisions	9.18	8.75	13.03	15.97	18.97
Solvency indicator	433.3	309.5	398.5	460.5	476.7

Source: The Danish Financial Supervisory Authority.

[12] In 2003, life insurance penetration (direct gross premiums in percent of GDP) was in Denmark 5.17, Finland 2.00, Germany 3.90, the Netherlands 5.40, Norway 2.81, Sweden 4.58, and the United Kingdom 9.76 percent. According to the *OECD: Insurance Statistics Yearbook 1994–2003*, (Paris: OECD).

Table 5. Financial Soundness Indicators for Non-life Insurance Companies, 2001–05
(In percent unless indicated otherwise)

	Dec-01	Dec-02	Dec-03	Dec-04	Dec-05
Gross premiums to GDP	2.3	2.9	3.1	3.1	2.9
Net premiums to GDP	2.0	2.4	2.6	2.7	2.6
Return on assets	0.6	0.1	5.8	5.9	6.4
Return on equity	5.6	0.9	14.2	14.6	17.1
Operating expenses to gross premiums	23.5	22.8	21.7	17.5	17.3
Loss ratio gross of reinsurance	78.8	80.3	71.2	74.5	80.1
Solvency ratio	3.4	3.7	4.2	3.9	4.7

Source: The Danish Financial Supervisory Authority.

26. **While several measures have been implemented to increase the buffers in the industry, the overall risk in the pension sector still needs to be closely monitored.** At the beginning of this decade, the Danish life insurance and pension industry, like in many other countries, experienced problems due to minimum guaranteed returns offered to customers in a low yield environment. Although the minimum yield had been reduced over time, a substantial share of older contracts with a guaranteed annual return of 4.5 percent is still outstanding. Many companies have bought derivatives to cover these risks. Better returns in 2004 and 2005 have limited the problem, but if returns on investments were to decline substantially, this problem will remerge.

27. **Stress tests conducted for the FSAP show that much of the impact of shocks would be absorbed by the collective bonus pool component (retained earnings) of companies' reserves**. The exercise covered the largest companies which were asked by the DFSA to estimate the consequences of the single factor shocks with magnitudes consistent with those applied for the banks for market risk. The sizable collective bonus pool, long term nature of the investment portfolios, and some degree of hedging cushions the impact of the shocks.

28. **The DFSA's own monitoring system also suggests a generally resilient insurance sector.** The DFSA maintains a "traffic light" system based on two scenarios—red and yellow light. The red light scenario assumes a combination of a decline of 12 percent in the price of stocks and 8 percent in the price of real estate, and an increase in the interest rate level of 0.7 percentage points. The yellow light scenario assumes a decline of 30 percent in the price of stocks and 12 percent in the price of real estate, and an increase in the interest rate level of 1.0 percentage point. The system complements the required capital margin. If a company cannot meet the red scenario, the DFSA may use measures such as require monthly reporting and the company in question will not be allowed to increase its overall risk.[13] As of end-2005, the system flagged only one company (nonlife company) as being under the red light and thus warranted closer monitoring by the DFSA. Six companies were signaled as being under yellow light, suggesting that they could better withstand the combination of shocks.

[13] All life insurers and pension funds have to estimate the consequences of the changes in the assumed levels of mortality and disability used in the annual report. The test assumes both a decrease and an increase in the mortality intensity of 10 percent. It corresponds roughly to change in longevity of one year. Further, the test assumes an increase in the disability intensity of 10 percent. The result of these stress tests is required to be disclosed in the annual report.

29. **The performance in the non-life sector has also improved.** The five largest non-life companies accounted for almost 67 percent of gross premiums and the ten largest for almost 83 percent in 2005. During the last five years, two non-life insurers experienced serious difficulties (one due to September 11), including one company that failed. No direct losses for customers were observed, but in one case the costs for the guarantee fund has been estimated at €16 million.

30. **Effective January 1, 2007, the minimum capital requirement will increase to the equivalent of the requirements in EU Solvency I Directive.** Market participants are also anticipating increases in the capital levels in future years, when the EU continues to make progress on the insurance capital adequacy (Solvency II).

E. Cross-Border Financial Conglomerates

31. **Substantial exposures to non-residents and the presence of large conglomerates that are active in the Nordic region poses a number of challenges** (Table 6). In particular, the increasing divergence in the legal and business structure of such institutions, with centralization of key functions such as risk management abroad places a premium on coordination and information sharing among regional supervisors. While the sectorally integrated supervisory structure of the DFSA facilitates effective consolidated supervision of institutions incorporated in Denmark, close coordination among the Nordic supervisors and central banks is equally important. The systemic importance of some of the institutions also requires effective coordinated arrangements for provision of liquidity and crisis management.

32. **Arrangements for cross border coordination and information sharing are in place but remain to be tested.** The supervisory agencies in the region have forged a general memorandum of understanding (MoU) and there is a similar MoU at the EU level. In addition, there is a special agreement regarding the Nordea Group headquartered in Sweden. The Swedish Financial Supervisory Authority (FSA) is the lead supervisor for Nordea, which is inspected by joint teams. Most of the financial groups are sizable and systemically important in at least one of the Nordic countries. It remains to be seen whether, given their legally non-binding nature, the MOUs would be effective in the event of a crisis involving one of the larger institutions with substantial cross-border operations. The MOUs also do not involve the Ministries of Finance that ultimately may need to be involved in any crisis resolution.

Table 6. Market Shares of Major Financial Groups in Denmark, 2005
(In percent unless indicated otherwise)

	Group headquartered in:	Banking 1/	Mortgage banking 2/	Life insurance 3/	Non-life insurance 4/
Large Nordic financial groups in Denmark		65.7	85.7	30.9	36.6
Danske Bank Group	Denmark	38.0	33.4	17.1	--
Danske Bank and BG Bank		38.0	--	--	--
Realkredit Danmark		--	33.4	--	--
Danica Pension		--	--	17.1	--
Nordea Group	Sweden	20.0	10.7	8.1	--
Nordea Bank		20.0	--	--	--
Nordea Kredit		--	10.7	--	--
Nordea Pension		--	--	8.1	--
Nykredit Group	Denmark	3.0	41.2	--	2.8
Nykredit		--	27.1	--	--
Totalkredit		--	14.1	--	--
Nykredit Bank		3.0	--	--	--
Nykreditforsikring		--	--	--	2.8
Kaupthing Bank	Iceland	4.0	0.4	--	--
FIH Group		4.0	0.4	--	--
Svenska Handelsbanken	Sweden	0.4	--	--	--
Midtbank		0.4	--	--	--
SEB	Sweden	0.3	--	5.7	--
Amagerbanken		0.3	--	--	--
Codan Life		--	--	5.7	--
TrygVesta	Denmark	--	--	--	20.9
Royal and Sun Alliance	UK	--	--	--	12.9
Codan		--	--	--	12.9
Other large Danish financial institutions		9.7	14.2	22.7	28.4
Jyske Bank	Denmark	5.0	--	--	--
Sydbank	Denmark	4.0	--	--	--
PFA Pension	Denmark	--	--	17.0	--
Topdanmark Group	Denmark	--	--	4.7	19.0
BRF Kredit	Denmark	0.2	9.4	--	--
DLR Kredit	Denmark	--	4.8	--	--
Alm Brand	Denmark	0.6	--	1.0	9.4
Total market share in Denmark		75.4	99.9	53.6	65.0

Source: The Danish Financial Supervisory Authority and the groups' annual reports.

1/ Market shares are in percent of total banking system assets, adjusted for foreign subsidiaries and branches. Latest available 2005 figures.
2/ Market shares are in percent of loans granted as of the second quarter of 2005.
3/ Market shares are in percent of the total insurance and pension balance sheet assets.
4/ Market shares are in percent of total non-life insurance gross premiums.

III. Financial Markets, their Infrastructure, and Safety Nets

A. Monetary Policy Framework

33. **Monetary policy is firmly anchored on maintaining the Danish kroner within its ERM2 band of ±2.25 percent vis-à-vis the euro**. There seems to be a strong commitment to observe the convergence criteria for membership of the European Monetary Union, which has helped anchor inflation expectations. Policy interest rates generally follow ECB rates.

34. **The monetary policy framework is transparent.** The Nationalbank's authority has been governed by the *Nationalbank of Denmark Act* and the *By-laws of the Nationalbank of Denmark* since 1936 with four minor amendments. Although Denmark opted out of the European Monetary Union, some of the Articles included in the *Statutes of the European System of Central Banks* also apply to the Nationalbank, hence strengthening its autonomy. The Board of Governors solely determines key interest rates to support the peg. While the Minister of Economic and Business Affairs has the final authority to determine the exchange rate regime, this is done in coordination with the Nationalbank according to the *Act on Foreign Exchange*. Danmarks Nationalbank clarifies its mandates in its different publications.

B. Safety Nets

Lender of last resort

35. **The authorities' approach to their lender-of-last-resort role is sound but places a premium on prompt decision-making.** The DN functions as lender-of-last-resort to solvent banks facing liquidity pressures on a case-by-case basis. Banks are encouraged to meet their liquidity needs first from the money market which is quite liquid. Banks typically carry a large portfolio of certificates of deposits issued by the DN, government securities, and mortgage bonds that can be used as collateral for repo transactions. For solvent banks unable to obtain liquidity in the market, collateralized loans may be granted. There are no established rules for such loans, but they would involve views of the DFSA on the solvency of the institutions and stringent conditions. Any bank rescue operation involving taxpayers' money requires prior approval of the Finance Committee of the legislature. This approach emerged after the experience in the late 1980s and early 1990s. To be effective, it requires that decisions in situations of bank distress, involving the DN, the Ministry of Economic and Business Affairs, the DFSA, and the Finance Committee, can be made promptly.

Deposit Insurance

36. **The Guarantee Fund for Depositors (GF)—the mandatory deposit insurance scheme—has worked well in the past, but it seems insufficient for dealing with the failure of a large institution.** Deposits are covered up to DKK 300,000 (about €40,250) per depositor after deduction of loans but certain special deposits are fully covered. The coverage

is hence higher than the EU minimum requirement of €20,000.[14] Foreign branches must "top-up" to the Danish level through the GF if their coverage is less than required in Denmark. The GF also covers losses caused by the failure of a bank, mortgage credit institution, or investment company not being able to return securities owned by an investor, but only up to €20,000. Since 1987, it has covered 10,520 clients in nine different institutions and paid out DKr 528.4 million. Clients are typically repaid within six months after the closure. The GF has a reserve of DKr 3.2 billion derived from a fee set as a percentage of covered deposits. At end-2004, this represented 0.9 percent of insured deposits, which seems insufficient to cover depositors in the event of failure of a large institution without resort to a government guarantee. The discretion to issue such guarantee may be seen as a way of limiting moral hazard.

C. Payment and Securities Clearing and Settlement Systems

37. **The payment system infrastructure in Denmark is highly developed and technologically well advanced and risks in the system are well contained.**[15] There is generally a high degree of compliance with international standards (see Annex IV and V). The interbank real-time gross settlement (RTGS) system—KRONOS—and Sumclearing for retail payments are systemically important.[16] KRONOS is the channel for the execution of monetary policy transactions and large-value interbank transactions and is linked to TARGET—the RTGS system of the European System of Central Banks (ESCB).[17] The clearing and settlement of listed securities are handled by VP Securities Services. The transactions settled in VP have been increasing rapidly. In 2005, 10.2 million transactions were settled in VP with a market value of DKr 30,924 billion (around US$5,012 billion). A number of technical enhancements are suggested, including risk control measures in Sumclearing and in VP to ensure timely settlement in the event of a bankruptcy of a participant.

D. Financial Markets

38. **The money and foreign exchange markets are well functioning and liquid.** In 2005, the average daily uncollateralized interbank exposure increased by 35 percent to DKr 10.4 billion. While this may indicate potential for contagion, these exposures are monitored by the DN and occasionally stress tested. Banks also maintain a sizable stock of collateralizable assets. The money market is closely linked with the foreign exchange market, anchored by the euro peg, which is also quite efficient.

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[14] The coverage in Sweden is SKK 250,000 (about €26,500) and in Norway is NKK 2 million (about €252,500).

[15] For details, see *Payment Systems in Denmark* published by Danmarks Nationalbank, Copenhagen, 2005 (available on: http://www.nationalbanken.dk/).

[16] In 2005, around 1.1 billion payments with a value of DKr 5,027 billion were processed in the Sumclearing infrastructure. Sumclearing hence processed transactions amounting to 3¼ times nominal GDP.

[17] In 2005, KRONOS turned over nominal GDP about 57¼ times.

39. **In contrast to the other Nordic countries, the Danish capital market is dominated by mortgage bonds** (Table 7). With public debt declining, mortgage bonds now account for about two thirds of the total bond market capitalization. The market for government securities is quite liquid and benefits from the setup of electronic trading platforms, and a sound issuance policy.

40. **The medium-size Danish equity market faces a number of structural issues.** Until recently, the market has outperformed the major international markets, but has low turnover. In recent years the Copenhagen Stock Exchange has also experienced significant delistings and difficulties in attracting new listings. The structure of the market, where small- and medium-size enterprises (SMEs) constitute the vast majority of listed companies, but activity is concentrated among a handful of large corporations, including the dominant global container shipping concern, Maersk, adds to the difficulty of maintaining adequate market liquidity. The concentration of liquidity and activity in a limited number of shares can ultimately be seen as a major obstacle by investors, in particular institutional investors.

41. **Initiatives have been launched by the Exchange to address these issues, but their effectiveness remains to be seen.** The launch of the alternative market place, FirstNorth, aiming at small companies and imposing reduced listing requirements, is too recent to allow to draw meaningful conclusions. However, similar experiences in other European countries appear to confirm the potential for such organized but unregulated markets to attract new categories of companies to the stock market. A potential risk, however, is that more opaque markets would ultimately weaken investor protection and reduce the benefits of the new transparency and corporate governance frameworks.

42. **The creation of a common regional market place with common trading would be an important step toward integration in the broader European capital market.** The strategic alliance (Norex) and the consolidation of OMX have resulted in the creation of an increasingly homogeneous regional trading environment offering investors, issuers, and exchange members cost-effective access to an increased range of investment opportunities and increased liquidity, thereby increasing the attractiveness and visibility of the region to international investors. However, the integration of clearing and settlement infrastructures has lagged developments on the trading side, primarily due to cost considerations.

43. **The investment fund industry has experienced steady growth and significant transformation in recent years (Table 8).** However, assets in relation to GDP are still lower than in Sweden and the average of the EU-12. Hedge fund-type investment vehicles have progressively been allowed in Denmark. Effective July 2005, a new regulatory regime has been introduced, setting the ground for the development of regulated onshore hedge funds (hedge associations). Rather than imposing specific constraints on the investment policy of the funds, the regulations establish extensive information obligations and frequent redemption windows and rely primarily on investors to control the fund managers. It is important, that the supervisory authority establishes a clear jurisprudence in key areas such as asset valuation practices, which remains under the responsibility of the funds.

Table 7. Nordic Capital Markets, 2001–05

	Dec-01	Dec-02	Dec-03	Dec-04	Dec-05
Bonds: Number of listed bonds					
Stockholm Stock Exchange	...	...	1,369	1,480	1,618
Oslo Stock Exchange	817	827	816	861	837
Copenhagen Stock Exchange	2,254	2,250	2,251	2,232	2,325
Bond market capitalization to GDP					
Stockholm Stock Exchange	...	...	65.3	63.3	67.9
Oslo Stock Exchange	30.1	36.0	32.8	33.8	28.4
Copenhagen Stock Exchange	166.0	178.4	182.8	190.7	193.1
Bond market turnover to end-year market capitalization					
Stockholm Stock Exchange	...	...	6.3	6.7	7.2
Oslo Stock Exchange	1.1	1.4	1.9	1.2	1.1
Copenhagen Stock Exchange	2.5	2.5	2.7	2.6	2.9
Equities: Number of listed equities					
Stockholm Stock Exchange	305	297	282	276	271
Helsinki Stock Exchange	155	149	145	137	137
Oslo Stock Exchange	212	203	180	188	219
Copenhagen Stock Exchange	217	201	195	185	176
Stock market capitalization to GDP					
Stockholm Stock Exchange	125.9	75.6	94.9	106.0	133.1
Helsinki Stock Exchange	159.3	107.5	109.7	106.5	132.8
Oslo Stock Exchange	44.4	33.1	44.2	55.2	73.9
Copenhagen Stock Exchange	55.8	45.2	51.6	60.0	77.2
Stock market turnover to end-year market value					
Stockholm Stock Exchange	1.4	1.5	1.1	1.2	1.1
Helsinki Stock Exchange	0.9	1.2	0.9	1.1	1.1
Oslo Stock Exchange	0.8	0.9	0.8	1.0	1.1
Copenhagen Stock Exchange	0.7	0.6	0.6	0.7	0.8
Derivatives: Number of contracts traded per business day 1/	266,291	258,595	308,093	396,180	394,719
of which, in percent of total:					
Stockholm Stock Exchange and Helsinki Stock Exchange	94.2	94.2	94.0	94.0	93.7
Oslo Stock Exchange	5.8	4.9	5.0	5.3	5.5
Copenhagen Stock Exchange	...	0.8	1.0	0.7	0.8

Source: OMX Exchanges.

1/ As of August 2005. Only OMX total figures reported afterwards; data for individual OMX exchanges not available.

Table 8. Nordic Countries: Evolution of Mutual Funds, 1998-2005[1/]
(In percent unless indicated otherwise)

	1998	1999	2000	2001	2002	2003	2004	2005
Number of mutual funds								
Denmark	226	292	394	451	485	400	423	471
Finland	114	176	241	275	312	249	280	333
Norway	264	309	380	400	419	375	406	419
Sweden	366	412	509	507	512	485	461	464
EU-12 average	1,430	1,573	1,818	1,923	2,046	2,026	2,080	2,119
United States	7,314	7,791	8,155	8,305	8,244	8,126	8,044	7,977
Mutual fund net assets to GDP								
Denmark	11.2	15.8	20.2	21.1	23.2	23.2	26.6	29.2
Finland	4.4	8.0	10.5	10.6	12.4	15.7	20.2	23.8
Norway	7.4	9.6	9.7	8.7	8.1	9.9	11.8	13.6
Sweden	22.0	32.8	32.2	29.5	23.7	28.8	30.5	33.4
EU-12 average	33.8	38.5	43.9	42.4	43.2	47.5	50.0	50.6
United States	63.2	73.9	70.9	68.9	61.0	67.6	69.1	71.4

Source: The Investment Company Institute.

1/ Data cover home-domiciled funds, funds of funds are not included.

44. **The governance framework for firms is basically sound.**[18] IFRS were adopted for all listed companies, including all financial enterprises, effective January 2005. In 2001, the *Nørby Committee* was established to make recommendations on measures to improve corporate governance. The Committee made specific recommendations which were originally voluntary, but now listed companies must either comply with them or explain deviations.

IV. FINANCIAL SUPERVISION AND STANDARDS ASSESSMENTS

A. The Supervisory and Regulatory Framework

45. **Financial sector stability is a shared responsibility of the DFSA and DN.** The DFSA covers three areas: regulation, supervision, and information on financial institutions and securities markets. Its mission is to create future oriented conditions for growth for citizens and companies in an increasingly globalized world. It contributes by preserving the confidence in the Danish financial sector by citizens and companies in Denmark and abroad.[19] There is good coordination between the various domestic institutions responsible for financial sector stability. With a view to avoiding duplication of work, a *Coordination Committee on Financial Stability,* chaired by the Permanent Secretary of the Ministry of Economic and Business Affairs, has been established.[20]

46. **The DFSA has been an integrated supervisor since 1988.** The legal framework is provided by the Financial Business Act, 21 other laws specifying rights and responsibilities for financial firms supervised by the DFSA, and the annual budget laws. As a member of the European Union (EU) since 1973, EU directives have been adopted and implemented in financial legislation. The organizational structure, the limited size of the DFSA which facilitates internal coordination, and effort to unify the legal framework have thus far contributed to effective integrated supervision.

47. **The Danish supervisory approach is based on placing responsibility on the boards of directors and management of the supervised institutions.** The Boards are expected to ensure that appropriate procedures are in place and adequate personnel are assigned to relevant tasks in the supervised companies. Thus, the fit-and-proper requirements are only compulsory for the Board of Directors and the Management Board and it is the responsibility of the Boards to institute appropriate fit-and-proper rules for other senior managers, internal controls, internal audit, etc. The authorities could consider broadening the

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[18] Denmark is among the countries with the best rating according to the *Corruption Perception Index* published by *Transparency International*. See http://www.transparency.org/surveys/index.html#cpi.

[19] The mission and vision of the DFSA are published on its website: http://www.ftnet.dk/sw1277.asp.

[20] These practices were in May 2005 confirmed in a *Memorandum of Understanding Concerning Financial Supervision between Danmarks Nationalbank, The Danish Ministry of Finance, and The Danish Ministry of Economic and Business Affairs (Department and Danish Financial Supervisory Authority).* The Memorandum is available in the *Monetary Review*, 2nd Quarter 2005, Danmarks Nationalbank, Copenhagen (http://www.nationalbanken.dk/).

coverage of such rules to key personnel in addition to the Management Board since in many cases the latter comprises a very limited number of key personnel. In addition, they should upgrade the guidelines on internal controls to a legally binding Executive Order.

48. **The supervisory approach is risk-oriented.** This is based on: (i) an early warning system; (ii) a rating by the supervisor in charge; (iii) simple stress tests (sensitivity analysis); and (iv) the institution's systemic importance. Firms with larger risks are subject to intensified supervision, meaning more frequent reporting and annual inspections. The DFSA meets annually with the management of the large financial institutions. Transparency is facilitated by comprehensive annual reports on DFSA's activities.[21]

49. **Consideration could be given to providing a statutory basis to the autonomy and accountability of the DFSA to entrench current practices.** The DFSA is an agency under the Ministry of Economics and Business Affairs, but is overseen by independent Councils. All matters of principle or issues that are of significant importance for an institution are decided, respectively, by the Financial Business Council, which covers financial companies and holding companies, and the Securities Council, which covers parties involved in securities regulation. The Pension Market Council has been established to ensure an open debate about pension fund issues. The Councils include representatives from the industry and individuals with special expertise. This structure was established to ensure that supervisory decisions are independent of the Ministry. However, the DFSA must ask for an additional mandate from the Ministry, if it feels that it is beneficial to exceed its standard supervisory authority. A case in point might be contacting another institution about a potential take-over with a view to avoiding a costly bankruptcy. While the Minister has no authority to issue instructions to the DFSA, the Minister may ask the DFSA to examine specific matters. Servicing the Minister on issues of limited supervisory relevance can divert resources from supervision.

50. **Adequacy of resources for the DFSA should be carefully reviewed.** While resources for the DFSA have increased in recent years due to new assignments, a review of their level, appropriation procedure, and prioritization would be beneficial.[22] Consideration should be given to granting the DFSA greater budgetary autonomy while ensuring appropriate checks and balances. At a minimum, separate budgets for regulatory and supervisory activities to reduce the risk of regulatory work detracting resources from the supervisory duties.

- With the aim of maintaining the current low probability for financial sector failures, there may be a need for earlier action and more frequent inspections. This is particularly important in a period with reduced cushions due to the implementation of

[21] The various information is available on the DFSA's website: http://www.ftnet.dk/sw99.asp.

[22] The DFSA is funded by charges from the supervised institutions.

IFRS, aggressive expansion, efforts to reduce the reporting burden, and more complex supervision (Basel II).

- It would be important to review personnel policies to ensure retention of specialists in new areas in high demand, such as validation of internal models, stress tests, and determining additional capital requirements for special areas.

B. Standards Assessments

51. **There is generally a high degree of compliance with the international supervisory standards assessed.**[23] The Basel Core Principles for Effective Banking Supervision (BCP) are either fully or largely observed (Annex II). Areas of less than full compliance concern the autonomy and resources of the DFSA and aspects of internal controls within supervised institutions. Similarly, Insurance Core Principles are either observed or broadly observed, and the assessment echoes that for the BCP regarding autonomy, resources, and internal controls (Annex III). However, the need to build capacity for off-site quantitative analysis and stress-testing is also stressed in both areas.

52. **Overall compliance is also high concerning the Core Principles for Systemically Important Payment Systems and the Recommendations for Securities Clearing and Settlement Systems (RSS) (Annexes IV and V)**. The mission made technical suggestions for further limiting the risks in Sumclearing and VP which is the sole central securities depository (CSD) in Denmark and clears and settles securities transactions in the regulated markets and in the over-the-counter (OTC) market (Annex V). A formal assessment of the IOSCO principles was not performed, but it was found that the securities markets in Denmark operate within a strong legal framework. As a unified regulator, the DFSA has efficiently used its structure to strengthen its consolidated supervision and prevent regulatory gaps.

53. **The new AML/CFT law enacted in February 2006, when it fully enters into force and is effectively implemented, will considerably strengthen the regime of preventive measures for the financial and non-financial sectors (Annex VI).** Laws criminalizing ML/FT are well developed, and there are flexible mechanisms for restraint and confiscation of the proceeds of crime. However, building a fully-effective, FATF-compliant system will require: (i) enhancing prosecution of the ML/FT offenses, (ii) supervising financial and particularly the non-financial sectors more proactively, (iii) stimulating additional STR reporting, especially from the non-bank and the designated non-financial sectors, (iv) re-evaluating the roles and responsibilities of the Financial Intelligence Unit (FIU) and (v) improvements in the regimes of the home-rule jurisdictions of the Faroe Islands and Greenland.

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[23] For further details, see the Reports on Observance of Standards and Codes (ROSCs) in the Annexes.

OBSERVANCE OF FINANCIAL SUPERVISION STANDARDS AND CODES—SUMMARY ASSESSMENTS

This Annex contains the summary assessments of standards and codes in the financial sector. The assessment has helped to identify the extent to which the supervisory and regulatory framework is adequate to address the potential risks and vulnerabilities in the financial system.

The following detailed assessments were undertaken:

Basel Core Principles for Effective Banking Supervision—by Mr. Peter Hayward (external expert, formerly with the Bank of England) and Mr. Stefan Spamer (external expert, Bundesbank).

The IAIS Insurance Core Principles—by Mr. Henning Göbel (external expert, BAFIN) and Ms. Kirsten Nordbø Steinberg (external expert, formerly with the Norwegian FSA).

CPSS Core Principles for Systemically Important Payment Systems and the CPSS/IOSCO Recommendations for Securities Settlement Systems—by Mr. Jan Woltjer (Monetary and Capital Markets Department).

The FATF 40+9 Recommendations for AML/CFT—by Richard Lalonde (Team Leader) and Paul Ashin (both Monetary and Capital Markets Department); and Margaret Cotter, Giuseppe Lombardo, and Navin Beekarry (all Legal Department).

Denmark's compliance with the international supervisory standards is generally high and it has taken significant steps to comply with the recently revised AML/CFT standard. The payment and securities clearing and settlement systems are generally effective and efficient as is their oversight. The assessment recommends that the autonomy and accountability of the DFSA be entrenched by providing the agency a statutory basis and granting it greater budgetary autonomy. While the regulatory framework has worked well in the current environment, it would benefit from further strengthening of the governance of financial institutions and upgrading the guideline on internal controls to an Executive Order.

Report on the Observance of the Basel Core Principles for Effective Banking Supervision

1. The assessment of the observance of the *Basel Core Principles for Effective Banking Supervision* (BCP) developed by the Basel Committee on Banking Supervision was carried out as part of the first Financial Sector Assessment Program (FSAP) mission to Denmark during November 7–18, 2005.[24] The assessment of observance of each of the Core Principles was based on the *Core Principles Methodology Document* of October 1999. The DFSA had prepared a self-assessment on which this assessment is based. Supplemental information was provided to the assessors as necessary.

Institutional and macroprudential setting, market structure—overview

2. The Danish financial sector is deep (total assets are close to five times GDP) and sophisticated, with some internationally unique financial instruments (mortgage bonds). Since the deregulation of the 1970–80s, the business areas in the financial sector have overlapped. While some financial activities may not be carried out within a bank (for example, insurance activities), it is possible for a bank to enter the insurance and other business through subsidiaries and associated companies. Banks may also form holding companies and other group structures As a result, there have been a number of mergers, and group formations, as well as some break-ups in the last two decades.

Credit institutions

3. At end-2005, total assets of credit institutions were around 332 percent of GDP. Currently, there are 170 credit institutions registered in Denmark, of which 161 are commercial banks, 8 are mortgage banks, and 1 is a specialized bank. The two largest banking groups—Danske Bank and Nordea Danmark—account for more than 50 percent of the commercial bank lending. The five largest banking groups account for about 80 percent of total loans (71 percent if foreign branches are excluded). There is thus a substantial concentration in spite of the high number of credit institutions.

4. Commercial banks are profitable. In 2005 (2004), the return on equity before tax for the sector as a whole was 21¼ (17¾) percent. The average capital adequacy ratio was 13¼ (13½) percent, with the smaller banks typically having a larger ratio. During 2004 and 2005, bank lending increased rapidly (14 percent and 25 percent, respectively) while the loan to deposit ratio was 115 percent at end-2005.

[24] This assessment was carried out by Peter Hayward (formerly, Bank of England and the Monetary and Capital Markets Department (MCM) of the International Monetary Fund (IMF)) and Stefan Spamer (Deutsche Bundesbank).

Mortgage financing

5. Danish mortgage financing has been governed by special legislation, which allows specialized mortgage credit institutions to fund mortgages with collateralized mortgage bonds. With total assets around 134 percent of GDP, the Danish mortgage credit institutions are only slightly smaller than the Danish commercial banks.

Supervisory structure

6. Financial sector stability is a shared responsibility of Danmarks Nationalbank (the central bank) and the DFSA. The DFSA is responsible for overseeing the various financial institutions and the regulation of investment business, while the responsibility for payment systems is shared with the Nationalbank. The Nationalbank and the DFSA have concluded a *Memorandum of Understanding Concerning Financial Supervision between Danmarks Nationalbank, The Danish Ministry of Finance, The Danish Ministry of Economics and Business Affairs, and the Danish Financial Supervisory Authority*.

7. The DFSA is accountable to the Minister of Economics and Business Affairs, but much of its work is under the jurisdiction of independent councils established under the Financial Business Act (FBA). All matters of principle or issues that are of significant importance for an institution are decided by, the Financial Business Council (FBC), which covers financial companies and holding companies, and the Securities Council, which covers parties involved in securities regulation. These councils include representatives from the industry, but only as a minority, and independent members with special expertise. This structure was established to ensure that supervisory decisions on individual cases are taken independently of the Ministry. The Minister has no authority to issue instructions to the DFSA, but can ask it to examine specific matters.

8. A risk-based supervisory approach is applied. Firms with larger risks are subject to intensified supervision, often involving more frequent reporting. Large institutions are subject to comprehensive examinations over a four-year cycle, medium-sized institutions are examined at least every fourth year, while smaller low-risk institutions are examined every seventh year. In the large banking groups, at least one risk area is inspected each year and the DFSA meets at least annually with their management. Transparency is facilitated by comprehensive annual reports on the DFSA's activities.

9. A recent audit by the National Audit Office (NAO) noted that frequency of comprehensive on-site inspections needed to be shortened, and supervision of information technology (IT) systems needed to be upgraded, and the follow-up of inspections made more effective.

10. The DFSA may face resource constraints. Although its costs are fully born by the supervised institutions, revenues and expenses are included in the fiscal budget and hence approved by the legislature. The adoption of International Financial Reporting Standards (IFRS), the implementation of Basel II may well reduce the capital cushion of many banks and hence demand closer monitoring, which will be resource-demanding and may need reprioritizing.

11. Denmark has a deposit insurance system, the Guarantee Fund for Depositors and Investors, which covers deposits of up to DKr 300,000 per depositor. Certain special categories of deposit are, however, covered in full. Membership is compulsory for all credit institutions.

General preconditions for effective banking supervision

12. The preconditions for effective supervision are largely in place. As a member of the EU since 1973, EU directives have been adopted and implemented in financial legislation. The public governance framework is basically sound. IFRS were adopted for all listed companies, and by all financial enterprises, effective January 2005. This has resulted in a decline in provisions by many banks. The authorities describe the change as moving from a *conservative* provisioning policy to a *neutral* provisioning policy. The authorities have taken steps to improve corporate governance and disclosure. In 2001, the *Nørby Committee* was established to make recommendations on measures to improve corporate governance and all listed companies must now explain if they deviate from these recommendations.

Main findings

13. **Objectives, autonomy, powers, and resources (CP 1).** The DFSA is the sole authority responsible for supervision of the financial sector.[25] There is no visible evidence of any undue government or industry interference in the work of the DFSA. However, the DFSA is an institution for which the Minister of Economic and Business Affairs is responsible to Parliament. This could conceivably impede the DFSA's autonomy, because it could not be excluded that the Minister of Economics and Business Affairs might overrule decisions made by the DFSA on the advice of the Financial Business Council with regard to the issuance of executive orders. While in general it is not usual for agencies in the Danish public sector to be established by specific laws, such a law could ensure the DFSA's role as an autonomous supervisory authority and would make the agency's position more transparent. Although the DFSA also has, in general, adequate freedom to deploy its banking supervision resources, the Authority's budget is incorporated into the overall budget of the government and subject to passage of the annual Finance Act.

[25] The legislation and prudential regulation for banks does not automatically cover the Faeroe Islands and Greenland. The legislation and regulation is entered into force separately in these parts of the country approximately one year after the changes enter into force in Denmark.

14. **Licensing and Structure (CPs 2–5).** The FBA defines clearly the term "bank" and permissible activities of banks. In the licensing process, the applicant is required to inform the DFSA of all relevant information. The DFSA has authority to grant authorization for acquisitions or increases of qualifying holdings. Investments in other companies, that are not credit institutions, financial institutions, or ancillary banking undertakings, are restricted to a total amount of 100 percent of capital and additional restrictions limit individual investments.

15. **Prudential regulation and requirements (CPs 6–15).** Rules and regulation regarding capital adequacy conform to the Capital Accord of the Basel Committee on Banking Supervision and observes the EU Banking Directive. The solvency ratio requirement also applies to bank holding companies.

16. **Methods of on-going supervision (CPs 16–20).** The DFSA relies mainly on on-site inspection of banks supplemented by analysis of periodic reporting. The DFSA also relies on the work of internal and external auditors, who are obliged to provide reports on their work to ensure the accuracy of off-site reporting. Large banks are inspected under a four year cycle, which covers all the principal areas of risk. This means in practice that supervisors do on-site work in the banks at least once a year but often more frequently. Smaller banks are inspected once every four years unless they are considered vulnerable. Very small banks posing minimal risk are inspected only once every seven years. Annual assessments are made to ensure that high risk banks receive priority treatment in the on-site examination schedule.

17. **Information requirements (CP 21).** Banks are now required to comply with IFRS. The DFSA has the power to dismiss external auditors and appoint additional auditors. External audit obligations are set out by the DFSA. Supervisors see reports prepared by internal and external auditors and these contain information specifically required by the supervisors.

18. **Formal powers of supervisors (CP 22).** The DFSA has a range of sanctions from informal warnings, through the power to give directions, to the suspension of payments and the appointment of a conservator, and, ultimately to the revocation of the license. However, cases of serious breaches of prudential regulation are transferred to the police for prosecution.

19. **Cross-border banking (CPs 23–25).** The DFSA may request information and documents from foreign banks and financial market supervisory authorities and has the authority to undertake direct inspections in foreign establishments of banks. The DFSA has signed MoU with several relevant supervisory authorities and has regular meetings with these authorities, particularly in connection with on-site inspections. Since 2000, the Nordic supervisory authorities have operated a cooperation agreement on the supervision of the Nordea Group. The current legal provisions give the DFSA powers to access any information on a subsidiary of a foreign banking institution in Denmark. The DFSA has powers to share information needed by the home country supervisors for the purpose of carrying out consolidated supervision.

Recommendations

20. The DFSA is compliant or largely compliant with all the Basel Core Principles but, in the opinion of the assessors, the supervisory system would benefit from the additional measures listed below.

Recommended Action Plan to Improve Compliance of the Basel Core Principles

Reference Principle	Recommended Action
Objectives CP 1.1.	A law or a provision formally establishing the DFSA is desirable to make the organization of financial supervision in Denmark more transparent.
Independence CP 1.2.	The DFSA would have more flexibility, if it had its own budget.
Licensing Criteria CP 3/ Internal Control and Audit CP 14/ Remedial Measures CP 22	The 'fit-and-proper' test of the DFSA should apply to holders of other key management position. It may be useful to develop the guidelines for internal controls to an executive order.
Investment Criteria CP 5	The FBA should require prior approval for investments in non financial companies.
Connected lending CP 10	The DFSA should consider the need for a power to deduct connected lending from capital or to require it to be collateralized.
Other Risks CP 13	In respect of liquidity the DFSA should consider introducing the routine monitoring of net funding requirements, stress testing, and contingency planning for possible liquidity crises under various scenarios.
Bank Management Contact CP 17	The DFSA should consider routine meetings with management of banks where on-site inspections are infrequent.
Supervision Over Foreign Banks' Establishments CP 25	The DFSA should consider how to assess the home country supervisory system when they receive an application for a banking license from a bank from a country not represented in Denmark.

Authorities' response

With a few exceptions, we are broadly in agreement with the IMF assessment team.

As a follow-up to the recommendations by the IMF assessment team, consideration will be given to establish the DFSA as an independent institution by providing the agency a statutory basis in the legislation. Correspondingly, a separation of its regulatory and supervisory budget will be considered. In our view, how the budgetary procedure is organized is not the most important issue—instead it is essential to ensure that adequate funds are available at all times. A more distinct division of the budget, where the resources allocated to the supervisory activities are separated, would also give a more clear and transparent overview. It should be noted, however, that the DFSA has been allocated increased resources as a consequence of the Capital Requirement Directive and the Third Money-Laundering Directive. The budgetary procedure is a political decision.

Also note that the DFSA is developing the use of stress tests for monitoring the soundness of financial institutions. The DFSA will take the mission's comments into consideration when further developing these measures. The DFSA, however, would like to note that a build up of the stress testing capacity, such as suggested by the IMF, would require an increase in the resources of the DFSA.

We would also like to note that the new Basel II capital requirements could for institutions which apply for the use of the internal rating based approaches for credit risk and advanced measurement approach for operational risk imply potentially large decreases in the minimum capital requirements. To ensure that any large potential decrease in capital requirement will be gradual, the Danish regulation has included floors that set the maximum decrease in capital requirements for institutions using the advanced methods in 2007, 2008, and 2009 in accordance with the EU Capital Requirement Directive. Furthermore, if other institutions, which are not covered by floors, should experience large decreases in minimum capital requirements that do not reflect the risks that the institution is subject to, the DFSA will have the possibility of setting additional capital requirements in individual cases.

The DFSA will consider issuing executive orders instead of guidelines. The benefits of such executive orders will have to be viewed against the cost in administration for the supervised entities, but there are definitely supervisory benefits in upgrading the guidelines to legislation. Specifically regarding the recommendation to extend the field of our "fit-and-proper" regulation to all key staff, and not just board members: we generally concur that it could be useful, if the DFSA had the possibility to take action towards unfit staff members. However, it also seems an unnecessary burden on the financial businesses if such key staff members should have a "fit-and-proper" approval in advance. Such measures would also claim a considerable part of resources from the DFSA, and it is, in the DFSA's opinion, doubtful whether the outcome will exceed the costs.

REPORT ON THE OBSERVANCE OF THE INSURANCE CORE PRINCIPLES

General

1. The assessment of the observance of *Insurance Core Principles* (ICP) developed by the *International Association of Insurance Supervisors* (IAIS) dated October 2003 was carried out as part of the first Financial Sector Assessment Program (FSAP) mission to Denmark during November 7–18, 2005.[26]

2. The government's economic strategy for sustainable economic growth addresses financial sector stability. Well-functioning money and securities markets exist to support the availability of both long-term and short-term investment opportunities. Furthermore, an annual contract, concluded between Danish Financial Supervisory Authority (DFSA, Finanstilsynet) and the Ministry for Economic and Business Affairs (MoEB), addresses the overall objectives of effective supervision. This contract is published as an annex to the annual business statement of the DFSA.

3. The objectives of insurance supervision are clearly defined in ensuring that supervised undertakings do comply with the FBA. The DFSA articulates and publishes its self-understanding in its mission, vision, and values. This statement aims to ensure that market participants and its staff share a clear understanding of the objectives and direction of supervision.

4. Legislation identifies the DFSA as the principle authority to supervise insurance companies.[27] The DFSA has been set up as an autonomous and accountable authority to regulate and supervise financial institutions and securities regulation. The most senior decision making body is the Financial Business Council or the Danish Securities Council. Finanstilsynet has the necessary powers to impose sanctions to protect policyholders.

Institutional and macroprudential setting—overview

5. At end-2005, there were 36 life insurance companies and 29 general pension funds. Some of these entities are organized as groups, so that there were effectively 18 life insurance companies/pension funds (groups). The life insurance companies and pension funds are covered by the same legislative framework. In addition there were 44 company pension funds.

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[26] This assessment was carried out by Henning Goebel (Bafin, Germany) with the assistance of Kirsten Nordbø Steinberg (Kredittilsynet, Norway).

[27] The legislation and prudential regulation for insurance and pension funds does not automatically cover Greenland. The legislation and regulation is entered into force separately in Greenland approximately one year after the changes enter into force in Denmark. The Faroe Islands have separate legislation, regulation, and supervision.

6. The life sector is dominated by a relatively small number of groups and the major insurance products are with-profit pension schemes. These products have similar characteristics to those sold in a number of other countries with minimum guaranteed rates of return, and in all such cases the pension suppliers suffered financial stress during the equity price downturn of recent years and in the low interest rate environment. The Danish life insurance industry has historically produced adequate profits, but the dominance of these guaranteed life products and the associated asset-liability matching issues have rendered results contingent on asset side performance. Falling returns during the first half of this decade introduced financial pressures, which to a large extent now have been hedged.

7. In life insurance and general pension funds cross-border activities are limited, both for foreign insurers operating in Denmark and Danish insurers operating abroad. The major reason for this is the tax legislation, as premiums paid to foreign undertakings according to the tax law are not tax deductible for the insured.

8. The life insurance companies and general pension funds are mainly providing a second supplementary pension which is a mandatory pension scheme for employees, where the major products are traditional life insurance contracts with a guaranteed return. For these mandatory pension schemes that are part of the labor market agreements, the typical contributions rates range from 12 to 17 percent of the wage. On all contracts the profit is distributed to each contract according to the so-called contribution principle on a fair basis unless the contract states otherwise. Policyholders are allowed to transfer their contract from one company to another, but are not entitled to undistributed profits (collective bonus reserves), which in practice impede such transfers.

9. In 2005, the insurance companies and pension funds achieved a result before tax of over DKr 16 million, with the result on investments amounting to DKr 165 million. The results are the best during the recent five-year period. The administration costs have been reduced from 6.49 percent in 2001 to 5.33 percent in 2005.

10. There are 124 non-life insurance companies in the Danish market. The number of companies has declined during the last five years, but there is still room for further consolidation. Exits from the market were mainly due to normal changes in market conditions including mergers. A number of small non-life insurers have recently merged and some are planning to do so in the near future.

11. The total non-life market is small representing 0.46 of the world non-life insurance market. The market is mainly one of personal line business; motor and household insurance, representing approximately 70 percent of the non-life market. The market is not thought to be vulnerable to the withdrawal of one of the major suppliers, as this type of business, characterized by homogeneity of products, can be supplied by market entrants from other countries.

12. During the last five years, one non-life insurer failed and one went into run-off. The reason for one of the non-life insurers failing in 2001 were claims after September 11. A restoration plan is running to wind up the company, and no direct losses are observed. The other non-life insurer failed for a number of reasons: mispricing, under pricing, excessive overheads, inadequate reinsurance, decrease of equity prices, and management causes. The company is under forced liquidation by the court. No direct losses were observed as the guarantee fund has covered the losses for the customers. The cost of the guarantee fund is estimated to €16 million.

13. Reinsurance cover is mainly provided from the international reinsurance market. There are five pure Danish reinsurance companies, which primarily reinsure risks originating from the group (captives).

General preconditions for effective insurance supervision

14. The supervisory process is based on defined processes, which are known to and followed by the DFSA. A summary of the activities is published in the annual reports. The regulation is updated regularly and publicly available. The administrative decisions of the DFSA can be subject to substantive judicial review without impeding the ability of the supervisory authority to make timely interventions.

15. The DFSA is able to share information with other relevant supervisory authorities subject to confidentiality requirements. Although information sharing does not require respective agreements, there are some in place to set out the framework and procedures for the information exchange process.

16. Licensing procedures and requirements are set out in the FBA. Applicants will be provided with all relevant information about the licensing process and its requirements. According to Executive Order no. 1399, the DFSA shall assess whether an insurance company has adequate capital in order to obtain a license. If however, the submitted plans allow for reasonable doubts regarding the financial soundness of the operation and business projections, then the DFSA can either require additional capital or decide not to grant a license.

Main findings

17. The DFSA plans and prioritizes its on-site inspections according to the results of stress-tests, which are incorporated into an indicative routine labeled the traffic-light-system. This system is one of the indicators in an overall risk assessment rating developed by the DFSA. The overall risk assessment system also includes a qualitative assessment by a supervisor. This system has improved the risk awareness and directs the DFSA in identifying companies where tighter inspection seems necessary. The planning of on-site inspections is done on an annual basis following overall principles set by the DFSA management. Larger non-life insurers are subject to a full scale inspection every four years. Smaller non-life and all life insurers are subject to a full scale inspection every seven years. Vulnerable insurers

may be subject to more frequent full scale or focused inspections. Based on regular evaluations of risk, insurers may be subject to more frequent full scale or focused inspections.

18. The DFSA bases its system to assess the appropriateness of key functionaries on the assumption that it is the core responsibility of the senior management to ensure adequate personnel to be assigned to relevant tasks in the supervised companies. There was no evidence that this has led to severe problems so far. This approach, however, may well be justified by the limited size of the market.

19. A requirement that internal audit functions should be made compulsory for smaller companies. Guidelines do not define clearly enough what the DFSA requires in the area of internal control. As guidelines does not expand on requirements from section 71 in the FBA, the subsequent control procedure may not cover all relevant issues. The importance of the function requires an executive order.

Recommended Action Plan to Improve Observance of IAIS Insurance Core Principles

Reference Principle	Recommended Action
Conditions for Effective Insurance Supervision i.e., CP 1	While good conditions for effective supervision are in place, some more specific rule-based requirements should be applicable to all companies. All professional resources are available and of high standards. Market infrastructure allows for an efficient management of the sector. A wide range of operational services are available to insurance undertakings and allow them to focus on technical related aspects of the business. The regulation is very principle based, but allows for a risk based supervision. Specifically, the requirements on organization of an undertaking in conjunction with the relevant guideline 9680 to guide the company to consider measures without defining minimum standards applicable to *all* companies.
Supervisory authority i.e., CP 3	The potential interference of the executive branches in the budget allocation should ideally be limited or restricted. Finanstilsynet has to agree on its budget with the Ministry of Economic and Business Affairs, although the expenses of the agency are covered by fees of the supervised entities. Finanstilsynet is also subject to an annual budget reduction program for the public sector. There is a possibility that resources could be allocated to regulation to the disadvantage of supervisory activity.
Licensing i.e., CP 6	Consideration should be given to also require that the suitability of auditors and actuaries be assessed. Finanstilsynet pays specific attention to the licensing process. The risk-based approach requires a tighter and rather rule-based supervision within the first years of the newly established businesses. The ongoing supervisory process does not demand comprehensive detailed operating plans. As Finanstilsynet has distinctive rules for the supervision of new entities, considerations should be given to also require that the suitability of auditors and actuaries be assessed.

Reference Principle	Recommended Action
Suitability of persons i.e., CP 7	Consideration should ideally be given to apply fit-and-proper requirements to a broader range of senior management. Finanstilsynet bases its system to assess the appropriateness of key functionaries on the assumption that is the core responsibility of the senior management to ensure adequate personnel to be assigned to relevant tasks in the supervised companies. Nevertheless, the fit-and-proper requirements are applied consistently. There was no evidence that this has led to severe problems so far. However, this may be justified by the limited size of the market.
Internal control i.e., CP10	The requirements to establish internal audit functions should be made compulsory for smaller companies. Guideline 9680 does not sufficiently clearly define what Finanstilsynet requires in the area of internal controls. As the guideline does not expand on requirements from section 71 FBA, the subsequent control procedure may not cover all relevant issues. The importance of this function requires an executive order.
Market Analysis i.e., CP11	Finanstilsynet should ideally enlarge its activities on market analysis and obtain information, including on macro economic developments, which would enable forecasting market trends that allow for projections of potential impacts on the sector.
On-site inspection i.e., CP 13	The risk assessment should also take into account the size of the company to better balance risk sensitivity and potential financial impact for the market. Larger life companies should be subject to a full inspection on a four-year cycle.
Preventive and Corrective Measures i.e., CP 14	Consideration should be given to have a broader range of graduated sanctions. Finanstilsynet possesses all means to ensure that shortfalls or misuse of regulation will not be supported. The range of sanctions, however, is rather biased to drastic measures and could be of more variety to respond to less severe shortfalls. It can be assumed that the withdrawal of license is not an adequate response to all noncompliances. Sanctions will not be published, neither on company level nor on country level. During 2002–05, there were in total six noncompliances reported to the prosecutor. In 2005 (until November), 169 orders had been issued with a view to ensuring corrective actions.
Enforcement or sanctions i.e., CP 15	Finanstilsynet should have means to address management problems directly. Currently, Finanstilsynet does not possess the power to dismiss controlling owners and managers or to restrict their powers. Issuing of an executive order should be considered.
Group-wide supervision i.e. CP 17	The simultaneous assessment of major risks in all countries of the respective Group impedes unsupervised risk transfer. Finanstilsynet supervises three financial conglomerates with activity in the Danish market. Risk assessment of the Danish business takes place in joint meetings of all involved parties within Finanstilsynet. The MoU with Nordic countries facilitates a consistent approach across borders.

Reference Principle	Recommended Action
Risk assessment and management i.e. CP 18	The requirement to establish a risk-assessment framework should be obligatory for all companies and should be expressed in an executive order. Finanstilsynet receives reports on the results of the stress test on assets (traffic light) on a regular basis. Finanstilsynet expects all companies to examine the financial robustness in all material risk areas, e.g., market risk and realistic disaster scenarios including reinsurance cover. In practice, a company must have a risk assessment framework in place, relative to its nature of the business, in order to produce internal reporting and results on stress tests.
Insurance activity i.e. CP19	Finanstilsynet should consider whether it would issue an executive order with minimum requirements regarding insurance activity.
Investments i.e., CP 21	Consideration should be given to more detailed suitability requirements.
Derivatives and similar commitments i.e. CP 22	Consideration should be given to require suitability requirements for the derivatives function.
Anti-money laundering i.e., CP 28	See separate detailed AML/CFT assessment.

Authorities' response

We are broadly in agreement with the assessment team of the IMF, but would like to elaborate on the following issues.

As a follow-up to the recommendations by the IMF assessment team, consideration will be given to establish the DFSA as an independent institution by providing the agency a statutory basis in the legislation. Correspondingly, a separation of its regulatory and supervisory budget will be considered. In our view, how the budgetary procedure is organized is not the most important issue—instead it is essential to ensure that adequate funds are available at all times. A more distinct division of the budget, where the resources allocated to the supervisory activities are separated, would also give a more clear and transparent overview.

The fit-and-proper test in place in Denmark is compliant with the EU directives. In view of this assessment, we will consider the possibility to adjust the regulation so that the DFSA will be able to take measures in case we discover that a person employed in one of these additional functions is not fit-and-proper. In our view, it would not be cost efficient to extend the fit-and-proper test to those functions, as it would increase the administrative burden of the industry as well as require the DFSA to allocate resources to this task. Furthermore, the management has the incentive to hire persons, who are suitable for the job. Thus from a corporate governance point of view, it seems preferable that the management of the company is responsible for hiring persons, who are fit-and-proper, and that the DFSA has the means to act in case it discovers that a person was not fit-and-proper after all.

The IMF team finds that the DFSA does not possess the power to dismiss controlling owners and managers or to restrict their powers in case they are not fit-and-proper. We would like to stress that the DFSA is able to abolish the voting right of shareholders in case a qualified owner counteracts the sound and safe operation of the company. In such cases the DFSA may also give specific instructions to the firms. Hence we do not see a need for further measures.

The IMF team finds that some rules are set out in guidelines rather than executive orders and that the requirements for companies' operational plans, internal control systems, risk assessment frameworks, and insurance activities should be more detailed. The IMF team also suggests that it should be compulsory for smaller companies to have an internal audit function. We would like to reiterate that in Denmark, the internal auditors participate in the financial auditing of the company. An internal auditor is not a part of the control system of the company. Therefore we do not see a need for a compulsory internal audit function in small companies. We realize that the Danish system differs from other jurisdictions in this regard. In addition, it is our experience that it may be difficult for small firms to attract internal auditors. Nevertheless, we will consider to make the requirements more detailed and to change the guidelines into an executive order. However, the benefits will have to be viewed against the general intention to keep the administrative burden on the industry at the lowest level possible.

Report on the Observance of the Core Principles for Systemically Important Payment Systems

1. The assessment of the observance of the *Core Principles (CPs) for Systemically Important Payment Systems* (CPSIPS) developed by the *Committee for Payments and Settlement Systems* (CPSS) dated January 2001, was carried out as part of the first FSAP mission to Denmark, November 7–18, 2005.[28]

2. Two payment systems are declared systemically important by the Danish authorities: (i) KRONOS, the RTGS system for large-value payments; and (ii) Sumclearing, a multilateral netting system for the clearing and settlement of retail payments. Sumclearing is defined as systemically important primarily because it is the only retail payment system in Denmark and it also handles relatively large payments. The infrastructure for retail payments has a "pyramid shaped structure" in the sense that it consists of two sub-clearings and their results (sum totals) are netted in the Sumclearing. In this assessment, the infrastructure for retail payment is seen as a complex and interdependent set of procedures encompassing the whole common infrastructure that is used for initiating and processing to the final settlement and reporting. This infrastructure is described in the *Aftalebog* and the *Håndbog for Betalingsformidling* (payment system manual) of the Danish Bankers Association (DBA), the owner of Sumclearing.

3. The assessment was performed using the assessment methodology as described in the *Guidance Note for Assessing Observance of Core Principles for Systemically Important Payment Systems* of the IMF/World Bank. It relied heavily on the thorough and comprehensive self-assessments of the two systems performed by the overseers and in-depth interviews with the staff of the Payment System Department of Danmarks Nationalbank and of the DFSA charged with the oversight, who were the main counterparties in the assessment. Their full cooperation and diligence are greatly appreciated.

4. Prior to the mission, Danmarks Nationalbank provided all the necessary documentation in the form of relevant laws, articles, brochures, guidelines, etc., and completed the questionnaire on payment systems. Also two books published by Danmarks Nationalbank on, respectively, monetary policy and payment systems in Denmark were made available. The latter provides a thorough description of the infrastructure for the settlement of payments and securities and the risks therein.[29]

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[28] The assessment was performed by Jan Woltjer, Monetary and Capital Markets Department, International Monetary Fund, formerly with the De Nederlandsche Bank.

[29] These books are available on Danmarks Nationalbank's website: http://www.nationalbanken.dk/dnuk/specialdocuments.nsf.

5. The assessor did not face any problem limiting the assessment process. During the mission, the assessor also carried out an assessment of the observance of the CPSS/IOSCO Recommendations for Securities Settlement Systems of VP, the Danish Central Securities Depository (CSD).

Institutional and market structure

6. KRONOS is the RTGS system used to settle monetary policy transactions and large-value interbank transactions. It is a multicurrency system that settles transactions in Danish kroner and euro. For the settlement of euros KRONOS is linked to TARGET, the RTGS system of the ESCB. In addition, the system settles transactions in Swedish kroner and Icelandic kroner, however, only in connection with the settlement in VP of securities denominated in these currencies. KRONOS also settles the kroner leg of foreign exchange transactions that are cleared via the Continuous Linked Settlement (CLS) system. The Sumclearing (retail payment system) and VP (securities settlement system) settle via clearing accounts that their participants have opened with Danmarks Nationalbank.

7. The payment system infrastructure in Denmark is highly developed and technologically well advanced. A broad variety of payment instruments are processed varying from checks and paper-based credit transfers to card transactions. In 2005, around 1.1 billion payments with a value of DKr 5,027 billion were processed in the Sumclearing infrastructure. With around 670 million payments by cards in 2005, Denmark had the highest number of card transactions per capita in Europe. Especially the use of Dankort, a common debit card product of the Danish banks, is very popular and widely accepted by Danish retailers. Credit cards have only a minor market share due to the differences in price policy. A large amount of recurrent bills for telephone, utilities, and other services (168 million in 2005) are paid via direct debits, with 9 out of 10 households using the services of Payment Business Services (PBS). A similar service is developed for private and public business enterprises for paying for goods and services bought from other firms.

8. E-banking is intensively used in Denmark, while the use of checks is declining. About 2.7 million Danish citizens have opened an e-banking account and send in their payment orders via the internet. Checks are especially used for fulfillment of larger payment obligations (average value per transaction cleared through the Sumclearing in 2005 was DKr 22.850). The number and value of payments by checks have been halved since the introduction of more modern payment instruments as the direct debit and Dankort in the beginning of the 1980s. It is likely to decline further. Recent initiatives have made it possible for government agencies to increase their use of electronic credit transfers at the expense of checks, when making payments to citizens, since all citizens are obliged to have a bank account.

9. The infrastructure for retail payments comprise three parts: two sub-clearings (the electronic clearing and truncation system and the PBS clearing); and the Sumclearing. The results of the sub-clearings are combined and cleared in the Sumclearing and the final result is settled via the accounts participants have opened at Danmarks Nationalbank.

10. In both subsystems, payments are submitted continuously 24 hours per day. The electronic clearing and truncation system processes checks, credit transfers, and cash withdrawals by clients of other banks. Banks transmit the checks and the other categories of payments they receive in paper form or electronically to their data processing center. The datacenters exchange bilaterally information and prepare a list of debit and credit balances for each of their participants vis-à-vis every other participant in the subsystem. In the evening these balances are sent into the Sumclearing. The PBS clearing processes direct debits and EFTPOS transactions with a debit or credit card and cross-border card transactions.

11. The PBS clearing is a common infrastructure, owned by the banking industry and provides services to all Danish and foreign banks active in the Danish market. It calculates bilateral positions for all its participants and sends this into the Sumclearing, which settles the positions together with the position of a participant in the electronic clearing and truncation system. The Sumclearing settles payments in both kroner and euro.

12. Transactions in the financial markets are cleared via VP, the Danish CSD, and until recently FUTOP, the clearinghouse for derivatives.[30] KRONOS, Sumclearing, and VP settle via clearing accounts their participants have opened with Danmarks Nationalbank. Denmark's capital market is typically a bond market with active trading in mortgage bonds and government securities. Although, most of the bonds are listed on the Copenhagen Stock Exchange (CSE), most of the trading is carried out OTC in the informal interbank telephone market. (For more details, see the assessment of the CPSS Recommendation for Securities Settlement Systems).

13. No payment system reform as such has taken place since the introduction of KRONOS in November 2001 or is planned for the near future. The developments of the payment infrastructure and in payment instruments are mainly market driven.

Prerequisites for effective payment systems oversight

14. All relevant prerequisites for effective payment and clearing and settlement systems are fulfilled.

[30] In 2005, FUTOP was taken over by OMX Group AB in Sweden. It does no longer operate under the umbrella of a Danish license and regulations. However, derivative contracts in Danish kroner are still settled on the accounts in Danmarks Nationalbank.

15. A key characteristic of the Danish payment system infrastructure is the high degree of co-operation within the financial sector in relation to the technical infrastructure. The main parts of the infrastructure for the clearing of retail payments and securities are owned by the banks collectively. This cooperation has resulted in unified systems handling all types of retail payments. All banks have access to the common infrastructure and also the smaller banks can offer their clients a full range of payment services. The common infrastructure is highly automated. The governance framework is well arranged and all banks can influence the decision taking process on development, pricing, and other relevant issues. Collusive practices and discrimination in payment systems are not allowed. The Danish Competition Authority is responsible for the enforcement of these rules laid down in the Danish Competition Act.

16. Denmark has a sound legal infrastructure for payment and securities settlement transactions in which key issues as finality, netting, delivery-versus-payment (DVP) and the enforceability of collateral arrangements are well regulated. Electronic signatures and the use of electronic data is recognized by the court and all contractual relationships are enforceable. A zero hour rule does not exist. Finality of payments is ensured in case of bankruptcy. There are separate laws for the provision of payment instruments that also regulate consumer protection with respect to electronic payments and card payments. Accounting practices are up to international standards.

17. Payment systems are overseen by the DFSA and Danmarks Nationalbank, which cooperate closely. The oversight powers of the two institutions are regulated in the STA. The cooperation and consultative arrangements between the two overseers are laid down in a MoU that is publicly available. The STA was amended effective March 1, 2006, which further clarifies the oversight authority. There is a narrow cooperation between central banks and banking supervisory authorities with respect to crisis management in the Scandinavian countries and in the EU.

18. There are efficient procedures for the resolutions of problems in case of fraud, errors, delays, and failures. However, the procedures in case of a bankruptcy in VP and in the Sumclearing to reduce replacement cost risk, credit risk, liquidity, and possible systemic could be strengthened. The Act on certain payment means, applicable on electronic payment instruments, protects consumer on excessive risks due to fraud. Due the design of the infrastructure for debit card transaction, the system might be vulnerable to fraud (use of magnetic stripe cards, no centralized check on availability of sufficient balances in the account, part of the infrastructure is still signature based instead of pin-based). The introduction of EMV-chip cards to replace the magnetic stripe card with a view to reduce the vulnerability encounters resistance from the retail sector, since the upgrade of their terminals is costly for them. A comprehensive cost benefit analysis for the different payment instrument for all the parties involved, as well as a thorough comparison of the costs and fees structure in Denmark with costs and fees in other similar countries, is not yet available. A clear analysis of the incentives to use the most efficient payment in certain situations would be useful to gauge the macro-economic efficiency and reduce the overall level of costs.

Main findings

19. The assessment demonstrates that KRONOS, the RTGS system for large-value payments operated by Danmarks Nationalbank can be classified as a generally sound, efficient, and reliable system, although some minor improvements are possible.

20. Sumclearing, as a deferred net settlement system for retail payments has more difficulties to fully observe the CPSIPS, since the risk management measures taken in case of a default are inadequate, as unwinding is the principle solution in such cases. The problems might aggravate during a crisis situation due to the practice of making payments received via the direct debit services of PBS already available to the beneficiary the day before the settlement is final. A reversal of these payments in a default would encounter major operational difficulties and may take almost a week, if possible at all. On the other hand, it should be noted that under normal circumstances systemic risk is small due to other participants' access to abundant intraday liquidity facilities at Danmarks Nationalbank. Danish banks generally have large portfolio of bonds that are accepted as collateral. This source of liquidity, however, is also the main protection against systemic risk in other systems like VP.

21. Danmarks Nationalbank has built up special knowledge and skills for the oversight of systemically important payment and clearing and settlement systems for securities and has done an excellent job by describing the payment and clearing and settlement infrastructure in well organized book that also highlights the risk in payment systems and several other relevant issues. Effective March 1, 2006, the Bank was officially charged as the sole overseer of payment systems important for implementing monetary policy transactions with a view to improving their efficiency and strengthen the stability of these systems by an amendment to the STA. Nevertheless, the oversight methodology and internal procedures could be worked out in more detail and the reporting and cooperation with other relevant authorities in the payments area could be improved.

Table 1. Summary of Main Findings of Assessment of Observance of CPSS Core Principles for Systemically Important Payment Systems and of Central Banks' Responsibilities

Subject	Main Findings and Recommended Corrective Action Plan
Understanding of the system's impact on risks; and procedures for the management of risks (CPs II-V)	*Sumclearing* The Danish Bankers Association should as soon as possible: - Draft a memorandum that provides a comprehensive description of the functioning of the system, the risks involved, the risk management and liquidity management measures and tools for participants, the consequences of an unwind, and the main rules and regulations and procedures, especially in abnormal situations. This memorandum should be published on its open website in English and in Danish.

Subject	Main Findings and Recommended Corrective Action Plan
	- Lower the risks in the system by either implementing a loss-sharing and liquidity arrangement or lowering the positions in the netting by setting lower maximum limits for individual transactions and dividing the payment flows effectively in batches during the settlement day instead of concentrating them in the first normal settlement cycle at 1:30 a.m. - Take measures to prevent the booking of the retail payments in the account of customers before the settlement is final, as long as the settlement is not guaranteed by adequate risk management measures. Alternatively, the results of the ordinary clearing could be settled immediately after the processing is finished, whereupon the data on the underlying retail payments could be distributed (see above).
Assets for settlement (CP VI)	*Sumclearing* The overseers of the system should: - Gather information on possible concentration risk, the amounts settled and the deposit risk for the smaller banks that use a specific settlement bank, and analyze the consequences for smaller banks and the trust in the system in case of a default of one of the larger settlement banks.
Security and operational reliability; and contingency arrangements (CP VII)	*KRONOS* - Coordinate the contingency plans of Danmarks Nationalbank, BEC, VP, PBS, and develop an infrastructure for broad testing of emergency procedures. - Re-negotiate with BEC the maximum restart time and agree to comply with the international best practice of two hours. - Develop the securities analysis methodology developed by the ECB further and adapt it according to new insights with respect to IT security. - Ensure that communication via the proprietary network observes international standards with respect to integrity. - Stress test all parts of the system adequately and ensure sufficient peak capacity. - Analyze the complexity of the system design and its interaction with other systems of Danmarks Nationalbank or of BEC and study how this complexity

Subject	Main Findings and Recommended Corrective Action Plan
	could be reduced. *Sumclearing* - The contingency measures should be tested with participants and the emergency measures should be coordinated with other system providers.
Practical for the markets and efficient for the economy (CP VIII)	*KRONOS* - Re-analyze in depth the costs of the system. - Define the part of the cost to be borne by the central bank. - Develop a price strategy that takes into account the fees charged in comparable countries.
Objective and publicly disclosed criteria for participation (CP IX)	*KRONOS* - Reconsider the discretionary powers with respect to access and exit. - Analyze the effects of the language barriers for remote members and whether they are in line with the very open access policy and the promotion of Denmark's financial markets. - Formulate explicit exit procedures in the rules and regulations. *Sumclearing* The Danish Bankers Association should: - Facilitate the public disclosure of the access criteria by stating the rules in the memorandum mentioned under CP II. - Make the exit rules more formal by drafting exit criteria and work out decision procedures and procedures to facilitate the exit of a participant and publish them in the aforementioned memorandum.
Governance of the system should be effective, transparent and accountable (CP X)	*Sumclearing* The Danish Bankers Association - May want to consider enhancing the transparency of the infrastructure for clearing and settlement of retail payments by making the memorandum, as indicated under CP II, available to the public by publishing it on its open website. - Should take action to comply in full with all Core Principles.
Responsibility B - *The central bank should*	- Draft a mission statement and work out the oversight

Subject	Main Findings and Recommended Corrective Action Plan
ensure that the systems it operates comply with the core principles.	methodology and an implementation plan. - Ensure that the oversight of KRONOS is performed on a continuous basis. - Ensure that sufficient resources and expertise are available. - Establish internal and external relationships within the context of the oversight policy. - Analyze in more depth the pros and cons of the different roles and their usefulness to tackle specific issues in the Danish institutional context and coordinate the use of these different roles.
Responsibility C - *The central bank should oversee observance with the core principles by systems it does not operate and it should have the ability to carry out this oversight.*	- Formalize the oversight policy with respect to systems operated outside Danmarks Nationalbank. - Broaden the scope of the oversight with respect to the Sumclearing. - Establish a crisis management framework with respect to problems in the infrastructure. - Ensure that the oversight can be adequately performed in case of outsourcing. - Strengthen the cooperation with other Danish authorities and relevant foreign authorities. - Increase the involvement of the participants in the oversight. - Strengthen the reporting of oversight in the annual Financial Stability Report.

Authorities' response

Large-value payment system (KRONOS)

The assessments and recommendations for improvements in relation to KRONOS essentially reflect the findings of Danmarks Nationalbank.

With regard to the recommendation to renegotiate with the system operator, the legal binding maximum restart time so that it can be reduced from four to two hours, please note that numerous tests in recent years consistently have shown that KRONOS can in practice be restarted in less than one and a half hours. Nevertheless, Danmarks Nationalbank agrees with the recommendation and has started negotiations with the system operator with the aim of resolving the issue.

Regarding the recommendation to further analyze the system's efficiency, Danmarks Nationalbank notes that the large number of direct participants shows that an appropriate balance between security and efficiency seems to have been reached. The cost recovery in the system is less than full, but seems adequate and in line with similar RTGS-systems in other small- to medium-sized European countries.

Retail payment system (Sumclearing)

The assessments and recommendations for improvements in relation to the Sumclearing are broadly in line with the findings of Danmarks Nationalbank and the DFSA. However, we would like to emphasize that the participants generally have far more eligible collateral than needed for their daily net payments in not only the Sumclearing, but also in the VP settlement and CLS.[31]

Danmarks Nationalbank and the DFSA agree to the recommendation that the practice of booking retail payments in customer accounts before the settlement of the payments are final should be terminated. Therefore, Danmarks Nationalbank and the DFSA will start discussions with the banking sector with the aim of changing this practice.

Danmarks Nationalbank and the DFSA take note of the recommendation to lower the financial risks in the system by implementing additional measures such as loss-sharing agreements or pools of collateral or by lowering the net positions settled, for instance, by restructuring the settlement cycle and introduce new settlement blocks during the day. These proposals will in the near future be further analyzed. Danmarks Nationalbank will start discussions with the system owner with a view to identifying costs and benefits associated with the various proposals.

The supervision of settlement agents and the indirect participants as well as possible concentration risks related to such indirect participation lies primarily with the DFSA. The DSFA has taken note of the recommendation to gather information on possible concentration risk, etc., and analyze the consequences for smaller banks and the trust in the system in case of a default of one of the larger settlement banks. As the DFSA has already considered these questions as part of its supervision of settlement banks, the DSFA's understanding of the

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[31] In a study triggered by this assessment, it was demonstrated that in 2005, all larger banks' eligible collateral significantly exceeded their total net payment obligations in all systems—even when the participant with the largest net payment obligation was withdrawn from the settlement on every day during 2005 and all the remaining participant's net positions were recalculated. Among the minor banks, however, only a handful of banks had recalculated net positions, which on very few days surpassed the value of their eligible collateral. However, this reflects flaws in the methodology used in the study that tends to exaggerate the effects on small banks and does not include the fact that banks can pledge securities for intraday credit already in the settlement cycle in which the securities are received. The study "Protection of Settlement in Danish Payment Systems" can be found in *Financial Stability 2006* published by Danmarks Nationalbank (Copenhagen). It is available on: http://www.nationalbanken.dk/.

recommendation is that such supervision, in the opinion of the IMF, should be carried out on a more formalized and recurrent basis. Steps will be taken to this effect.

Central bank responsibilities

The recommendations to further strengthen the oversight of the Danish payment and settlement systems are consistent with the self-assessment done by Danmarks Nationalbank. It should be noted though that important steps towards full observance of the international standards on central bank oversight have already been taken. The legal basis, for instance, has been strengthened by an amendment to the STA, which has become effective from March 1, 2006. Following this amendment, the "memorandum of understanding between Danmarks Nationalbank and the Danish Financial Supervisory Authority concerning payment systems and clearing centers" will be revised with a view to further enhance the cooperation between the two authorities. In addition, Danmarks Nationalbank will take the necessary steps to broaden the oversight of the retail payment system (Sumclearingen) with a view to cover all major components of the system, including different payment instruments and sub-clearings. High priority will be assigned to formalize the oversight task through written procedures and guidelines. Thus, full observance is expected to be achieved in 2006.

Report on The Observance of the Recommendations for Securities Settlement Systems

General

1. The assessment of the observance of the Committee for Payments and Settlement Systems (CPSS) and the International Organization of Securities Commissions' (IOSCO) Recommendations for Securities Settlement Systems dated November 2001 was carried out as part of the first FSAP mission to Denmark, November 7–18, 2005.[32]

2. Værdipapircentralen (VP) is the sole CSD in Denmark and registers the ownership of securities issued in the country, clears, and settles securities transactions in the regulated markets and in the OTC market. In 2005, 10.2 million transactions were settled in VP with a market value of DKr 30,924 billion (around US$5,012 billion), made up of DKr 27,485 billion in bonds and DKr 3,439 billion in shares.

3. Prior to the mission, Danmarks Nationalbank, the central bank, and the DFSA, as overseers of VP, prepared a comprehensive and thorough self-assessment, which was used as the basis for this assessment.

Scope of the Assessment

4. VP registers, clears, and settles a broad range of securities, such as treasury bills, all other negotiable money market instruments, bonds issued by the public and private sector, including mortgage bonds, equities, and investment certificates issued by mutual funds.

5. Derivatives trades in Danish securities are conducted through OMX Derivatives Markets, a secondary name to Stockholm Stock Exchange Ltd (SSE), used for the derivatives trading and clearing operations. When OMX clears derivatives transactions, this means that OMX Derivatives Markets acts as the central counterparty (CCP) for all derivatives trades conducted in this market. The size of the derivatives market in Denmark has so far been relatively small (in mid-2005, around 700,000 contracts were outstanding with an average daily settlement of DKr 1.5 million). Futures and options on Danish securities have previously been listed on the FUTOP (CSE) but have recently been transferred to SSE in connection with the merger of the Nordic and Baltic stock exchanges into the OMX Group AB.[33]

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[32] The assessment was performed by Jan Woltjer, Monetary and Capital Markets Department (MCM), International Monetary Fund (IMF), formerly the De Nederlandsche Bank.

[33] For information on the OMX Group, see: http://www.omxgroup.com/en/index.aspx .

6. For these reasons, the assessment of systemically important securities settlement systems (SSS) covers only VP as the core institute of the Danish infrastructure for clearing and settlement of securities. No other institution is active as a CSD, SSS, or CCP in Denmark, albeit that the law does allow other entities to offer registration and clearing and settlement services and, thus, does not grant a monopoly to VP.

Institutional and market structure

7. Denmark's capital market is mainly a bond market with particularly active trading in mortgage bonds (turnover 2004: 282.5 percent of GDP) and in government paper (turnover: 157.5 percent of GDP). In 2004, the total turnover of bonds and treasury bills amounted to 486.7 percent of GDP, against a turnover in listed equities of 40.9 percent of GDP. The trading in derivatives was very modest with 1.3 percent of GDP.

8. Both bonds and equities can be traded on the CSE. It is a subsidiary of the OMX group, which also owns the stock exchanges in Estonia, Finland, Latvia, Lithuania, and Sweden.[34] All the stock exchanges use the common trading system SAXESS, which also is used by the stock exchanges of Iceland and Norway. SAXESS offers functionalities to support both order driven markets and price driven markets. The CSE has 44 members, mostly local and foreign banks and some specialized broker firms. The total market value of the stock exchange transactions increased by 23.8 percent from 2004 to 2005, of which equity trading increased 57.8 percent during the same period.[35] Most of the bond trading is done OTC in the informal telephone market. To enhance transparency, trades in the OTC market must be reported to the CSE. Realized prices and volumes are published on its electronic bulletin board.

9. Danish government bonds can also be traded on the MTS platform located in Belgium. It was launched by the primary dealers in Danish government securities in 2003. MTS Denmark's objective is to promote international trading in Danish government securities. There are 16 MTS participants of which 2 are clearing members of Euroclear Bank. MTS Denmark is governed by a committee composed of the Government Debt Management at Danmarks Nationalbank, the Danish Primary Dealers, and a representative of MTS S.p.A.[36] The daily turnover is approximately DKr 2 billion (US$325 million). The 14 primary dealers quote bid and offer prices.

[34] In Denmark, there is also a small marketplace for non-listed stocks called Dansk Authoriseret Markedsplads A/S. For more information, see http://www.danskamp.dk/search.asp.

[35] In 2004, trading in bonds at CSE amounted to Dkr 7,059 billion and in 2005 DKr 8,534, while the trading in equities during the same period amounted to, respectively, DKr 593 billion and DKr 936 billion. Note, however that the stock market index increased 37¼ percent during 2005.

[36] For details on MTS, see: http://www.mtsdenmark.com/.

10. All securities traded in the regulated markets and in the OTC market are cleared and settled by VP, which is owned by the financial sector and Danmarks Nationalbank. Securities traded on the MTS platform denominated in euros are settled in the International Central Securities Depository's (ICSD), Euroclear and Clearstream, where also securities denominated in kroner can be settled. To promote the efficient settlement of cross border trades, a very effective link is developed between VP and Euroclear that allows among others for DVP and the settlement of back-to-back transactions without the loss of value dates. Also between VP and Clearstream a link is established that allows for the settlement on a DVP basis between participants of VP and the ICSD.

11. The securities registered in VP are all dematerialized and settled on a multilateral netting basis in several settlement cycles during the settlement day. VP does not act as central counterparty, nor act as a settlement bank (offering of cash services) and does not organize a securities borrowing and lending arrangement. Trades can also be settled in VP on a real-time gross basis. All settlements are conducted on a DVP basis with the settlement of the cash leg in central bank money. VP has reached a settlement agreement with Danmarks Nationalbank that includes collateral management services by VP for intraday credit granted by the central bank. This arrangement has special legal foundation in the Securities Trading Act.

12. Securities in VP are normally registered in the name of the end investor (3.0 million accounts have been opened in VP). Banks and other eligible financial institutions act as account controllers for investors and offer them cash settlement services. Large customers, such as investment funds or pension funds are allowed to report directly to VP. Account controllers can opt to become clearing members and settle transactions on behalf of their clients. In 2004 VP had 131 clearing members, of which 31 were remote members, i.e., foreign financial institutions, located abroad, that act as custodian for clients in their countries that wish to invest in Danish securities. Foreign investors hold especially stocks (28.4 percent of all stocks issued) and bonds (15.9 percent). Foreign custodians are allowed to open omnibus or nominee accounts for their clients and normally do not register the investment directly in the name of the end investors.

Description of Regulatory Structure and Practices

13. The Danish Securities Council (the Council) has overall responsibility for the framework within which the securities market operates and for supervision of the market. The main focus of the Council is on market supervision and surveillance. Thus, it issues rules relating to the general conditions under which the Danish securities market operates, as well as rules that regulate clearing and settlement institutions and CSDs. The Council is composed of representatives of securities dealers, issuers, and investors, including Danmarks Nationalbank.

14. The DFSA is responsible for regulating the Danish Financial sector. It is charged with the authorization and prudential supervision of market participants and market institutions. It also designates payments and securities settlement systems under the Settlement Finality Directive and notifies Danish system operators and relevant authorities abroad in case of a bankruptcy. The task and responsibilities of the DFSA with respect to the securities sector are outlined in the STA.

15. The overall objectives of Danmarks Nationalbank are to maintain a safe and secure currency and to facilitate and regulate the circulation of money and the extending of credit. In the opinion of the central bank, this includes monitoring the stability and efficiency of payments and securities settlement systems. In February 2006 this was acknowledged by the Danish Parliament and its oversight task with respect to payment systems was set out in an amendment of the STA. Till that moment the oversight role had been based on agreements with market participants and on moral suasion.

16. The Nationalbank, as the settlement bank of VP, has set specific requirements to ensure the safety and soundness of the infrastructure for clearing and settlement of securities. These requirements were laid down in the settlement agreement between the central bank and VP and oblige VP to observe the CPSS/IOSCO recommendations for securities settlement systems.

17. Danmarks Nationalbank and DFSA work closely together with respect to the oversight of payments and securities settlement systems and have concluded a MoU on cooperation and coordination concerning oversight.

Information and Methodology used for Assessment

18. The assessment was based on the self-assessment carried out by the Danish authorities, using the CPSS/IOSCO assessment methodology for Recommendations for Securities Settlement Systems. Also a self-assessment conducted by VP and the completed questionnaire of the European Central Securities Depository association (not yet published) were consulted by the assessor. Discussions were held with Danmarks Nationalbank, the DFSA, VP, and with market participants. Relevant laws, rules and regulations, memorandums of understanding, and VP's annual-report were made available. The assessor benefited greatly from the description of clearing and settlement in *Payment Systems in Denmark*, a book published by Danmarks Nationalbank, as well as from several articles written by staff members of the central bank.

Main Findings

Legal risk (recommendation 1)

19. There is a consistent set of laws, regulations, and contracts that form the legal foundation for custody and clearing and settlement of securities. All relevant laws and regulations are publicly available. Finality is well regulated, also in the case of a bankruptcy,

and a zero-hour rule does not exist. Customer assets are protected by law against the bankruptcy of an account controller or custodian. Other key issues, such as dematerialization, netting, securities lending arrangements, and the establishment of collateral interest are also well regulated. All laws, regulations, and contractual arrangements are fully enforceable.

20. VP is fully aware of possible conflicts of laws in case of linkages and remote participation and has clearly indicated that Danish law will apply to each aspect of the settlement process. If relevant, conflicts of law are identified through legal opinions.

Pre-settlement risk (recommendation 2–5)

21. Matching and confirmation are essential elements to trigger settlement in VP and all transactions are matched prior to settlement, mostly on trading day. Transactions in the regulated and OTC market are settled on a rolling settlement procedure on T+3 or on a shorter settlement cycle in VP. Incentives are in place to ensure timely settlement and settlement failures are closely monitored.

22. No central counterparty is established in Denmark for the settlement of securities transactions. In the opinion of market participants, such an entity does not add value and might impair the existing efficient settlement arrangements. However, the cost benefit studies were never published and it is difficult to know whether the existing liquidity and replacement cost risks were adequately balanced against the costs of setting up such an entity and whether alternative measures were studied to reduce the existing risks in the markets. Nor is it clear whether the changing risk profiles were taken into account as a result of the implementation of order driven platforms and internationalization of the trading in Danish securities on the stock exchanges of other Scandinavian and Baltic countries in the framework of NOREX and the cross-border trading of Danish government bonds in the European market (MTS-Denmark).

23. Securities lending is well established in Denmark as a method to promote timely settlement and is fully supported by the legal, accounting, and tax framework. A well developed market for securities lending exist, with banks and the Danish government offering securities lending services and Danmarks Nationalbank acting as last resort if, for whatever reason, participants are not able to borrow securities in the market.

Settlement risk (recommendation 6–10)

24. As one of the first countries, Denmark introduced in 1983 the electronic registration of securities and since then has been very active in promoting dematerialization of all outstanding securities. At the moment, all shares and bonds traded in regulated markets and in the OTC market are dematerialized, as well as a large amount of unlisted unit trusts.

25. All transactions in VP are settled on a DVP basis in central bank money between clearing members. However, smaller participants in VP make use of a so-called primary cash provider, and are thus exposed to deposit risk. The various netting cycles during the long

opening day, as well as the facility for a trade for trade RTGS settlement facility, result in almost all trades being settled with intraday finality, and they can be used again for other settlement obligations on the same business day.

26. No rigorous risk control measures are in place to ensure timely settlement in the event of bankruptcy of the participant with the largest obligation to settle in the deferred netting schemes. However, stress test studies of Danmarks Nationalbank indicate that in the present situation, participants can raise sufficient liquidity under the automatic collateralization arrangement to reduce the liquidity pressure that may occur in such an event. However, the effects of multiple failures were not analyzed.

Operational risk (recommendation 11)

27. VP has developed an appropriate IT security policy and has pro-actively assessed possible threats to the system and the organization. The risk and the adequacy of the risk control measures are reviewed annually. Adequate contingency plans and back-up facilities are available and tested periodically. Operational reliability is high and sufficient capacity is available to handle peak volumes.

Custody risk (recommendation 12)

28. In Denmark, investors are protected against claims of an account controller, custodian, or VP. Normally, securities are directly registered in VP in the name of the end-investor. In case of the use of omnibus or trustee accounts, segregation of the custodian's own investments and the securities of its clients is required. Liabilities of account controllers and custodians are clearly defined and monitored and ample compensation schemes are in place in case of theft, misuse, or errors.

Other issues (recommendation 13–19)

29. The governance structure of VP is clearly specified, transparent, and ensures the fulfillment of public interest requirements and promotes the objectives of owners and users. The access criteria do not limit access other than on grounds of legal risk to finality. The operations of the CSD are cost effective and VP provides its participants with sufficient information to identify the risks and costs associated with using the system. VP has developed efficient and safe DVP links with Euroclear and Clearstream and free-of-payment (FOP) links with Iceland and Sweden. No provisional deliveries take place over these links.

30. VP is supervised and regulated by DFSA under the STA. Danmarks Nationalbank is also involved in the oversight based on its responsibility for safe and efficient payment arrangements. The cooperation and coordination between the two authorities are effectively organized and laid out in a MoU.

Table 2. Recommended Actions to Improve Observance of CPSS-IOSCO Recommendations for Securities Settlement Systems—Værdipapircentralen (VP)

Subject	*Main Findings and Recommended Corrective Action Plan*
Settlement risk (Rec 6-10)	- The effects of the failure of the largest participant and the effects of multiple failures should be analyzed in more depth, as should the costs of guaranteeing the settlements or preventing losses from such events, for instance by collateralization of market risks. - Within the framework of ensuring financial stability, an analysis should be undertaken of the effects of spillovers to other systems in case of failure of the largest participant and the losses related to this as well as to outstanding uncollateralized loans in the money market and the tiered structure of VP and Sumclearing. - The overseers should monitor the effects of concentration risk related to the use of the same primary cash provider and assess this risk and, if deemed necessary, take appropriate action.
Operational risk (rec 11)	- VP should coordinate and test its contingency plans and emergency procedures (including communication with participants) with the system owners and operators of KRONOS and Sumclearing.
Other issues (rec 13 -19)	- The overseers should be allowed to oversee activities and systems in case of outsourcing and should have the right to conduct on-site inspection, if deemed necessary.

Authorities' response

Danmarks Nationalbank and the DFSA found that the IMF has made a very thorough and comprehensive assessment of the Danish securities settlement system (VP-afviklingen) and essentially agreed with the IMF's recommendations. Although the need for a pool of collateral and a loss-sharing agreement historically have not been deemed necessary in Denmark, Danmarks Nationalbank will review the benefits and costs in introducing additional measures to reduce the settlement risks in Danish securities trading. In this context benefits and costs of a central counterparty will also be evaluated. Furthermore, we will address the potential effects of an increase in foreign participation in the system. However, we would like to emphasize that the participants generally have far more eligible collateral than needed for their daily net payments not only in VP settlement, but also in the Sumclearing and CLS.[37]

Supervision of concentration risks that may stem from indirect participation with regard to payments in the VP-system is already part of the supervision of the "indirect participants" and the payment providers by the DFSA. However, based on the recommendations of the IMF, steps will be taken to further formalize supervision in this area.

Central bank responsibilities

The recommendations to further strengthen the oversight of the Danish payment and settlement systems are consistent with the self-assessment done by Danmarks Nationalbank. It should be noted though that important steps towards full observance of the international standards on central bank oversight have already been taken. The legal basis, for instance, has been strengthened by an amendment to the STA, which has become effective from March 1, 2006. Following this amendment, the "MoU between Danmarks Nationalbank and the Danish Financial Supervisory Authority concerning Payment Systems and Clearing Centers" will be revised with a view to further enhance the cooperation between the two authorities. In addition, Danmarks Nationalbank will take the necessary steps to broaden the oversight of the retail payment system (Sumclearingen) with a view to cover all major components of the system, including different payment instruments and sub-clearings. High priority will be assigned to formalize the oversight task through written procedures and guidelines. Thus, full observance is expected to be achieved in 2006.

[37] In a study triggered by this assessment, it was demonstrated that in 2005, all larger banks' eligible collateral significantly exceeded their total net payment obligations in all systems—even when the participant with the largest net payment obligation was withdrawn from the settlement on every day during 2005 and all the remaining participant's net positions were recalculated. Among the minor banks, however, only a handful of banks had recalculated net positions, which on very few days surpassed the value of their eligible collateral. However, this reflects flaws in the methodology used in the study that tends to exaggerate the effects on small banks and does not include the fact that banks can pledge securities for intraday credit already in the settlement cycle in which the securities are received. The study "Protection of Settlement in Danish Payment Systems" can be found in *Financial Stability 2006* published by Danmarks Nationalbank (Copenhagen). It is available on: http://www.nationalbanken.dk/.

Report on the Assessment of the Financial Action Task Force 40 + 9 Recommendations for Anti-Money Laundering and Combating the Financing of Terrorism

Introduction

1. The assessment of the observance of FATF 40 Recommendations 2003 for Anti–Money Laundering (AML) and 9 Special Recommendations on Combating the Financing of Terrorism (CFT) was prepared using the AML/CFT Methodology 2004 and was carried out as part of a separate mission to Denmark from February 27–March 15, 2006.

Information and methodology used for the assessment

2. In preparing the detailed assessment, Fund staff reviewed the institutional framework, the AML/CFT laws, regulations, guidelines and other requirements, and the regulatory and other systems in place to deter money laundering and the financing of terrorism through financial institutions and DNFBPs, and examined the capacity, the implementation, and the effectiveness of all these systems. The assessment is based on the information available at the time of the on-site visit and immediately thereafter.

Main findings

3. Denmark has a solid AML/CFT framework, recently updated with a new AML/CFT law that should provide a sound basis for an effective AML/CFT regime. It was developed in the context of the perceived and historical money laundering/financing of terrorism (ML/FT) threats and has effectively used moral suasion, "light-touch" supervision and enforcement, informal cooperation, and social consensus to meet that level of threat. Once fully in effect, the March 2006 Act on Measures to Prevent Money Laundering and Terrorist Financing (MLA) will create a legal framework for mainland Denmark that largely addresses the revised FATF standard and transposes the Third EU Directive on Money Laundering. However, building a fully-effective, FATF-compliant system that can protect Denmark from potential future threats is still a work in progress. Such a task will require a systematic review of policy and operations, including consideration of enhanced prosecution of the ML/FT offense, more pro-active supervision of financial and especially the non-financial sectors, and a re-evaluation of the role and responsibilities of the FIU. Given the high competence and dedication of the professionals working within the Danish system, such changes are clearly within Denmark's grasp.

4. The new legislation, which only entered into force during the on-site visit on March 1, 2006, sets forth a comprehensive range of requirements regarding preventive measures, but it is too early to assess how effectively the new elements will be implemented. Moreover, some key provisions—such as those regarding the enhanced customer due

diligence (CDD) requirements for non face-to-face transactions, cross border banking relationships and Politically Exposed Persons (PEPs)—do not enter into force until January 2007 and some others need to be fine tuned to ensure full consistency with the FATF standards. Once all provisions of the law enter into force, implementing the new legislation will require outreach to the private sector and close supervisory oversight.

5. The justice and law enforcement aspects of the Danish system are characterized by a well developed legal framework for the criminalization of ML and FT and by advanced and flexible alternatives for the restraint and confiscation of proceeds of crime. Prosecutors and law enforcement personnel work in close cooperation, and there have been many convictions in recent years although with few exceptions they have involved very minor violations such as receipt of stolen goods. FT is being pursued with a couple of cases in the court system. An exemplary mutual legal assistance and extradition framework in Denmark facilitates wide ranging possibilities for assistance which is freely and effectively provided.

6. The FIU has direct access to a wide range of data. It conducts basic checks of suspicious transaction reports (STRs) against databases but virtually all STRs received are disseminated for investigation. There is considerable room for enhancing analysis of STRs. The current level of staffing and types of training may not be sufficient going forward. The overall level of reporting by all sectors to the FIU is low.

7. Most Danish financial institutions (FIs) appear to have well-established internal procedures for addressing AML/CFT risks, although their compliance with these requirements could be more actively supervised. Moreover, supervisory authorities have a limited range of administrative sanctions to enforce compliance. Also, the supervisory regimes in the DNFBP sectors—even where they were established by prior law—do not appear to be robust.

8. The Kingdom of Denmark consists of three jurisdictions (Denmark, the Faroe Islands, and Greenland) each with a different set of laws relevant to AML/CFT. The new MLA has not been extended beyond Denmark. The Danish government is working with the local authorities to update various aspects of their AML/CFT regimes, permit the extension of the relevant UN conventions, and ensure full implementation of UN Security Council resolutions (UNSCRs). The current situation has had an impact on a number of ratings. Despite the small relative size of these jurisdictions, the absence of full criminalization for terrorist financing, full implementation of the UNSCRs, and related issues pertaining to the scope of extradition are of special concern. For preventive measures, although only the 1993 MLA is applicable to them, the relatively small size of the financial and DNFBP sectors makes this a less significant shortcoming.

Summary of assessment report

9. Denmark is neither a major international financial center nor historically a major venue for organized crime. Traditional criminal activity includes biker-related violent and financial crime, narcotics trafficking, human trafficking, and goods smuggling. Corruption is

negligible. Authorities recognize that even the relatively low level of organized crime can generate significant proceeds, but there are no accurate estimates of the amounts involved and authorities believe that in most cases, the proceeds of crime are transferred elsewhere.

10. FT poses some material risk within Denmark and has been the subject of a few prosecutions. Danish society contains elements which sympathize or have relations with groups or organizations involved in terrorist activities, which creates potential for recruitment and fundraising for terrorist purposes. Various contact groups and outreach efforts have been undertaken to deal with these issues.

11. The Danish financial sector is deep (total assets close to five times GDP), sophisticated and dominated by the banking sector. Denmark's new AML/CFT law covers about 4800 lawyers, 2700 accountants/auditors, 2700 real estate agents, and 6 casinos. Company services are generally supplied by lawyers. Rather than making its 650 dealers in precious metals and stones reporting entities, Denmark instead outlaws all cash transactions above DKK 100,000 (€13,410)[38] for all forms of business.

12. ML is criminalized through a money receiving offense which covers the conduct set forth in the applicable conventions. It extends to the proceeds from any crime committed intentionally. Grossly negligent acquisition or receipt of proceeds through an offense is also subject to criminal sanctions. Laundering of one's own proceeds is not actionable unless proceedings against the person for the predicate crime are not successful. ML is punished by a fine, and/or for the basic offense imprisonment of up to 18 months and for the aggravated offence up to six years. The imprisonment penalty for the basic offense is less than in many countries. Penalties imposed have been relatively low. Legal persons have criminal liability. Provisions in the Faroe Islands and Greenland do not extend to all necessary predicate crimes.

13. The criminalization of FT in Denmark is consistent with international standards, but the Faroe Islands and Greenland, which rely on complicity in the commission of concrete terrorist acts, have not yet enacted specific provisions criminalizing the financing of terrorist acts, terrorists and terrorist organizations. Danish authorities have pursued FT investigations and prosecutions and a couple of cases are pending in the courts.

14. A comprehensive, flexible confiscation framework includes traditional conviction-based confiscation, preventive confiscation, and can require a defendant to prove the legal origin of assets in some instances. Law enforcement has tools to identify, trace and seize criminal and terrorist assets. Statistics do not yet illustrate the efficiency of the system in place. Provisions in the Faroe Islands and Greenland are being updated.

[38] Exchange rate taken from the Financial Times as of May 9, 2006.

15. Denmark implements UN decisions on the freezing of terrorist assets both through European Union (EU) Regulations 2580/2001 and 881/2002 and through national mechanisms. The EU Regulations that Denmark applies do not limit the scope of terrorist assets that can be frozen. When using national mechanisms however, Denmark is not prepared to freeze funds held by, or collected or provided for, terrorists or terrorist organizations for their non-terrorism related activities. Guidance on the implementation of the freezing obligation should be improved, and additional legal provisions and practical arrangements are needed in the Faroe Islands and Greenland.

16. The FIU is an operationally independent unit within the office of the Public Prosecutor for Serious Economic Crime (SØK). Staffed with three prosecutors and seven police officers, it also has access to supplementary staff. It has direct access to a wide range of data but a court order is usually needed to obtain additional information from reporting entities. The FIU's analysis of STRs is limited to gathering information, largely through basic checks against databases. Virtually all STRs are disseminated for investigation, with little additional analysis or value-added. With a likely increase in STRs, the need for more extensive STR analysis, and the possibility that staff are deployed for SØK investigations, there is some concern that the current staffing level of the FIU will not be sufficient going forward. Staff could benefit from more specialized training in the areas of tracing proceeds of crime, financial analysis, and FT.

17. Denmark has an efficient, integrated law enforcement and prosecution approach, with a well staffed national prosecutorial and law enforcement office, local police districts with both police officers and prosecutors, a national criminal investigation support center and a service responsible for national security. Only 16 cases have been prosecuted in the last six years for aggravated ML, a low figure even with Denmark's relatively modest level of criminal activity. A couple of FT cases are pending but no convictions have yet occurred.

18. Cash and similar assets in amounts above €/US$15,000 that are transported across borders are required to be declared to customs authorities. However, the small number of declarations suggests low compliance levels and no sanctions for non-compliance have been imposed.

19. The MLA was adopted in March 2006 to implement the third EU AML Directive and the revised FATF Recommendations. The MLA sets forth a comprehensive range of preventive measures, although, key provisions (e.g., enhanced CDD for non face-to-face transactions, cross border banking, PEPs, shell banks, obligations to monitor customer relationships) come into force only in January 2007.

20. The MLA's requirements appear to be generally in line with the FATF standards. However, some CDD requirements need to be adjusted. In particular, there are no requirements to identify and verify that an individual purporting to act on behalf of a legal person or arrangement is so authorized. In addition, the identification requirements for occasional transactions in the case of wire transfers apply only to those involving €15,000 or more, and some exemptions to the CDD requirements, as they do not appear to be justified on the basis of a risk assessment, do not conform with the FATF standard. Not all MLA obligations are covered by sanctions, nor were sanctions applied under the 1993 act. The range of administrative sanctions is limited and relatively few actions taken.

21. STR reporting by Danish financial institutions has been modest and largely concentrated in *bureaux de change* and commercial banks. Little progress has been made since the 1997 evaluation in reporting by the insurance and securities sectors, with virtually no STRs reported. The reporting regime is thus not fully effective.

22. Shell banks may not be established nor, as of January 2007, many banks, mortgage-credit institutions, and electronic money institutions have a correspondent banking relationship with a shell bank. There must be reasonable measures to avoid connections with institutions that permit shell banks to use their accounts.

23. The FSA is responsible for regulating and supervising all financial institutions, except for money remitters and exchange bureaus for which the Danish Commerce and Companies Agency (DCCA) takes responsibility. These authorities are appropriately structured and enjoy sufficient operational independence. Regulation-making authority with respect to AML/CFT is limited.

24. The FSA's AML/CFT supervision has focused on reviewing internal guidelines of FIs and paid little attention to assessing their implementation. The depth and breadth of on-site inspections need to be increased. In the period prior to the assessment, AML/CFT inspections of large banks were infrequent. Since then the FSA has completed on site inspections of the largest banks. The depth and breadth of the DCCA's inspections also need to be increased. The resources allocated to inspections for AML/CFT by both agencies should be reviewed and staff training expanded.

25. The key weaknesses in the AML/CFT regime for DNFBPs relate to implementation and particularly the strength of supervision. Denmark's CDD and STR requirements for DNFBPs, while sharing the general shortcomings detailed above, are relatively robust on paper. However, the recent passage of the MLA leaves no base for judging how effective this regime will be in practice, and the low level of reporting from DNFBPs who were covered under previous legislation raises a significant question. The effectiveness of the ban on cash transactions over DKK 100,000 (€13,410) as a mechanism for eliminating ML/FT risks should be reviewed and evaluated.

26. The Danish AML/CFT supervisory regimes for DNFBPs are largely untested. The Bar and Law Association does not conduct examinations of its members' AML/CFT practices, casino inspectors serve primarily as reporting conduits, and the DCCA is taking on an expanded set of functions likely to tax allocated resources. The DCCA can build on its existing supervisory role for accountants and its role in company formation in overseeing accountants and company service providers. Supervision of the real estate profession may pose greater challenges.

27. Danish legislation permits the formation of several forms of legal persons. In general, legal persons have full legal capacity. However, in some cases the entity is not recognized as a legal person until it is registered. All businesses are registered in a Central Business Register (CVR), and in other registers. Very little beneficial ownership information is available through the CVR and the authorities rely on investigative and inspection powers to obtain information on beneficial ownership. Some companies can issue bearer shares up to their entire capital and beneficial ownership information is available only with respect to holdings that exceed designated thresholds.

28. Non-profit organizations (NPOs) are numerous, diverse, and mainly "regulated" through their relationships with the tax authorities. The largest organizations, accounting for the bulk of the financial activity, have received tax privileges in return for significant levels of financial disclosure. About 75 percent of all NPOs of all sizes have registered their basic identification information with the authorities. The bulk of NPO income comes from Danish Government, EU, or other international organization grants which are closely monitored. Danish authorities have only conducted an informal review of their NPO system, and should use the recent elaboration of the international standard as an opportunity to examine mechanisms for oversight of NPOs more comprehensively and formally.

29. The FIU and other domestic agencies involved in AML/CFT cooperate informally but there is no one mechanism for coordinating national AML/CFT policies and practices. A platform for inter-agency policy level review of AML/CFT initiatives should be established, and the FIU and supervisory agencies should engage in closer and more regular coordination of efforts. The FSA, DCCA, FIU, and law enforcement authorities each have the ability to provide international cooperation by exchanging relevant information, and various cooperation agreements and channels have been established and used for such exchanges.

30. Denmark is a party to all relevant international AML/CFT instruments but they have not yet been extended to the Faroe Islands or Greenland. Denmark has an exemplary MLA framework, and extradition may occur through a series of instruments. The Faroe Islands and Greenland have a more circumscribed ability to provide MLA and extradition cooperation, and this is being addressed. Denmark is an active and cooperative international criminal justice partner.

KEY RECOMMENDATIONS TO IMPROVE THE AML/CFT SYSTEM

FATF 40+9 Recommendations	Recommended Action
Legal System and Related Institutional Measures	
Criminalization of Money Laundering (R.1, 2 & 32)	Use the criminal ML provision more effectively by developing and prosecuting a larger number of cases involving serious ML, that is under Section 290(2) of the Penal Code involving aggravated conduct. Seek to increase the penalties actually imposed for violations of the ML provision, and increase the maximum penalty available for the negligent ML offence. Make the provisions that criminalize ML in the Faroe Islands and Greenland fully consistent with the requirements of the Vienna and Palermo Conventions. Consider the extent to which Denmark may be able to criminalize self-laundering.
Criminalization of Terrorist Financing (SR.II & R.32)	Have the Faroe Islands and Greenland enact, as Denmark already has, specific provisions that criminalize the financing of terrorist acts, terrorists and terrorist organizations in a manner consistent with the Terrorist Financing Convention.
Confiscation, freezing and seizing of proceeds of crime (R.3 & 32)	Evaluate regularly the use of the comprehensive tracing, seizure and confiscation provisions in Denmark to determine whether the provisions are being used effectively to recover proceeds. For the Faroe Islands and Greenland, continue the work on updating the legal and practical requisites to enable tracing, seizing and confiscating proceeds in all cases.
Freezing of funds used for terrorist financing (SR.III & R.32)	Be prepared to use national mechanisms to freeze funds held by, or collected or provided for, terrorists or terrorist organizations for their non-terrorism related activities. Provide additional written guidance to the financial sector, DNFBPs, and others about the practical aspects of obligations under the freezing regime and procedures for access to funds. Adopt legal provisions and implementation measures in the Faroe Islands and Greenland to facilitate compliance with the UN Resolutions. Undertake additional efforts to ensure that all appropriate institutions and persons receive notice regarding lists that countries forward, and ensure institutions making inquiries about possible name matches receive prompt feedback.
The Financial Intelligence Unit and its functions (R.26, 30 & 32)	Enhance the analysis of STRs with the view to improving the quality of the information that is disseminated for investigation. Ensure the FIU is able in all instances to obtain additional information without using a court order. Adopt written requirements regarding the manner of reporting, as well as reporting forms or procedures that should be followed when reporting. Considering the likely increase in numbers of STRs and the desirability of more extensive analysis of STRs, increase the staff of the FIU and provide more specialized training.
Law enforcement, prosecution and other competent authorities (R.27, 28, 30 & 32)	Use the Money Laundering Steering Committee or another like mechanism to regularly evaluate the effectiveness of the AML/CFT program. Improve statistics gathering and analysis of such statistics. Provide more particularized training that covers ML and FT typologies, and ML and FT issues as they arise in the Danish context, and more intensive training on techniques in tracing, seizing and confiscating property.
Cross-border declaration &	Increase compliance with the system including through use of sanctions and fines for non-compliance.

disclosure	Provide practical guidelines for customs officers to guide them in implementing the system. Maintain declaration records so that information is organized and readily usable, especially to track patterns of cross-border cash movement.
Preventive Measures–Financial Institutions	
Customer due diligence, including enhanced or reduced measures (R.5– 8)	Extend the applicability of the new MLA to the Faroe Islands and Greenland. Align identification requirements to take also into account the circumstances set forth by SRVII in the case of wire transfers. Undertake an assessment of whether individual countries of the EU, or those with which the Community has entered into an agreement for the financial area, are in compliance with and have effectively implemented the FATF Recommendations, for purposes of exempting from proof of identity customers that are FIs located in these countries. Adopt a general clear requirement for a FI to determine whether the customer is acting on behalf of another person and an obligation to take reasonable steps to obtain sufficient identification data to verify the identity of that other person. Limit to pooled accounts only the exemption from the CDD requirement where a beneficial owner has funds in an account maintained by a lawyer for a client. Have the MLA empower supervisory authorities to issue regulations in the area of PEPs. Adopt provisions to require FIs to document the respective responsibilities of the correspondent and respondent institutions and determine if the respondent bank has been the subject of a ML or FT investigation. Issue guidance/regulation relating to the types of documents which are to be verified during the identification process.
Third parties and introduced business (R.9)	Place the obligation to immediately obtain the necessary information on the FI that is relying on the third party. Restrict a FI’s privilege of relying on CDD carried out by third parties either by limiting such reliance to those located in jurisdictions where the authorities have themselves ascertained that the supervisory framework and CDD measures are FATF-compliant, or by requiring FIs to satisfy themselves on that score (whether or not the jurisdictions are within the EU or in a country with whom the Community has concluded a financial area agreement).
Record keeping and wire transfer rules (R.10 & SR.VII)	Align the requirements for wire transfers with the international standard by extending them to incoming payments, to situations where there is no personal contact and to situations where the sender has an account with an intermediary.
Monitoring of transactions and relationships (R.11 & 21)	Consider having supervisory authorities provide guidance as to how to implement the provision to monitor customers’ activities. Introduce a broader requirement to pay special attention to business relationships and transactions with persons from countries which do not or insufficiently apply the FATF recommendations.
Suspicious transaction reports and other reporting (R.13, 14, 19, 25 & SR.IV)	Assess effectiveness of the reporting regime to check for potential under-reporting. Address the misalignment between the criminalization standard and the reporting requirement., either through legislative changes or enhanced supervision to guard against potential under-reporting. Adopt measures that bring the reporting regime in the Faroe Islands and Greenland up to international standards, especially in the area of terrorist financing. Enhance outreach to insurers and investment agents.
Cross Border	Increase compliance with the system, including through use of sanctions and fines

Declaration or disclosure (SR IX)	for non-compliance. Provide practical guidelines for customs officers to guide them in implementing the system. Maintain declaration records so that information is organized and readily usable, especially to track patterns of cross-border cash movement.
Internal controls, compliance, audit and foreign branches (R.15 & 22)	Provide guidance to FIs to ensure that the compliance officer or other appropriate staff has access to customer records and relevant information. Step up the scope and intensity of initial and ongoing employee training programs. Introduce requirements to ensure that reporting entities have adequate screening procedures for hiring employees.
The supervisory and oversight system–competent authorities and SROs Role, functions, duties and powers (including sanctions) (R.23, 30, 29, 17, 25 & 32)	Enhance scope and frequency of FSA inspections for AML/CFT and scope of DCCA inspections. Introduce fit-and-proper criteria for the registration of newly covered businesses. Introduce detailed regulations and formal guidelines to elaborate and clarify best practice for complying with the MLA. Review the adequacy of current staff resources of the FSA allocated to AML/CFT. Increase resources of the DCCA allocated to AML/CFT (notably for inspections of money remitters and currency exchangers). Expand considerably training of FSA and DCCA staff on AML/CFT matters. Review the effectiveness of the powers of supervisory authorities to sanction for non-compliance.
Money value transfer services (SR.VI)	Reconsider applying the fit-and-proper test requirements also to undertakings that were carrying out the MVT activities before the entry into force of the new MLA. Review the DCCA's inspection policies and procedures, and practice and improve their scope.
Preventive Measures–Nonfinancial Businesses and Professions	
Customer due diligence and record-keeping (R.12)	Strengthen procedures for ascertaining beneficial owner information, especially where lawyers are holding client's funds in their own accounts. Establish clearer guidelines on appropriate identity verification procedures and documents (especially for legal persons). Extend the AML/CFT regime to DNFBPs in the Faroe Islands and Greenland. Enhance casino provisions and procedures to identify customers making transactions above the FATF-established threshold and comply with FATF record-keeping requirements.
Suspicious transaction reporting (R.16)	Enhance the effectiveness of the reporting requirement for DNFBPs, including improving outreach to the sectors and ensuring that internal procedures, training, and compliance arrangements are sufficient to ensure adequate and accurate reporting. Introduce CFT reporting in casinos and consider streamlining the reporting process.
Regulation, supervision, monitoring, and sanctions (R.24 & 25)	Ensure that casino inspectors monitor compliance with AML/CFT preventative measures. Enhance the Bar and Law Society's active supervision of its members' compliance with AML/CFT preventive measures. Move more decisively to implement DCCA supervision of other DNFBPs including increasing resources where necessary. Enhance outreach, training, and guidelines on AML/CFT issues and obligations for DNFBP practitioners.

Legal Persons and Arrangements & Nonprofit Organizations	
Legal Persons–Access to beneficial ownership and control information (R.33)	Improve the accuracy and timeliness of the information on beneficial ownership of legal persons, especially foreign legal ones. Evaluate the ML/TF risks associated with the use of bearer shares and take appropriate action.
Legal Arrangements–Access to beneficial ownership and control information (R.34)	Undertake measures to ensure transparency of foreign trusts and to secure access to adequate, accurate and timely information on beneficial ownership.
Nonprofit organizations (SR.VIII)	Undertake a formal review, involving all relevant agencies, of the adequacy of their legal, regulatory, registration, and taxation systems to meet the new international standard as elaborated in recent FATF Interpretive Note on SR VIII. Increase outreach to the NPO sector to raise awareness of the dangers and indicators of terrorist financing through the NPO sector and to develop and refine best practices to address FT vulnerabilities.
National and International Cooperation	
National cooperation and coordination (R.31 & 32)	Establish a platform for regular inter-agency policy level review of the effectiveness of current AML/CFT criminal justice and preventive measure initiatives and for recommending changes and new approaches. Have more regular exchange between the FIU and FSA/DCCA of pertinent information to support each other's efforts.
The Conventions and UN Special Resolutions (R.35 & SR.I)	Adopt mechanisms to freeze all assets of terrorists and terrorist organizations not only those that may be used for terrorist purposes. Extend international conventions to the Faroe Islands and Greenland and put in place legal framework and implementation for all applicable convention obligations.
Mutual Legal Assistance (R.36, 37, 38, SR.V & 32)	Broaden the scope of the ML and FT criminal provisions in the Faroe Islands and Greenland to ensure effective provision of legal assistance and update tracing, seizure and confiscation provisions so a full measure of assistance can be provided. Collect and evaluate statistics relating to mutual legal assistance.
Extradition (R. 39, 37, SR.V & R.32)	In the case of the Faroe Islands and Greenland, ensure there are treaties, conventions and domestic laws and procedures in place that permit extradition for ML and FT offenses in the case of countries outside of Europe. Collect and evaluate appropriate statistics relating to extradition requests.
Other Forms of Cooperation (R. 40, SR.V & R.32)	Maintain more comprehensive statistics on law enforcement, FIU and supervisory international cooperation.

Authorities' response: The authorities are in broad agreement with the assessment.

Stress Tests—Market Risk

Market risk stress tests were based on single factor shocks and focused on: (i) interest rate risk; (ii) equity and real estate price risk; and (iii) foreign exchange risk. Banks included derivatives exposures in assessing market risk and used assumptions about shocks to implied volatilities. The size of the shocks was determined based on draw from historical information, taking into account episodes of financial distress. The single factor shocks were specified as follows:

Shock 1: Parallel shifts in the yield curve: +250 and -100 basis points.

Shock 2: Equity prices: -30 percent.

Shock 3: Foreign exchange DKr/Non-Euro currencies: appreciation/depreciation 40 percent.

Shock 4: Real estate prices: -30 percent.

Capital Adequacy Ratio Resulting from Selected Market Shocks
Largest Banks (Group I) Reported by the DFSA (percent)

	2005*	Yield curve UP 250 basis points	Yield curve down 100 basis points	Property prices down 30 per cent	Equity prices down 30 per cent	Appreciation 40 per cent	Depreciation 40 percent
CAR	10.2	9.5	9.9	9.9	9.7	10.2	10.2

Banks forecasted their profits based on the baseline macroeconomic scenario. Banks maintain positive profitability even as macroeconomic conditions deteriorate drastically. Based on publicly available information, staff used a simplified approach to check for the consistency of the results presented by the banks. The table below shows the results obtained by staff which are consistent with those presented by the banks. The minor differences suggest that market risk varies somewhat among institutions. On average, market risk seems relatively modest. This reflects the fact that most of the loans in banks' portfolios have flexible interest rates, therefore, the effects of the single factor shocks are transmitted to the borrowers. Holdings of financial instruments are also dynamically hedged, thereby limiting banks' exposure to market risk.

Capital Adequacy Ratio Adjusted for Selected Market Risk Shocks for the Largest Banks (Group I) estimated by the mission

	Yield Curve up 250 bp	Equity prices down 30 percent	Fx Movement 40 percent
	Mean	Mean	Mean
Group 1	9.9	9.3	10.1