

**FOR
AGENDA**

SM/06/59
Correction 1

February 28, 2006

To: Members of the Executive Board
From: The Secretary
Subject: **United Kingdom—Selected Issues**

The attached editorial corrections to SM/06/59 (2/17/06) have been provided by the staff:

Page 48, para. 1, line 1: for “introduced in 1998” read “introduced in 1997”
chart, title: for “Fiscal Deficit and Net Public Debt”
read “Fiscal Balance and Net Public Debt”

Page 82, para. 9, line 4: for “A 2005 survey” read “A 2004 survey”

Page 84, Box 1, first full para., lines 1 and 2: for “grown exponentially (see figure), and is displacing the regular CDO instruments.”
read “grown exponentially, and is displacing cash CDOs.”

Page 86, para. 10, lines 3 and 4: for “According to British Bankers Association (BBA), synthetic CDOs currently make”
read “According to the BBA (2004), synthetic CDOs make”

Page 89, Section D, title: for “Exposure of U.K. Financial Institution to Credit Derivatives Products”
read “Exposure of U.K. Financial Institution to Credit Derivatives Market”

Page 99, Appendix II, title: for “Estimating the Exposure of U.K. Financial Institutions to the CRT Market”
read “Estimating the Exposure of U.K. Financial Institutions to the Credit Derivatives Market”

Page 114, Figure 9: replaced.

Questions may be referred to Mr. Hunt, EUR (ext. 36361).

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Att: (7)

Other Distribution:
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- HM Treasury (2003), "Housing, Consumption, and the EMU," EMU Study.
- Gali, J. "Finite Horizons, Life-Cycle Savings, and Time-Series Evidence on Consumption," *Journal of Monetary Economics* 26 (1990), 433-452.
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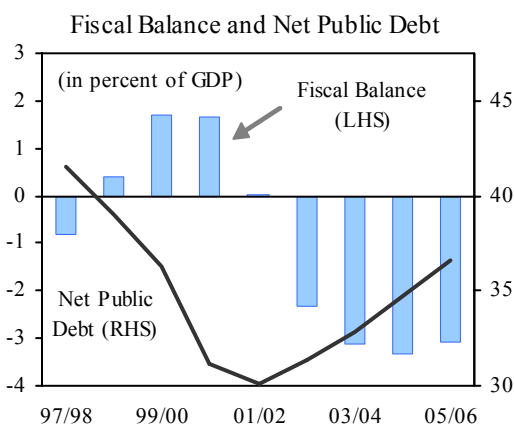
III. OPTIONS FOR FISCAL CONSOLIDATION IN THE UNITED KINGDOM²⁵

This paper examines the impact on GDP of differences in the timing and composition of fiscal consolidation, using the IMF's Global Fiscal Model calibrated to match the UK economy. Early consolidation dampens aggregate demand in the short term, but increases output in the long term as the size of adjustment is reduced by lower interest payments. Early consolidation becomes even more favorable if global interest rates rise. Reducing transfers or government spending is better than tax increases because of the adverse effects of higher taxes on labor supply and capital accumulation.

A. Introduction

1. **Fiscal rules introduced in 1997—a Golden rule and a Sustainable Investment rule—are a central part of the U.K. fiscal policy framework to ensure sound public finances over the medium-term.** The Golden rule requires that the public sector's current balance be non-negative on average over the economic cycle and the Sustainable Investment rule requires net public sector debt to be kept at a stable and prudent level (which the Treasury regards as below 40 percent of GDP). These fiscal rules, aimed at assuring fiscal solvency and avoiding procyclical fiscal stimulus while providing scope for automatic stabilizers to operate fully, have contributed to enhancing the credibility of the fiscal framework by anchoring expectations and improving transparency.

2. **However, the fiscal deficit has remained large during the recent period of strong economic growth and now poses an increasing challenge to the fiscal rules.** The past five years have seen a sizable deterioration in the fiscal position owing to a rise in current spending that outstripped the improvement in revenue. With the overall deficit stuck at about 3 percent of GDP in recent years, net public debt has edged up to about 35 percent of GDP in FY2004/05 from a low of 30 percent of GDP in FY2001/02.²⁶ While the level of public debt remains relatively low, going forward, a reduction in the overall deficit will be needed to continue to meet the fiscal rules. Against this backdrop, the paper aims at exploring the macroeconomic consequences of the timing and composition of fiscal consolidation.



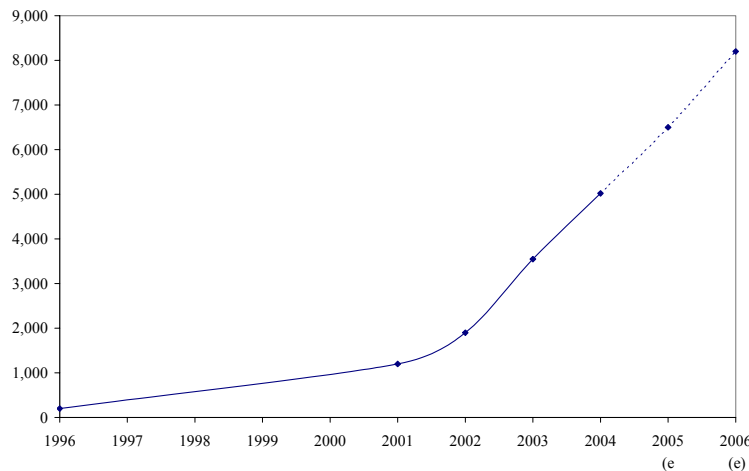
²⁵ Prepared by Dennis Botman (FAD) and Keiko Honjo.

²⁶ The fiscal year runs from April to March.

B. Credit Risk Transfer Instruments—Structured Credit Products and Credit Derivatives

6. **The exponential growth of the global credit derivatives market—since the instrument was first traded in 1996—has played a key role in the development of the CRT market.** A credit derivative is a contract (derivative security) that is used to transfer the risk that the total return on a credit asset would fall below an agreed level to another party. This is usually achieved by transferring the risk on a credit reference asset. It does not require the transfer of the underlying asset, although the cash flow of the credit derivative instrument is determined by the credit quality of the underlying asset.⁴² According to the British Bankers' Association, the value of credit derivatives products, which exceeded even the total volume of outstanding U.S. Treasury bonds at the end of 2004, is projected to surpass \$8 trillion by 2006 (see Figure 1).

Figure 1. Growth of the Global Credit Derivatives Market
(In billions of U.S. dollars)



7. **Among the most popular structured credit products are collateralized debt obligations (CDOs).**⁴³ CDOs are constructed by “pooling” the credit risk of different financial instruments, and dividing the pooled credit risk into tranches with different risk and

⁴² Examples of credit derivatives include credit default swaps (CDSs), credit-linked notes (CLNs), credit spread options (CSOs) and total return swaps (TRSs).

⁴³ Rule, Garratt and Rummel (2004) define a structured credit product as “a bond combined with one or more options or forwards linked to market prices or indices” which can “take a variety of contractual forms depending largely on the nature of the target investors.”

return characteristics (Box 1).⁴⁴ CDOs generally combine three mechanisms common to all securitization structures (Cousseran and Rahmouni, 2005):

- (i) the construction of a reference portfolio comprising a pool of bank loans and/or negotiable financial instruments and/or credit derivatives;
- (ii) the de-linking of the credit risk of the portfolio from that of the originator of the portfolio via the use of a Special Purpose Vehicle (SPV) that issues the CDO and holds the underlying assets; and
- (iii) the tranching of CDOs backed by this portfolio, with specific seniority rank in terms of rights to cash flows generated by the underlying assets.

8. **Motivations to issue CDOs are varied.** They include arbitrage opportunities (from attractive excess spreads coupled with low default rates); balance sheet management (reduced cost of funding and meeting regulatory capital requirements); providing fund managers with the opportunity to earn a stable fee income and to increase their assets under management; providing investment banks the opportunity to earn underwriting fees and cross-sell collateral into CDOs (Memani, 2005). In other words, legal, regulatory and economic incentives have typically been the key drivers of growth in the CDO market. In addition, the underlying bond and loan secondary markets are relatively illiquid. Thus, CDOs help to improve liquidity raising the total valuation to the issuer of the CDO structure (Duffie and Garleanu, 2001).

9. **Participants in the CRT market have also become increasingly diverse.** According to the Fitch (2005), the main participants in the CDO market are lending institutions, who are usually net buyers of protection or net sellers of CDOs and insurance companies, who are net sellers of protection and net buyers of CDOs. A 2004 survey by the British Bankers' Association (BBA) suggests that while banks, securities houses and insurance companies still constitute the majority of market participants, hedge funds have emerged as key players, both as protection buyers and sellers (see Figure 2). According to data from Credit Suisse First Boston (CSFB), the investor base (sellers of protection) has broadened more recently, to include hedge funds, proprietary traders and the more traditional asset management industry, who participate in both the protection buyers' and sellers' markets (see Figure 3). Even some pension funds, which had followed conservative investment strategies, are said to have started taking on the role of protection sellers.

⁴⁴ A tranche is defined as a certain loss range.

Box 1. How Collateralized Debt Obligations (CDOs) Work

In a CDO transaction, investors have the choice of purchasing different tranches of the instrument, commensurate with their risk-return preferences. An investor could purchase the riskiest tranche, which offers the highest return by far, but which also bears the initial losses that the pool suffers from any default among all its bonds. In other words, the risk-taking investor is taking a bet that any such loss would not occur, in return for the opportunity to earn double-digit returns. Alternatively, the investor could purchase a more conservative tranche, which pays a lower return, but is insulated from initial defaults in the bond pool. The super-senior, senior, mezzanine and equity tranches bear increasing risks of defaults. Specifically, holders of mezzanine, senior and super-senior tranches of a CDO have some protection from the risk of loss from their respective more junior tranches.¹

In order to estimate the rates of return at which to offer each tranche of the instrument, the originator (usually an investment bank) first has to estimate distribution of losses in the pool. The distribution of losses depends largely on the correlation of default among the names referenced in the CDO. In general, the lower the default correlation, the higher the compensation paid to the equity tranche investor and vice-versa. This is because lower default correlations suggest that the probability of observing a limited number of defaults is higher. The limited number of defaults is sufficient to wipe out the equity tranche investor's capital. The opposite is true for the senior tranche investor—higher default correlations imply that the senior tranche is more likely to suffer losses, and thus the senior tranche investor would expect to be paid a higher compensation.² The dependence of the compensation paid to mezzanine tranches investors on correlation lies between the equity and senior tranche extremes (Gibson, 2003).

The synthetic CDO is one of the most popular products derived from the regular CDO instruments.³ This instrument has the potential to intensify both the risks and returns of the regular CDO, by replacing the pool of bonds with credit derivatives, specifically, credit default swaps (CDS). The synthetic CDO is classified as a credit derivative. In a synthetic CDO transaction, the credit risk on the reference portfolio is transferred using CDS instruments:

- (i) the special purpose vehicle (SPV) sells protection to the originator of the deal in return for agreed fees;

¹ These tranches may also be protected by credit enhancements such as the overcollateralization of assets, reserve accounts or trapping excess spread, which would allow them to achieve a higher credit rating than the average rating of the underlying portfolio.

² From the equity tranche investor's perspective, the higher chance of a large number of defaults (fatter tails in the distribution of the number of defaults) due to high correlation is inconsequential since the investor's position is no longer affected beyond the first losses.

³ Cousseran and Rahmouni (2005) provide details on the types of CDOs available in the market, including the criteria for issuing these instruments, the nature of credit risk transfers being effected and the CDO instruments available.

⁴ A credit default swap is essentially an insurance policy, which insures against a bond default. Holders of bonds could purchase credit default swaps on their bonds as protection—if the bond defaults, the seller of the CDS (seller of protection) acts as an insurer and pays the buyer. In return, the seller of the CDS receives an immediate payment up front without investing any funds, just in return for pledging to pay if a default occurs. The price of protection naturally increases with the perceived likely of default. Investors who do not own bonds may also purchase credit default swaps, in order to benefit from any rise in value.

Box 1. How Collateralized Debt Obligations (CDOs) Work (Continued)

- (ii) the risk is then transferred from the SPV to investors through the issuance of tranches of fully-funded synthetic CDOs, credit default swaps (which are unfunded), or a combination of both (that is, partially funded CDOs).⁵

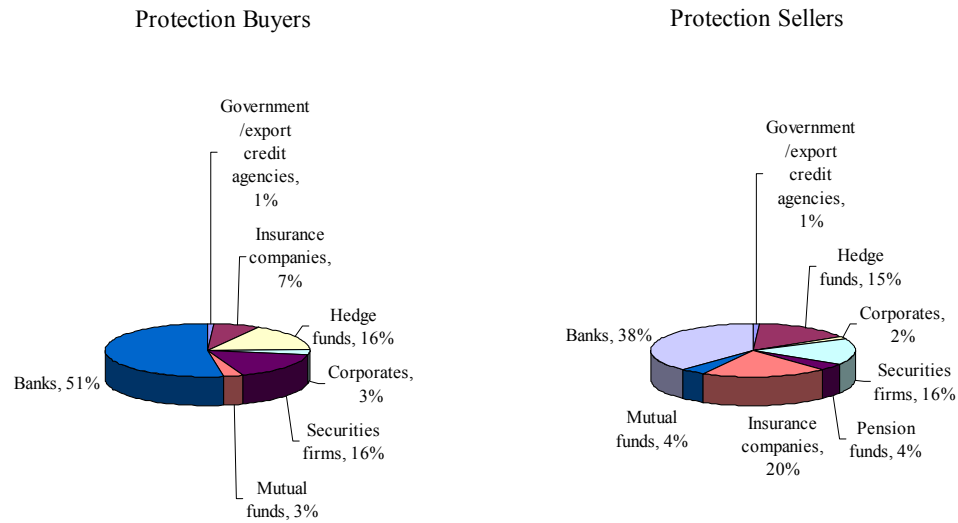
The demand for synthetic CDOs has grown exponentially, and is displacing cash CDOs. The introduction of single-tranche CDOs (also known as “bespoke tranches”) has been an important innovation in synthetic CDO structures. This instrument was created in 2003 as a more flexible alternative to traditional CDOs. With single-tranche CDOs, only one tranche of the structure—usually a mezzanine tranche—is sold to the investor, while the arranger becomes the direct counterparty of the investor since there is no SPV in the structure. This specialized structure allows the seller to meet specific needs of the investor, and in a more timely and cost effective manner compared to traditional CDOs, which require that all the different classes of tranches (equity, mezzanine, senior)—usually to different investors—be sold to do the deal.⁶

Since synthetic CDOs could be created without holding any actual bonds as an underlying asset, the supply of these instruments appears limitless. However, this causes problems in the event of a default if contracts specify physical settlement since there may not be enough bonds available for settlement. Markets have started to address this situation. For instance, in the default incidents involving Collins & Aikman, and Delphi, auction mechanisms were introduced to cash settle index trades.

⁵ Synthetic CDO tranches could be either “funded” or “unfunded”. If a tranche is funded, the CDO investor pays the notional amount of the tranche at the beginning of the transaction—the funds are put into a collateral account and invested in low-risk securities—and any default would result in a write-down of the principal. In return, the investor receives LIBOR plus a spread which reflects the riskiness of the investment. If a tranche is unfunded, no money changes hands at the initiation of the transaction. Rather, the investor (protection seller) receives a spread and pays out in the event that a default in the reference portfolio affects the investor’s particular tranche. Since unfunded tranches depend on the investor’s future ability and willingness to pay, they create counterparty credit risk for the protection buyer. A credit default swap is an unfunded credit derivative.

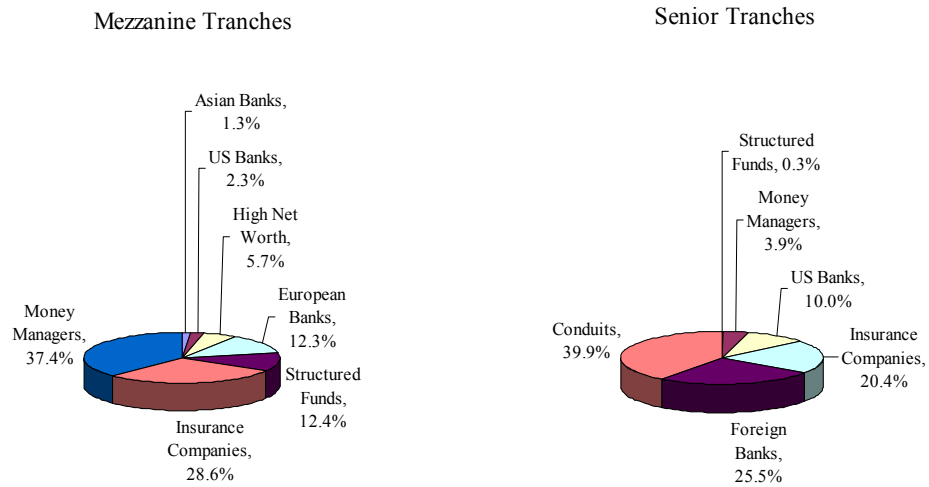
⁶ See Cousseran and Rahmouni (2005) for a detailed description of the structure of a single-tranche CDO, and the risks attached to this instrument.

Figure 2. CDOs: Protection Buyers and Sellers



Source: British Bankers' Association.

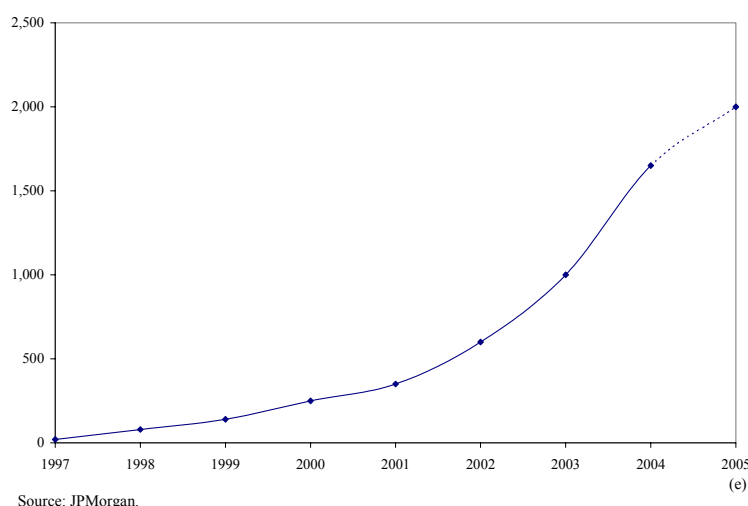
Figure 3. Composition of Protection Sellers (Buyers of CDOs)



Source: CSFB.

10. **The growth of credit derivatives has provided the impetus for the sharp growth in synthetic CDOs** since the latter are easier to assemble and disperse than their cash counterparts (Figure 4).⁴⁵ According to the BBA (2004), synthetic CDOs make up about 16 percent of the credit derivatives market, behind CDSs, which have a 51 percent market share. Indeed, synthetic CDOs, which insured less than \$400 billion of the face amount of U.S. corporate bonds in 2001, are estimated to cover some \$2 trillion by the end of 2005, according to JPMorgan. As a benchmark comparison, this would represent about 40 percent of the entire U.S. corporate bond market of almost \$5 trillion.⁴⁶ The demand for these instruments has been particularly strong in Europe, driven by the existing legal and taxation barriers to securitization transactions involving the true sale of underlying assets, and the limited interest in these transactions for refinancing purposes (Cousseran and Rahmouni, 2005). Further, the outstanding volume of corporate bonds in Europe is much smaller than in the US, making it more difficult to source assets for cash CDOs.

Figure 4. Growth of the Global Synthetic CDOs Market
(In billions of U.S. dollars)



⁴⁵ See Box 1.

⁴⁶ CDOs issued in Europe targeted at European investors may also include U.S. underlying assets.

D. Exposure of U.K. Financial Institutions to Credit Derivatives Market

16. **A *direct* assessment of the exposures of financial institutions in the United Kingdom to credit derivatives—and their implications for financial stability—is not possible, given the lack of available information in this area.** To overcome this limitation, we estimate the exposure of a firm to the credit derivatives market by examining the extent to which developments in the credit derivatives market explain the variability of the firm's equity returns in the longer-run. The assumption that such a relationship exists is reasonable, given that gains/losses on holdings of CRT instruments are eventually manifest in a company's financial data.⁵³ We assess this exposure indirectly by using the vector autoregression (VAR) approach first suggested by Hasbrouck (1991a, b). In this case, we estimate the model using daily data for the period August 28, 2003 – September 15, 2005 (see Appendix II).

17. **The major financial services groups analyzed here represent either the largest life insurers or major banking groups,** which list their shares locally in the United Kingdom: Aviva, Barclays, Halifax Bank of Scotland (HBOS), Hongkong and Shanghai Banking Corporation (HSBC), Lloyds, Legal and General, Royal and Sun Alliance and Royal Bank of Scotland (RBS).

18. **Our empirical results suggest that U.K. insurance companies tend to be more conservative in their investment strategies.** Table 1 shows the longer-term impact of volatility in the credit derivatives market on the stock price returns of our sample companies.⁵⁴ The major insurance companies tend to be more exposed to volatility in the more senior mezzanine tranches, with attachment points of 9–12 percent and 12–22 percent.⁵⁵ In contrast, the bancassurance businesses tend to be more exposed to the junior

⁵³ See, for instance, Tett (2005).

⁵⁴ In this model, the shocks are not orthogonalized. This means that the variance decomposition ranks the importance of every shock, but does not represent the actual percentage that each shock contributes to a particular share price, since the shocks may be correlated. In other words, the sum of the individual variances would not be equal to the total variance because of the covariance terms, but the rankings hold since it is equivalent to a renormalization.

⁵⁵ The risk levels of a synthetic CDO are determined by the total accumulated loss of the reference pool of assets. In a CDO, the default losses borne by a tranche range between the attachment point and detachment point. The lower bound of the range is called an attachment point and the upper bound a detachment point. For example, a 3–6 percent tranche has an attachment point of 3 percent and a detachment point of 6 percent. When the accumulated loss of the reference pool is no more than 3 percent of the total initial notional of the pool, the tranche will not be affected. However, when the loss has exceeded 3 percent, any further loss

(continued)

mezzanine tranches, with attachment points of 3–6 percent and 6–9 percent, with the exception of HBOS. The apparent conservatism of HBOS, which is substantially exposed to the senior mezzanine tranche, with attachment points 12–22 percent, could possibly be explained by the fact that it is also the biggest life insurer in the United Kingdom market, in addition to being one of the five biggest banks in the country. Barclays also appears to be most exposed to the senior mezzanine tranche.

Table 1. Impact of Volatility in Credit Derivatives Market on Major U.K. Financial Groups, 28 August 2003-15 September 2005
(In percent)

	Bank	Bancassurance				Insurance		
	Barclays	HBOS	HSBC	Lloyds	RBS	AVIVA	Legal &	RSA
Dependent variable	0.2	3.6	9.3	0.4	0.9	1.8	26.0	0.3
iTRAXX tranches								
<u>Equity tranche</u>								
0-3 percent	8.6	0.3	17.9	0.2	2.4	7.3	0.7	3.3
<u>Mezzanine tranches</u>								
3-6 percent	2.1	10.4	51.6	32.7	38.9	12.5	13.2	0.7
6-9 percent	24.1	0.4	0.9	35.3	14.9	27.4	4.7	33.9
9-12 percent	17.3	12.3	5.2	6.6	13.9	35.8	5.0	53.7
12-22 percent	47.6	72.9	15.0	24.6	28.9	15.2	50.4	8.0
10 less 2 year govt yield	0.1	0.0	0.1	0.2	0.0	0.0	0.0	0.0

Sources: Bloomberg L.L.P. and IMF staff calculations.

The empirical evidence suggests that the CRT market does not pose a substantial threat to financial sector stability in the United Kingdom, at this point. While our sample of financial institutions is admittedly rather small, thus making it difficult to generalize this finding, the results suggest that: (i) there are sufficiently diverse holdings across major institutions in the United Kingdom market, which are potentially active in the CRT market, to limit the extent of the impact if markets were to experience a negative shock; and (ii) insurance companies—at least the major ones—which are risk-buyers, appear to prefer the tranches that better insulate them from first losses.⁵⁶

will be deducted from the tranche's notional until the detachment point 6 percent is reached. At this point, the tranche is wiped out.

⁵⁶ The data are subsequently divided into two sub-periods—August 28, 2003 to September 6, 2004, September 7, 2004 to September 15, 2005—and the VAR approach is applied to each sub-sample. The results suggest that the major U.K. financial institutions have become more conservative in their involvement in credit derivatives over time. These institutions became more exposed to volatility in the more senior mezzanine tranches over the two sub-periods, with the exception of RBS. The holdings across institutions remained diverse over time.

Estimating the Exposure of U.K. Financial Institutions to the Credit Derivatives Market

The choice of factors in our model is guided by the requirement that the econometric model captures both systemic risk in the financial system and the specific risk associated with credit derivatives products. Market prices are used in our analysis, since they are readily available on a daily basis (as opposed to accounting data), and quickly transmit financial information about individual companies.⁷¹ Equity prices for the major financial groups are obtained from Bloomberg L.L.P. The slope of the yield curve, measured as the difference between the yields on the 10-year and 2-year U.K. government bonds, is included as a measure of contemporaneous economic conditions that would lead to simultaneous movements in equity returns and structured credit product prices. The yield data are obtained from the generic 2-year and 10-year yield series constructed by Bloomberg L.L.P.

While there has been a rapid proliferation of CRT products, credit derivatives are among the most widely used products. The introduction and rapid acceptance of benchmark credit derivatives indices, specifically iTRAXX in Europe, has helped develop a two-way market for standardized CDOs. Given that the tranche seniority of a CDO affects its riskiness, we include as factors the prices of the equity tranche and a number of mezzanine tranches with varying degrees of seniority.⁷² The super-senior tranche is not included in the analysis since its time-series just started in mid-2004. Price data for the different tranches are obtained from JPMorgan.

Given the vector of n endogenous variables, $Y_t = (y_{1t}, y_{2t}, \dots, y_{nt})'$, the corresponding unrestricted VAR system of order p is given by:

$$Y_t = c + \Phi_1 Y_{t-1} + \dots + \Phi_p Y_{t-p} + \varepsilon_t, \quad (1)$$

where c is a n -vector of constant terms, Φ_i ($i=1, \dots, p$) are n -by- n coefficient matrices and ε_t is a vector of uncorrelated, independent and identically distributed error terms. The error terms are also serially uncorrelated. Under certain technical conditions, described in detail in econometrics texts like Hamilton (1994), the vector autoregression system in equation (1) admits the following vector moving average representation (VMA):

⁷¹ See Monks and Stringa (2005).

⁷² The equity tranche has attachment points of 0-3 percent, and the mezzanine tranches has the following attachment points: 3-6 percent, 6-9 percent, 9-12 percent, and 12-22 percent.

$$\begin{bmatrix} y_{1t} \\ \vdots \\ y_{it} \\ \vdots \\ y_{nt} \end{bmatrix} = \begin{bmatrix} \psi_{11}(L) & \dots & \psi_{1i}(L) & \dots & \psi_{1n}(L) \\ \vdots & & \vdots & & \vdots \\ \psi_{i1}(L) & \dots & \psi_{ii}(L) & \dots & \psi_{in}(L) \\ \vdots & & \vdots & & \vdots \\ \psi_{n1}(L) & \dots & \psi_{ni}(L) & \dots & \psi_{nn}(L) \end{bmatrix} \begin{bmatrix} \varepsilon_{1t} \\ \vdots \\ \varepsilon_{it} \\ \vdots \\ \varepsilon_{nt} \end{bmatrix}, \quad (2)$$

where $\psi_{ij} = \sum_{k=1}^{\infty} \psi_{ij}^k L^k$, $i, j=1, \dots, n$ are lag operators.

The coefficient ψ_{ij}^k measures the effect k periods ahead of a unit shock or innovation to variable y_j on variable y_i . Therefore, the long-term cumulative impact of variable y_j on variable y_i can be measured by adding up the coefficients associated with the lag operator $\psi_{ij}(L)$:

$$\sum_{k=0}^{\infty} \psi_{ij}^k = \text{information content of } y_j \text{ on } y_i. \quad (3)$$

Equation (3) suggests that variance decomposition can be used to quantify the overall importance of innovations to variable y_j for explaining subsequent realizations of variable y_i vis-à-vis the other endogenous variables. Specifically, the overall importance of variable y_j is captured by the relative share of the variance of variable y_i it explains:

$$\frac{\left(\sum_{k=0}^{\infty} \psi_{ij}^k \right)^2 \sigma_{\varepsilon_j}^2}{\sum_{m=1}^n \left(\sum_{k=0}^{\infty} \psi_{im}^k \right)^2 \sigma_{\varepsilon_m}^2}, \quad (4)$$

where $\sigma_{\varepsilon_j}^2$ is the variance of the innovation to variable y_j . Note that our VAR framework does not choose a particular ordering of the variables entering equation (1), and hence it is a statistical description of the dynamic interrelations between the variables analyzed. While a structural VAR may offer some advantages for interpreting the data, it requires specifying *a priori* a causal ordering of the variables, which we do not deem appropriate for this study.

In interpreting the results, we do not make any assumption as to whether a particular institution is long or short the credit exposure. We assume that losses fall within the attachment points in case of defaults. Therefore, the higher the fraction of equity return volatility explained by a senior tranche, the lower the credit exposure of the firm and the potential impact on financial stability.

Table 1. United Kingdom: Financial Stability Indicators
(As at end of period, unless indicated)

	2000	2001	2002	2003	2004	2005 Sept
<u>External Indicators</u>						
Foreign assets of banking institutions (in billions of U.S. dollars)	2,106	2,209	2,500	3,074	3,764	4,096
Foreign liabilities of banking institutions (in billions of U.S. dollars)	2,094	2,237	2,591	3,162	3,896	4,161
<u>Credit indicators</u>						
Lending to Construction sector (as a percentage of GDP)	1.2	1.4	1.4	1.4	1.5	1.7
Lending to Real estate sector (as a percentage of GDP)	6.0	7.2	8.3	9.1	10.0	11.4
<u>Financial sector risk indicators</u>						
Total loans to assets (percent)	82.0	82.1	83.1	83.4	83.1	83.1
Total loans to deposits percent)	92.9	92.2	93.8	93.6	83.1	92.2
Foreign exchange loans (in billions of U.S. dollars)	1,699	1,789	2,059	2,599	3,165	3,413
Net foreign exchange loans (in billions of U.S. dollars) ¹	-297	-368	-640	-797	-959	-983
Share of foreign exchange loans in total lending (percent) ²	41.4	41.8	41.3	42.7	43.0	44.7
Deposits in foreign exchange (in billions of U.S. dollars)	1,995	2,157	2,700	3,396	4,125	4,396
Share of foreign deposits in total deposits (percent) ³	57.3	57.8	57.9	56.1	57.3	58.6
Share of foreign denominated liabilities in total liabilities (percent) ⁴	52.4	52.5	52.8	54.3	54.7	56.2
Share of real estate sector in private credit (percent) ⁵	46.9	47.5	48.8	49.4	48.7	48.1
Share of real estate sector in loans to non financial private corporations (percent)	27.9	32.1	35.4	39.4	43.1	39.6
* Share of non-performing loans in total loans ⁶ (percent)	2.5	2.6	2.6	2.5	1.9	<i>n.a.</i>
* Share of non-performing loans in total assets sector (percent)	1.7	1.7	1.7	1.8	1.3	<i>n.a.</i>
* Regulatory capital to risk-weighted capital (percent)	13.0	13.2	13.1	13.0	12.7	<i>n.a.</i>
* Return on equity (percent) ⁷	13.5	7.7	6.1	8.6	10.9	<i>n.a.</i>
* Return on assets (before taxes, percent)	0.9	0.5	0.4	0.6	0.7	<i>n.a.</i>

Sources: Bank of England (BoE) and Financial Services Authority (FSA).

Note: Whereas data sourced from the BoE relate to the U.K. resident banks, data from the FSA (as denoted by "*") relate to U.K.-owned banks. Compilation methods for some indicators included here differ from the proposed treatment for the FSI CCE. Throughout, "deposits" includes currency, deposits and money market instruments, and "loans" excludes investments. All BoE data sourced from BankStats publication, Tables A5.3, B2.1, B2.1.1 and C1.2.

¹ FX loans less FX deposits.

² FX loans/total loans and security.

³ Non-resident deposits/total deposits.

⁴ FX liabilities/total liabilities.

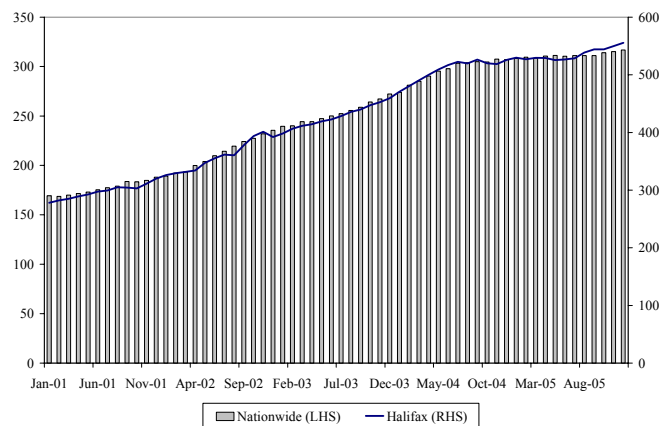
⁵ Excludes investments.

⁶ The figures for non-performing loans represent the gross value of loans against which specific provisions have been made.

⁷ Includes mortgage banks and building societies. This ratio is different from that presented in Figure 7 for the United Kingdom due to differences in definitions applied to the computations.

28. **Banks' mortgage books do not appear to be a significant direct source of vulnerability.** Although the proportion of new mortgages with higher loan-to-value (LTV) ratios have increased, the average LTV ratio remains extremely favorable, at 40–50 percent. Analysts estimate that that property prices would have to fall by 30–40 percent before stresses are manifest in the banking sector. This scenario is considered highly unlikely—the housing market has been more resilient than expected (Figure 9), while the economy, particularly the low rate of unemployment, remains supportive overall.⁸⁸ Further, the concentration is largely in fixed-rate mortgages, which should mitigate the interest burden for households, in the event of a sustained rise in interest rates.⁸⁹

Figure 9. Nominal House Price Indices



29. **The biggest vulnerability for banks lies in the “second round” effects of any sharp downturn in the property sector, given that the sector appears well-cushioned against any initial, direct impact.** In the event of a spillover into the broader economy, consumer confidence would fall and jeopardize business confidence, and credit quality would deteriorate. That said, previous interest rate rises have had the effect of dampening demand for property, thus decreasing the probability of a significant drop in prices from this point.

⁸⁸ Discussions with supervisors reveal that the unemployment rate is a closely-watched statistic, as it is considered a key flag of potential problems in the housing market and banks' credit quality.

⁸⁹ The split of fixed/floating rate loans to households was 30 percent at floating rate and 70 percent at fixed rate, for 2005, compared to 32 percent floating and 68 percent fixed for 2004.