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Going public: UK companies' use of capital markets

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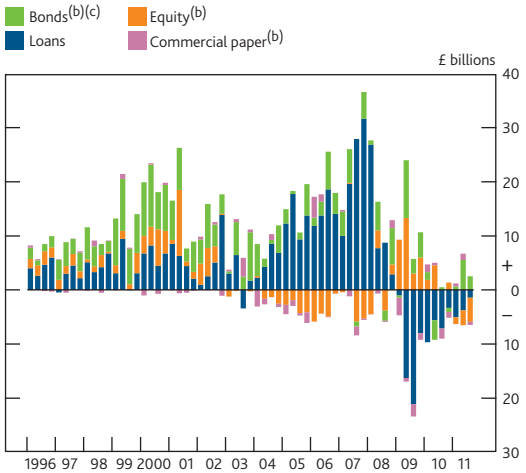
Public capital markets play an important role in financing the activities of non-financial companies in the United Kingdom, providing them with the main alternative to bank loans and private sources of finance. Although a small number of UK companies issue public bonds and equity, those that do account for a relatively large share of domestic investment and employment. Since the start of the financial crisis in 2007, bond and equity issuance has allowed some large companies to dampen the impact of the contraction in bank lending and the worsening economic outlook on investment and hiring. This suggests that there may be macroeconomic benefits to broadening access to public capital markets. The Bank has helped support primary corporate bond issuance at times of impaired secondary market functioning since 2009 through its Corporate Bond Secondary Market Scheme.

UK companies dramatically revised their spending and financing decisions during the financial crisis that started in 2007 and the ensuing recession. They reduced investment by over 20% between 2007 and 2009, and cut employment and research and development sharply. But companies also re-evaluated how much debt and equity to hold, and the composition of their external finance between bank and non-bank sources (**Chart 1**).

Chart 1 UK PNFC net external finance raised[a]



(a) Includes sterling and foreign currency issuance.
(b) Non seasonally adjusted.
(c) Includes stand alone and programme bonds.

This article focuses on the external financing decisions of UK private non-financial corporations (PNFCs) during this period. In particular, it investigates how large UK companies use public debt and equity, their main alternative to bank loans for funding long-term projects.[2] In doing so, it attempts to gauge how important public capital markets are to the UK economy, and to what extent they may have helped dampen the impact of the contraction in bank lending that accompanied the financial crisis.

The article has three sections. The first outlines the role of public external finance. The second looks at the importance of public capital markets for the UK economy, and highlights some common characteristics of UK companies that use public external finance. The third section focuses on public debt and equity issuance patterns between 2008 and 2011. And it explores whether public external finance helped UK companies maintain investment and hiring during the crisis.

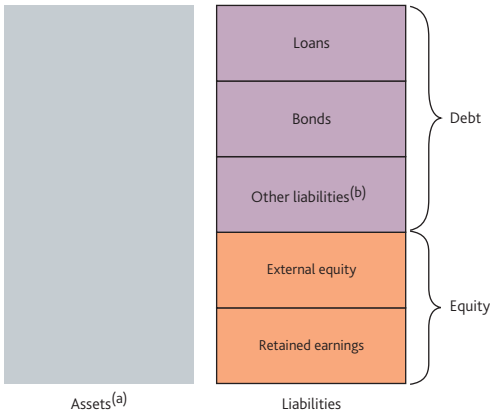
The article draws on three main sources: aggregate statistics on corporate liabilities; a company-level data set constructed at the Bank of England;[3] and information gathered from companies and capital market practitioners as part of the Bank's market intelligence activities.

(1) The authors would like to thank Jiaqian Chen, Michael Chin, Nikki Howes and Mika Inkinen for their help in producing this article.
(2) Unless otherwise specified, the word 'public' is used throughout the article to denote investors in general, rather than the public sector.
(3) The data set combines the Thomson Reuters Worldscope database with the Dealogic Debt Capital Markets and Loan Analytics databases, covering about 3,600 UK companies between 1989 and 2011. For each company this data set makes it possible to estimate the amount of loans, bond and equity issued each year, as well as observing its complete financial statement. Therefore, it allows analysis of companies' financing decisions in greater detail than financial statements alone.

Role of public external finance

UK companies seek to raise money from outside investors for two purposes. First, in order to expand their business — for example by acquiring new machinery, when they are unable or unwilling to use internal funds. Second, in order to change the structure of the liabilities they use to finance their assets (**Figure 1**) — for example by substituting debt for equity, or one form of debt or equity for another.

Figure 1 A stylised PNFC balance sheet



(a) PNFC assets typically include: property, plant and equipment; intangible assets; inventory; trading and other receivables; and cash and equivalents.
(b) Other liabilities typically include: deferred tax; short-term debt; and trade and other payables.

In exchange for external finance, companies offer investors claims on their resources such as debt contracts or equity shares. These claims allow investors to benefit from the cash flow generated by the company; and from a share of the company's assets in case of liquidation. Furthermore, they provide some degree of control over the company's management. For example, equity holders have voting rights, while debt holders may acquire the right to intervene in management if certain conditions are violated.

Companies can offer debt or equity privately to a single investor, or a small group of investors. In the United Kingdom, the most important example of such private external finance is bank lending, whereby banks provide finance to companies, typically in the form of loans. A smaller private placement market also exists, where companies sell debt or equity to small groups of buyers such as investment funds. In contrast, companies can also offer debt and equity claims to investors in general — including institutional investors (such as pension funds and insurance companies) and households — in public capital markets.(1)

This article focuses on companies' use of public external finance. In particular, it considers long-term external finance, and does not discuss short-term liabilities that companies use to finance working capital or manage liquidity, such as commercial paper. And it does not explicitly address companies' choice of leverage (the ratio of debt to equity on the balance sheet), which has been highlighted as a key influence on company performance since the seminal work by Modigliani and Miller (1958, 1963).(2)

The rest of this section describes the most common forms of public, long-term external finance used by UK PNFCs. And it outlines the key advantages and disadvantages of using public capital markets.

Types of public external finance

UK PNFCs sell both debt and equity claims to the public. **Table A** presents estimates of public debt and equity on their balance sheets in 2010. Public corporate bonds and equity each account for around 25% of total external finance.

Table A UK PNFC public debt and equity(a)(b)

	Amount outstanding (£ billions)
Memo: bank loans	**722**
Public corporate bonds	**338**
of which:	
Secured	*5*
Unsecured	*333*
and of which:	
Stand alone bonds	*316*
Programme bonds (medium-term notes)	*22*
Public equity	**346**
of which:	
Common equity	*345*
Preferred equity	*1*

Sources: Dealogic, ONS, Thomson Reuters and Bank calculations.

(a) Total corporate bonds and bank loans are from the ONS *Financial Statistics* for 2010. The amount of secured bonds was estimated by scaling the total by the share of bonds of the same type reported by Dealogic for the period 1980–2011 — and similarly for unsecured, stand alone bonds and medium-term notes (see footnote (3) below). Total public equity is estimated as the total face value of common stock and preferred stock, including capital surplus, as reported by UK PNFCs covered by the Thomson Reuters Worldscope database in fiscal year 2010.
(b) Includes foreign currency issuance.

A public corporate bond is similar to a bank loan: the issuing company promises investors regular interest payments in addition to payment of the principal at maturity. But bonds typically have a longer maturity than bank loans. Corporate bonds might be secured on physical or financial assets, though only a small fraction of UK PNFCs' bonds are secured.(3)

Common public equity gives investors a residual claim to a company's assets in the case of liquidation. Due to this claim, shareholders are considered to be the owners of the company. Holding equity also grants investors voting rights, allowing them to participate in corporate governance decisions and to

(1) The banking system retains a key role in public capital markets. Investment banks typically support companies' public issues by underwriting them, advertising and distributing them to investors. And they are often the main market makers in the secondary market, where already issued public debt and equity are traded.
(2) See the surveys in Hart (2001) and Myers (2001), as well as Tirole (2005), Chapters 13–15.
(3) Medium-term notes are another type of public debt, less common in the United Kingdom. Unlike bonds, they are offered on a recurring basis by the company, often with a menu of maturities and rates from which investors can choose.

benefit from dividend payments.[1] As of 2010, UK PNFCs had an estimated £346 billion public equity outstanding.

UK companies issue public debt and equity in a range of currencies. While public equity issues are mostly denominated in sterling, the denomination of bonds is evenly spread between sterling, US dollar and euro — with very little issuance in other currencies. Foreign currency issuance allows companies to access a wider investor base, and enables those with international operations to better match the currency exposure of their liabilities with their revenues (see O'Connor, Wackett and Zammit (2011)).

Trade-off between public and private external finance

Public claims differ from their private counterparts in an important aspect: their ownership and the associated risks tend to be diffuse, because they are offered to investors in general, and are easily transferable among them. This wide investor base might include agents who, compared with private claim owners, have less incentive to monitor the issuing company, or may be less expert in doing so.[2]

Diffuse and less-informed public investors might therefore monitor a company's state and future opportunities less intensively, and exert less influence over management's actions, than private investors.[3] Monitoring is sometimes delegated to credit rating agencies or research firms, which provide periodic assessments of companies' creditworthiness.

The process of issuing public bonds and equity tends to be costly. Given the diffuse nature of public investors, and regulatory requirements, a company bears a higher cost to disclose information in public issues than in private deals. And it must pay fees to investment banks for their support in the issuance process. Disclosure and placement costs can be substantial: total fees for the UK PNFC bond issues recorded by Dealogic on average exceed £3 million, or 1% of the amount issued.

A company's choice between private and public external finance is driven by the price that different investors offer to buy the company's claims, but also by non-price considerations. Using public capital markets presents various benefits to a company:

- **Availability of funds**. Public debt or equity issues provide access to a wide pool of investors, allowing the company to finance projects that might be too big for any single investor. For example, the median bond issue in the data set is almost twice as large as the median long-term bank loan.

- **Market-based valuation**. Already issued public claims are often actively traded between investors. A company's equity or bond price in the secondary market can be a timely measure of how investors assess the company's prospects. Such measures can be used to decide when to raise new external finance, or to link managers' compensation to an objective benchmark.

- **Management discretion**. Typically, public financing contracts constrain management less than private ones. For example, public equity claims only grant investors general voting rights, while private equity deals often include provisions to withdraw financing and demote managers if stringent conditions are not met.

On the other hand, reliance on public external finance carries costs and can expose a company to risks:

- **Cost of financial distress**. If a company is experiencing financial distress, numerous and dispersed public stakeholders might struggle to co-ordinate on a restructuring plan, and potentially lead the company to bankruptcy,[4] while it might be easier to renegotiate financing bilaterally.

- **Contagion in funding markets**. Less-informed public investors might value equity and bonds based on indirect information, such as wider market conditions, more than private investors. Therefore in periods of market stress a company might be denied financing, irrespective of its actual investment opportunities.

- **Looser management discipline**. If public investors exercise less control over a company's projects, the management might reduce effort and extract private benefits.

The ability to access both public and private external finance provides an important source of flexibility. It ensures that a company can tailor financing to its projects, for example by using flexible bank credit lines to finance working capital and trade; and longer-maturity public bonds for capital expenditures, and research and development. Furthermore, a company can respond to negative supply shocks in one financing market by switching to another. In the data set constructed at the Bank (see footnote (3) on page 319), more than 75% of companies continue to borrow from banks after their first public debt or equity issue.

(1) Companies can also issue preferred equity shares, which might guarantee the investor a fixed periodic payment, but usually carry no voting rights.
(2) For example, unlike banks, institutional investors might not have staff who regularly monitor companies' performance. Consistent with this, they typically acquire relatively small debt or equity stakes in the companies, implying that the costs associated with intensive monitoring are not justifiable.
(3) See Emerick and White (1992). Diamond (1991), Holmstrom and Tirole (1997) and Bolton and Freixas (2000) explore the effect of asymmetric information between investors on companies' financing patterns within theoretical settings.
(4) International empirical evidence in Hoshi, Kashyap and Sharfstein (1990) and Asquith, Gertner and Sharfstein (1994) suggests that distressed public debt is more likely to lead to bankruptcy than distressed on private debt.

Issuers of public external finance in the United Kingdom

Importance of public external finance for the UK economy

Only a relatively small number of UK companies use public capital markets. Fewer than 1,300 of the almost 1.2 million UK private sector enterprises are financed by public equity or bonds, with fewer companies issuing corporate bonds than issuing public equity (**Table B**).(1)

Table B Number of UK PNFCs issuing public external finance and their employment

	Number	UK employment (millions)(a)
Total UK PNFCs(b)(c)	**1.2 million**	**22.5**
Public external finance issuers	**1,257 (0.1%)**	**3.7 (16%)**
of which:		
Issuing equity and bonds	*141*	*2.2*
Issuing only equity	*1,000*	*1.0*
Issuing only bonds	*116*	*0.5*

Sources: Company accounts data, Dealogic, Department for Business, Innovation and Skills *Business Population Estimates 2010*, London Stock Exchange, Plus Markets, Thomson Reuters Datastream and Bank calculations.

(a) Private sector employment data estimated on a best-efforts basis, using 2010 annual report data where available. Where UK employment data was not directly available, it is estimated by scaling total employment by the share of companies' UK assets relative to total assets.
(b) Total number of UK enterprises in the private sector employing at least one member of staff, excluding financial and insurance companies.
(c) Total employment of UK enterprises in the private sector, excluding financial and insurance companies.

Despite their small number, companies that raise public external finance account for a large share of economic activity in the United Kingdom. Information from companies' annual reports suggests that they employ approximately 3.7 million people in the United Kingdom — around one sixth of total private sector employment. Total employment by corporate bond issuers is much larger than equity-only issuers, reflecting the larger average size of bond issuers.

The proportion of total investment accounted for by these companies is likely to be even higher, because large companies tend to be more capital-intensive than small ones. A crude estimate suggests that public equity issuers alone invested almost £30 billion in 2007, accounting for around 47% of total UK domestic investment.(2)

The importance of public external finance for the UK economy may be understated by focusing on domestic bond and equity issuers. First, many foreign-owned companies that use public external finance have a material economic presence in the United Kingdom. Second, small UK companies that transact with larger UK public bond and equity issuers may benefit from the extension of supply-chain finance from these large trading partners.

Companies in different countries rely on public external finance to different degrees. UK companies as a whole are less reliant on public bond and equity — and more on bank lending — than the US corporate sector. For example, bank loans account for more than 65% of UK corporate debt (**Table A**), compared to less than 25% in the United States. By contrast, public external finance plays a smaller role in the euro area, where bank loans account for around 75% of corporate debt.

Characteristics of public debt and equity issuers

The fact that only a small number of UK PNFCs raise funds from public capital markets suggests that the disadvantages outweigh the benefits for many. Understanding the factors affecting companies' ability and willingness to use public equity and debt is not straightforward, however. Non-public companies have less stringent reporting requirements, so that comparable data before and after a company issues public debt or equity cannot in general be observed. Although all companies in the data set constructed by the Bank have issued public equity, those that do and do not issue bonds can be compared in order to highlight their different characteristics.

The size of a company appears to be a key factor associated with use of public bonds. 90% of bond issues recorded in our database are larger than £60 million, and 90% of issuers employ more than 2,500 staff. The importance of size may suggest that the large fixed costs associated with issuing public bonds make it infeasible for companies with small borrowing requirements. Or that investors prefer large issue sizes, as these are more likely to be traded in a liquid secondary market. The Bank's market intelligence suggests that bond issues smaller than £250 million are rarely traded in the secondary market.

Furthermore, companies that issue public bonds tend to be older than companies that do not, perhaps because less-expert public investors are reassured by a longer track record (**Chart 2**). They tend to have a higher proportion of tangible assets that creditors can easily realise in case of bankruptcy. And, although they are typically as profitable as non-issuers, their return on assets is less volatile, making them easier to monitor. Companies such as energy and communications providers, with a large proportion of fixed assets (such as network infrastructure) and predictable revenues, represent a large share of the UK corporate bond market — accounting for a quarter of all corporate bond issues since 1995.

In addition to size and the other characteristics above, a company's reputation is important in facilitating access to the public bond market. As the econometric analysis in the box on page 323 shows, having a credit rating — an external assessment of the creditworthiness of the borrower —

(1) Which employ at least one member of staff.
(2) Estimated as the total capital expenditure of companies with public equity listed in the United Kingdom, scaled by the average share of domestic sales (as reported in their financial statements).

Graduating to the public bond market(1)

The UK public corporate bond market is predominantly used by very large companies. On the other hand, 5% of first-time bond issuers in the data set constructed at the Bank (see footnote (3) on page 319) were medium-sized companies with fewer than 500 employees, suggesting that, to some extent, company size is not a rigid barrier to entry into the bond market.

This box explores how various characteristics of a UK company affect its probability of becoming a public bond issuer. Some characteristics might accelerate the run-up to its first bond issue, while others might slow it. In addition to size, this experiment focuses on various characteristics. First, whether the company borrowed via a syndicated loan prior to the first bond issue (as in the US study by Hale and Santos (2008)). Second, on whether the company obtained a credit rating prior to its first issue. Syndicated loans and credit ratings could reduce the information costs borne by less-informed public investors. Proxies for the company's profitability and riskiness (return on assets, Tobin's Q and leverage), and for the ease of monitoring (the proportion of tangible and liquid assets on the balance sheet) are included as control variables.

To test how each characteristic affects the timing of a company's first bond issue, a variant of the Cox survival model is used:

$$p(t) = p(0)\exp\{X_{it}\beta\}$$

where the dependent variable $p(t)$ is the probability of a first bond issue in year t.(2) And the explanatory variables in X_{it} are the characteristics described above. $p(0)$ represents a baseline probability estimated non-parametrically from the data.

The estimated model suggests that, as expected, size is important: as a company grows by US$10 billion, the probability of a first bond issue will roughly double (**Table 1**). But bank relationships and credit ratings appear to be even more important. A syndicated loan increases the probability of a first-time bond issue by more than 20 times, and a credit rating increases it by 9 times.

To compare the relative importance of size and reputation (as represented by syndicated loans and credit ratings) curves indicating companies' estimated probability of issuing the first bond at each point in time can be plotted. For example, **Chart A** compares these curves for the average company in the sample and one ten times as large (total assets of around US$500 million and US$5 billion, respectively). **Chart B** compares curves for the average company and one of equal size, but with a credit rating. The gap between the two curves is higher in **Chart B**, indicating that a rating boosts the probability of a company issuing bonds more than an increase in size of that order.

Table 1 Probability of issuing the first corporate bond(a)

Dependent variable: probability of issuing the first bond in year *t*		
Size (total assets)	1.05 ***	1.05 ***
Tangible assets	6.3 ***	4.7 ***
Liquid assets	0.1	0.1 *
Leverage	14.4 ***	17.7 ***
Return on assets	7.1 ***	7.4 ***
Tobin's Q	1.2 **	1.2 **
Company used a syndicated loan	26.7 ***	–
Company has a credit rating	–	9.4 ***
Observations	**21,545**	**21,545**
Chi-squared	**124.03**	**89.55**

(a) The table displays the proportional change in the dependent variable following a one-unit increase in the explanatory variables. For example, if size increases by one unit, the probability of issuing the first bond increases from *P*% to (1.05 x *P*)%. *, **, *** indicate that the effect is statistically significant at the 10%, 5%, and 1% level, respectively.

Chart A Probability of issuing the first bond: effect of company size

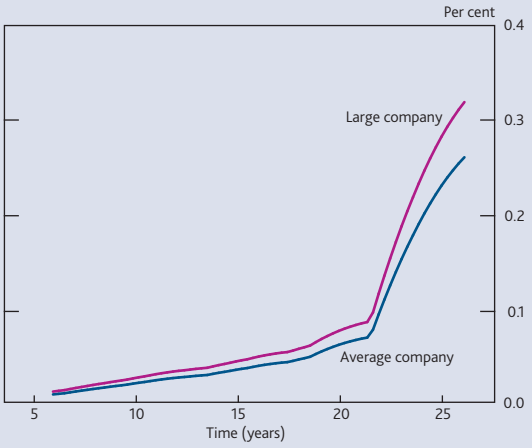
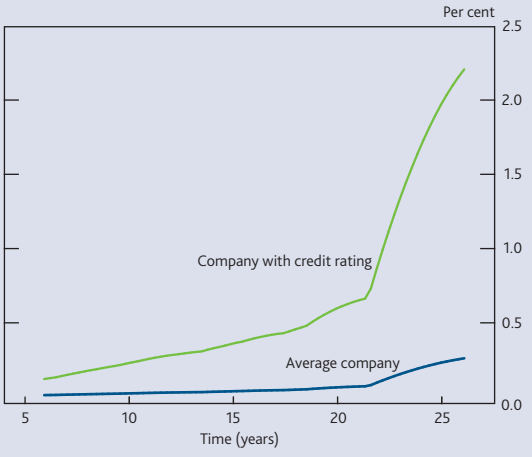
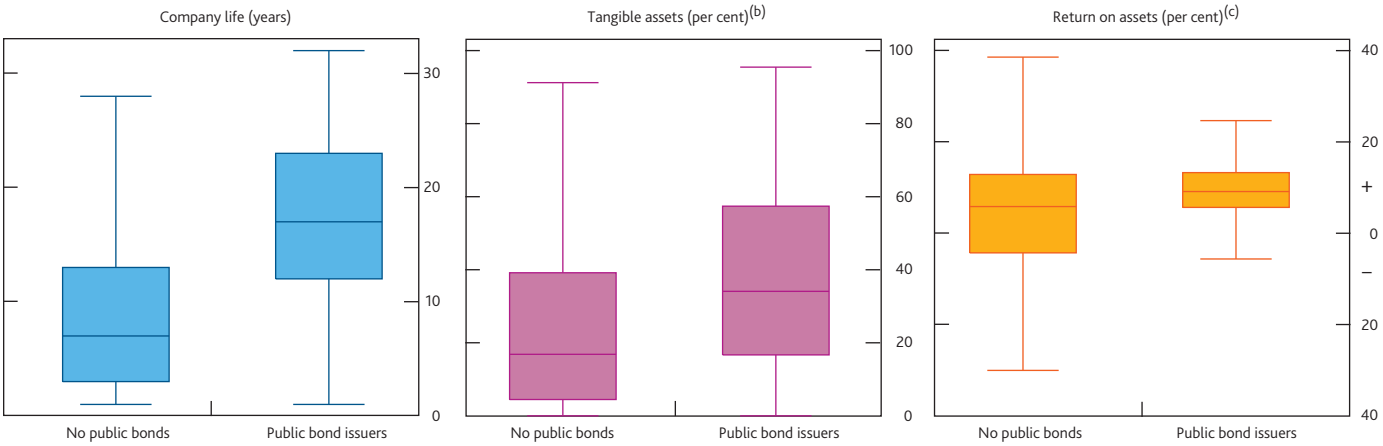


Chart B Probability of issuing the first bond: effect of credit rating



(1) This box is based on work carried out by Jiaqian Chen.
(2) In this test, time is measured as the number of years for which a company has reported financial statements included in the Thomson Reuters Worldscope database.

Chart 2 Characteristics of UK companies that do and do not issue public corporate bonds[a]



Sources: Dealogic, Thomson Reuters Datastream and Bank calculations.

(a) For each variable and each grouping, the box contains the interquartile range of the variable distribution; the horizontal line in the box denotes the median; and the vertical stalks extend between the minimum and the maximum of the same distribution.
(b) Ratio between the book value of tangible assets and total assets as reported in companies' financial statements.
(c) Ratio between operating income and previous fiscal year total assets as reported in companies' financial statements.

dramatically increases companies' likelihood of issuing their first bond. Existing banking relationships also appear to matter. UK companies that have previously issued syndicated loans appear, other things equal, more likely to issue bonds.(1) Prior relationships with investment banks may make it easier for companies to arrange a bond issue, or increase investor awareness about the company.

The results suggest that, by actively seeking to issue a syndicated loan, or to obtain a credit rating, some companies could reduce the cost of issuing public bonds. Since syndicated loans and credit ratings are accessible by companies smaller than the typical UK bond issuer (for example, the average syndicated loan issuer in the database has around one third of the assets of the average bond issuer), increased use of both could raise the number of companies able to issue bonds. Indeed, in the United States, where PNFCs appear to use syndicated loans more than in the United Kingdom,(2) use of public bonds is also more widespread, including among smaller companies.

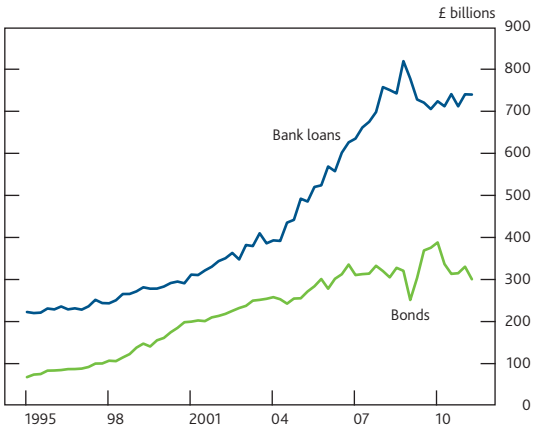
While such reputational factors might offer a 'fast track' to public capital markets for already large companies, they are unlikely to be a shortcut to public markets for most UK small and medium enterprises.

Use of public external finance between 2008 and 2011

This section focuses on how UK companies used public capital markets between 2008 and 2011, highlighting a number of conjunctural and structural factors affecting their financing decisions. The use of corporate bond and equity markets are investigated in turn, before assessing the implications of these issuance patterns for companies' spending decisions.

The financial crisis that started in 2007 was accompanied by a contraction in bank lending to UK non-financial companies. This ended a decade of rapid growth in the provision of bank credit relative to non-bank credit (**Chart 3**). The banking sector became significantly less able to extend new credit to UK companies. And, as the economic outlook deteriorated, companies reduced their demand for credit while scaling back operations and investment plans.(3)

Chart 3 UK PNFC stock of bank loans and corporate bonds



Source: Thomson Reuters Datastream.

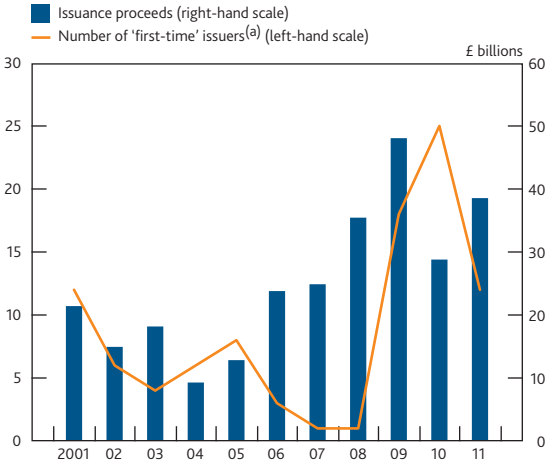
(1) In a syndicated loan, a company borrows from a group of banks, which often includes investment banks. Hale and Santos (2008) document a similar effect for companies in the United States.
(2) According to a crude estimate based on Bloomberg data and national statistics, syndicated loans account for 55% of total PNFC credit in the United States, compared with 20% in the United Kingdom.
(3) See Bell and Young (2010) for a more detailed discussion of the contraction in bank lending in the United Kingdom, and the relative importance of supply and demand factors. Ivashina and Sharfstein (2010) argue that the fall in new bank lending to US companies in 2008 was primarily a consequence of the liquidity crisis hitting the banking sector.

By contrast, corporate bond and equity issuance increased sharply, despite volatile conditions in secondary markets. The impact of secondary market conditions on primary issuance — discussed in the box on page 326 — prompted the Bank to intervene in the sterling corporate bond secondary market.

Use of corporate bonds

There was a large increase in corporate bond issuance by UK companies in 2008 and 2009. UK PNFCs issued on average £42 billion of bonds per annum in 2008 and 2009, compared with £17 billion per annum between 2002 and 2007 (**Chart 4**).

Chart 4 UK PNFC corporate bond issuance[a]



Sources: Dealogic and Bank calculations.

(a) Issuance of a bond by a unique UK PNFC parent company for the first time.

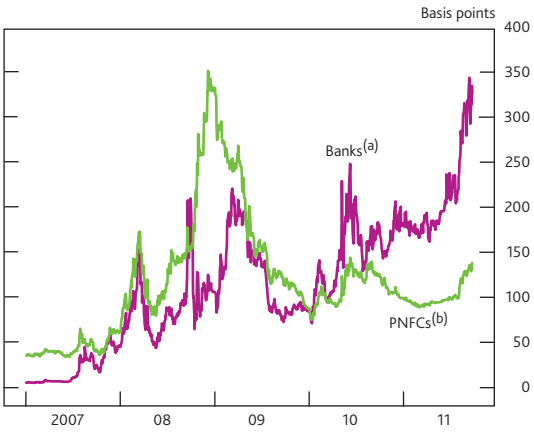
Much of this new issuance came from companies that had previously issued bonds, and was used to replace bank loans. The reduced availability of bank lending, and its increasing cost relative to reference rates such as three-month Libor, particularly for loans at longer maturities, encouraged companies to raise funds from the corporate bond market as a substitute for loans. Substitution between loans and bonds is not unique to the recent UK experience. Econometric evidence suggests that similar trends were also observed in both the United States and the United Kingdom during previous episodes of banking sector stress.(1)

While issuance in 2008 was almost entirely accounted for by companies that had previously accessed the bond market, the number of first-time bond issuers rose sharply in 2009 (**Chart 4**). These new issuers tended to be smaller and lower rated than existing bond issuers. A major use of bond finance by these new issuers was to raise funds to repay maturing bank loans. The Bank's market intelligence contacts reported that, in some cases, a bank helped arrange corporate bond issues which companies used to repay outstanding loans at the same bank.

UK PNFC bond issuance subsequently declined in 2010 as a result of three factors. First, the need to replace maturing bank debt had dissipated following UK companies' actions during 2009. Moreover, as suggested by the Bank's *Credit Conditions Survey* and the *Deloitte CFO Survey*,(2) the availability of bank loans improved for some larger companies, albeit only modestly. Finally, demand for new external finance may have remained muted for some large companies because their stock of internal funds — in the form of cash and other short-term assets — had risen over this period. The number of companies accessing bond markets for the first time remained high in 2010, however. Contacts said this reflected, at least in part, the protracted lags in the process of first-time issuance.

Bond issuance since 2010 may also have been supported by investors' perceptions that UK PNFCs had become less risky relative to UK banks. Indeed, credit default swap (CDS) premia — which indicate the cost of insuring against credit events such as default, and serve as signal of the marginal cost of funding — have been lower for a number of UK PNFCs than for major UK banks since 2010 (**Chart 5**).(3) This suggests that it may have become cheaper for some large companies to raise public external finance rather than borrow from banks.

Chart 5 Five-year CDS premia for UK banks and non-financial companies



Sources: Markit Group Limited, Thomson Reuters Datastream and Bank calculations.

(a) Median value of Barclays, HSBC, Lloyds Banking Group, Royal Bank of Scotland and Santander UK CDS premia.
(b) Sample median of 56 UK PNFCs for whom daily CDS data are available for the entire sample period.

Use of public equity

There was also a sustained increase in public equity issued by UK companies in 2008 and 2009 (**Chart 6**). This was almost entirely driven by companies that had previously raised equity, rather than first-time equity issuers.

UK PNFCs primarily issued equity in order to reduce leverage rather than finance new projects. This is consistent with chief

(1) See Becker and Ivashina (2011) and Bell and Young (2010), page 318.
(2) CFO views as reported in the *Deloitte CFO Survey*, available at www.deloitte.com/view/en_GB/uk/research-and-intelligence/deloitte-research-uk/the-deloitte-cfo-survey/index.htm.
(3) See the box entitled 'The marginal funding cost: transfer pricing' on pages 174–75 in Button, Pezzini and Rossiter (2010).

Secondary market conditions and primary issuance in 2008 and 2009

This box focuses on the impact of secondary market conditions on public bond and equity issuance by UK PNFCs in 2008 and 2009.

Corporate bond markets

At the height of the crisis in late 2008, the issuance of bonds by UK companies was hindered by the impaired functioning of the secondary market. Many banks were less willing to act as secondary market makers due to the heightened costs of funding their inventories of corporate bonds. As investors demanded additional compensation for the illiquidity of corporate bonds, the costs of issuing new debt for companies rose.

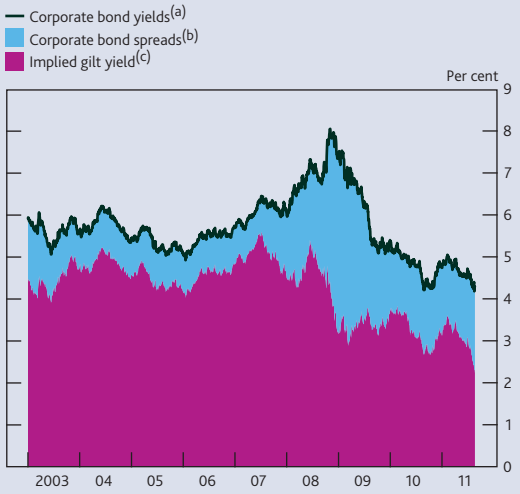
The Bank's Corporate Bond Secondary Market Scheme — part of the Asset Purchase Facility — sought to mitigate this problem. By offering to make regular small purchases — and subsequently sales — of a wide range of high-quality sterling-denominated corporate bonds, the Scheme aimed to facilitate secondary market activity. In doing so, it helped remove one of the obstacles that limited companies' access to capital markets.(1)

The sharp falls in corporate bond yields during 2009 provided an additional incentive for companies to issue bonds. The decline was driven by both a decline in the spread between corporate bond yields and gilts, which had previously risen sharply at the peak of the financial crisis, and a fall in gilt yields (**Chart A**). The decline in gilt yields reflected the fall in both the actual and expected future level of Bank Rate, as well as reductions in risk premia. In March 2009, the Monetary Policy Committee initiated its programme of asset purchases (so-called 'quantitative easing'), which is estimated to have been a significant factor in lowering gilt yields, and may in turn have increased corporate bond issuance.(2)

Equity markets

Elevated price volatility in the secondary equity market increased the cost of issuing new equity for UK companies in early 2009. One measure of the cost of new equity capital, which would not be reflected in the existing price of a company's share price, is the discount companies concede on new shares in order to ensure successful issuance. These discounts rose sharply during 2009 (**Chart B**) for two reasons. First, elevated expected equity price volatility meant that larger discounts were required to insure against falls in a company's share price that could jeopardise its capital issuance. And second, banks were less willing to underwrite equity issuance, and so required companies to significantly discount their issuance to ensure they were successful.

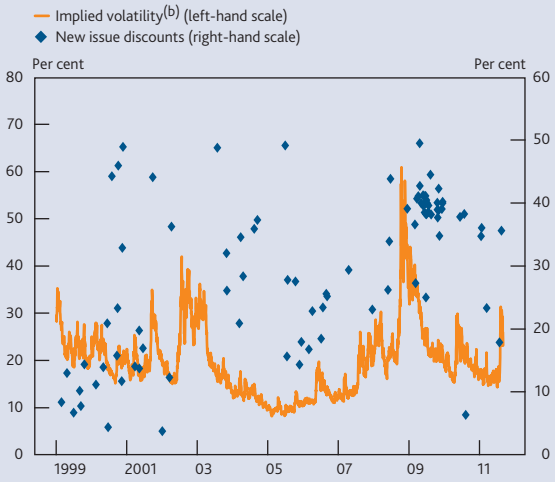
Chart A A decomposition of sterling corporate bond yields



Sources: Bank of America/Merrill Lynch and Bank calculations.

(a) Sterling corporate investment-grade industrials yield to maturity.
(b) Sterling corporate industrial option-adjusted spread over equivalent-maturity government bonds.
(c) Gilt yield calculated as the difference between corporate bond yields and spreads.

Chart B New issue discounts on UK PNFC follow-on equity issues by UK PNFCs(a)

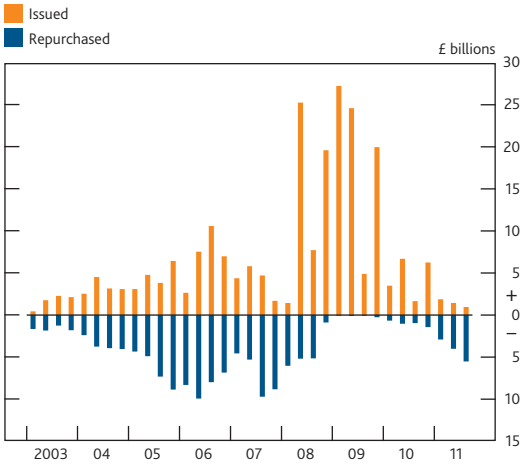


Sources: Dealogic and Bank calculations.

(a) Rights issues smaller than £50 million are excluded for clarity.
(b) Implied volatility is the three-month at-the-money implied volatility for the FTSE 100.

(1) More details about the Bank's Asset Purchase Facility can be found at www.bankofengland.co.uk/markets/apf/index.htm.
(2) A more-detailed discussion of the impact of quantitative easing can be found in Joyce, Tong and Woods (2011).

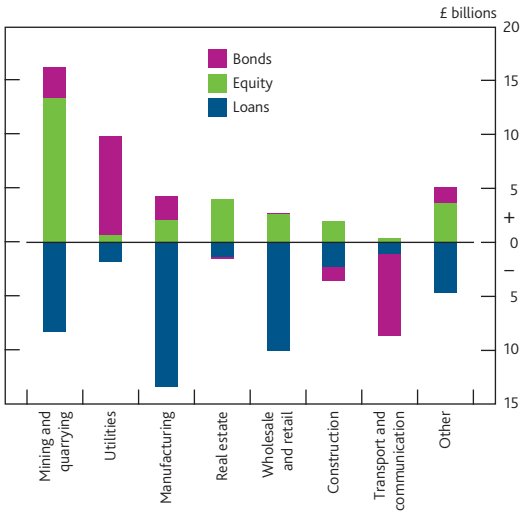
Chart 6 Equity issuance and repurchases by UK private non-financial companies(a)



(a) Quarterly gross repayments and issues of all currency shares in sterling, non seasonally adjusted.

financial officers' (CFOs') perceptions that pre-crisis leverage levels in their companies were too high, and that the economic environment had deteriorated.(1) Market intelligence and sectoral data suggest that proceeds from equity issuance were used to pay down outstanding bank loans. And many UK companies operating in the real estate sector raised further equity in the face of unprecedented sharp falls in commercial and residential real estate values to ease pressure on their balance sheets (**Chart 7**).(2)

Chart 7 Analysis of net funds raised by UK businesses in 2009 by industrial sector(a)



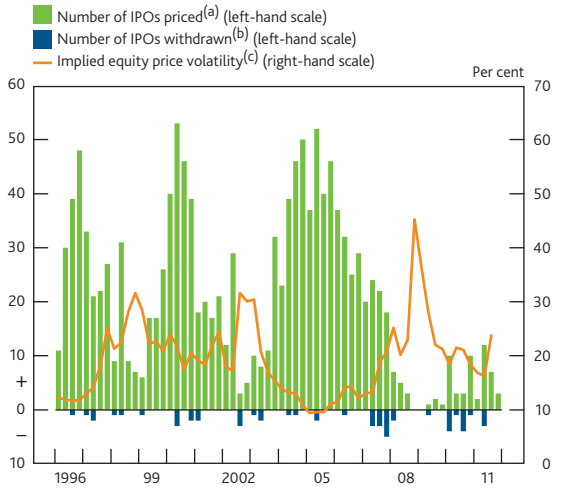
(a) Funds raised by PNFCs from UK monetary financial institutions and capital markets. Data cover lending in both sterling and foreign currency, expressed in sterling terms. Loans are seasonally adjusted. Bond and equity issuance are non seasonally adjusted. Commercial paper is included within bonds.

In addition to issuing new equity, some large UK PNFCs temporarily suspended their share repurchase programmes — a way of returning cash to shareholders by buying back outstanding equity — during 2008 and 2009 (**Chart 6**). Contacts suggested that they often did so in order to retain cash at a time when availability of external finance had become more uncertain.

Equity issuance declined in 2010 and 2011, and a greater proportion of proceeds were used to finance new projects, as the desire for companies to deleverage waned. Indeed, UK CFOs viewed balance sheets as appropriately leveraged by the third quarter of 2010, having been overleveraged during 2009. And company announcements and market intelligence suggest that a larger share of proceeds was used for investment and expansion purposes, particularly in the utilities and mining sector.

In stark contrast with the corporate bond market, first-time equity issuance by UK companies — or initial public offerings (IPOs) — all but disappeared during 2008 and 2009. There were no IPOs conducted by UK PNFCs between October 2008 and June 2009, similar to previous episodes of high equity market volatility (**Chart 8**). According to the Bank's market contacts, the reduction in IPOs reflected a fall in both demand for and supply of equity. Fewer companies were looking to float their shares on the stock market. And investors were reportedly less willing to invest in shares of smaller, newer companies relative to larger, more-established companies.

Chart 8 Quarterly initial public offerings by UK PNFCs



Sources: Dealogic and Bank calculations.

(a) IPOs which were announced and subsequently priced.
(b) IPOs which were announced and subsequently withdrawn from the market.
(c) Quarterly average of three-month at-the-money option implied volatility for the FTSE 100.

First-time equity issuance remained low in 2010 and 2011. This can, in part, be explained by a persistent lack of demand for external equity finance from companies, as the global economic outlook remained highly uncertain. But market contacts suggest that supply-side factors also mattered. A

(1) CFO views as reported in the *Deloitte CFO Survey*, available at www.deloitte.com/view/en_GB/uk/research-and-intelligence/deloitte-research-uk/the-deloitte-cfo-survey/index.htm.
(2) See the box entitled 'Capital market issuance and bank lending' on pages 6–7 of the December 2009 *Trends in Lending*, available at www.bankofengland.co.uk/publications/other/monetary/TrendsDecember09.pdf.

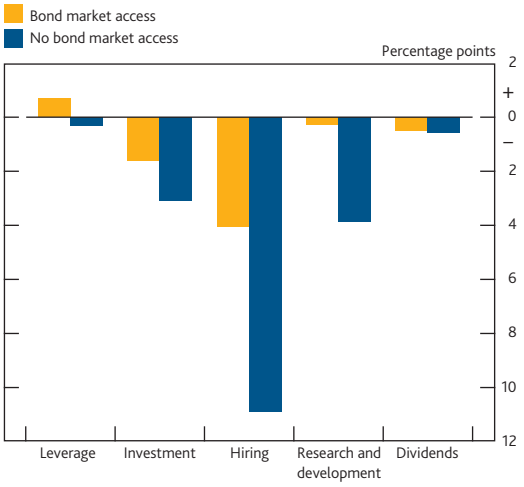
relatively high proportion of companies that did attempt to raise equity via IPOs failed to do so, and had to withdraw from the issuance process (**Chart 8**), perhaps dissuading other companies from attempting to raise finance via the equity market. These failed IPOs were, in part, a result of structural features in the primary issuance process that reduced the likelihood of an IPO being successful during periods of heightened market volatility.(1)

Implications for PNFC spending decisions

Public debt and equity issuance patterns are informative of the financial constraints faced by UK companies during the financial crisis. These patterns suggest, in particular, that some companies with investment opportunities might have been constrained by the contraction in bank lending; and that leverage became more costly compared to the run-up to the crisis. But understanding how access to public external finance affected UK companies' spending decisions, such as investment and hiring, is difficult because there is less information available about private firms to compare against.

Comparing the behaviour of UK companies with and without access to the public bond market, however, suggests that the ability to access non-bank finance may have had a positive impact on spending decisions between 2008 and 2011. On average, leverage increased for companies with bond market access, while it fell for companies without. This suggests that some of the deleveraging by bank-reliant companies was driven by the contraction in bank lending. Furthermore, companies with bond market access reduced their investment, hiring rates, and research and development spending by less than companies without access to bond markets (**Chart 9**), compared to pre-crisis levels. These findings are robust to considering pre-crisis differences in the variability of investment, hiring, and research and development spending between the two groups.

Chart 9 Financing and spending of UK PNFCs, difference between post and pre-crisis averages(a)



Sources: Dealogic, Thomson Reuters and Bank calculations.

(a) The sample includes 104 companies with bond market access and 1,616 without. All variables are measured at book value. Leverage is the ratio of total debt to total assets; investment and research and development spending and dividends are divided by total assets; hiring is the annual percentage change in employees. For each variable, the bar shows the difference between the 2000–07 and the 2008–10 averages across groups.

UK companies' ability to access public equity markets might also have positively affected their spending decisions during the crisis. Companies who were able to de-lever by issuing new equity might have paid more dividends to shareholders, or might have had to sell fewer assets, than companies unable to do so. Although all companies in the data set have access to public equity, those that issued new equity during the crisis cut leverage more drastically than companies that did not, compared with pre-crisis levels.

This evidence suggests that UK companies that were able to access alternative sources of external finance to bank lending adjusted both financing and spending behaviour less sharply during the crisis.(2)

Conclusions

Public capital markets play an important role in the UK economy. Even though only a small fraction of UK companies issue public debt or equity as a form of external finance, those that do account for a relatively large share of economic activity, including domestic employment and investment.

Furthermore, evidence suggests that access to public capital markets allowed some companies to dampen the impact of the recent financial crisis, particularly the sharp reduction in the supply of bank credit. Corporate bond issuance enabled companies to switch away from bank loans. And equity issuance also allowed companies to reduce their leverage. In the absence of external sources of non-bank finance, the evidence suggests that the spending decisions of companies might have been more dramatically affected, with potentially sharper cuts in employment and investment.

Access to public capital markets is no panacea, however. Public external finance cannot substitute many of the relationship aspects of lending via bank loans, and may be unsuitable for some companies — particularly small or high-risk companies who have a high likelihood of needing to re-negotiate with their lenders. Companies that are overly reliant on public external finance could also be vulnerable to volatility in secondary markets, which may restrict capital market access irrespective of their investment opportunities.

(1) A number of these features — such as large IPO syndicates, the time lag between publicising and completing an IPO, and the process of frequently updating investors during the pricing process — are discussed in the 2011 Q1 *Quarterly Bulletin*, pages 15–16, available at www.bankofengland.co.uk/publications/quarterlybulletin/qb1101.pdf, and a recent London Stock Exchange report 'Leadership in a changing global economy: the future of London's IPO market', available at www.londonstockexchange.com/about-the-exchange/media-relations/reports/ipo-report2011.pdf.

(2) The evidence on UK PNFCs in the data set is consistent with results in Campello, Graham and Harvey (2010), which explores international survey evidence on financial constraints and corporate spending during the crisis.

Broadening access to public capital markets may reduce the impact of tight bank credit supply on real activity in the United Kingdom. Although a number of UK companies have issued bonds for the first time since 2009, many smaller companies may have been unable to use alternative sources of finance from outside the banking system. In part recognising this, the Government has established an industry working group to explore how to develop access to non-bank lending channels further, including forms of bond issuance, for SMEs and mid-sized businesses.(1)

Central banks can also play a role in maintaining orderly financial markets to support issuance of public debt or equity. For example, the Bank of England has intervened in the sterling corporate bond market since 2009 as part of its Asset Purchase Facility operations.

(1) See page 41 of HM Treasury's 2011 Autumn Statement, available at http://cdn.hm-treasury.gov.uk/autumn_statement.pdf.

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