28 August 2015

Corporate Funding Structures and Incentives

Final report

Introduction

In the aftermath of the global financial crisis, a concerted effort has been made to reduce leverage in the financial sector. For instance, the aggregate leverage of large internationally active banks declined from 29 times Tier 1 capital in 2011 H1 to 22 times in 2014 H1.[1] Such reductions are helping to reduce the vulnerability of the financial system to shocks.

However, broader measures of debt and leverage, which cover both financial and nonfinancial sectors, have continued to grow in many countries.[2] Leverage in nonfinancial sectors in the economy can also represent a vulnerability, because it can act to amplify changes in fundamentals and make households, nonfinancial businesses and governments more sensitive to shocks. Some studies find that excessive debt can dampen economic growth. It has been shown to lead to financial crises and to hamper economic recovery from recessions.[3]

In the post-crisis period, there has been a noteworthy increase in nonfinancial corporate debt, particularly in some emerging economies. This has taken the form both of bond issuance and bank borrowing. In aggregate, this has led to higher levels of corporate leverage as measured by the ratio of nonfinancial corporate debt to GDP. Questions have been raised about the incentives that have led to this increase and whether the trend represents a risk to financial stability.

---

1 See Basel Committee for Banking Supervision, *Basel III Monitoring Report 2015*, Table A.16.

2 According to one estimate, the global stock of debt (summing household, corporate, government and financial) rose from $142 trillion (269% of GDP) at end-2007 to $199 trillion (286% of GDP) in the second quarter of 2014. McKinsey Global Institute (2015), "Debt and (Not Much) De-leveraging," http://www.mckinsey.com/insights/economic_studies/debt_and_not_much_deleveraging. The Report examines the evolution of debt in 47 countries around the world, including both developed and emerging economies. Similarly, Buttiglione et al estimate that the global ratio of gross nonfinancial debt to GDP has risen every year since 2000 from 160% to 215%. (For details, see Buttiglione, L., Lane, P.R., Reichlin, L., Reinhart, V., (2014), "Deleveraging? What Deleveraging?" Geneva Reports on the World Economy 16, International Center for Monetary and Banking Studies and CEPR.

3 For recent studies on the inverse relationship between debt and growth, see Kumar, M.S. and J. Woo (2010), "Public debt and growth", IMF Working Paper, No. 10/174, Reinhart, C. M. & Rogoff, K. S., (2010) "Growth in a Time of Debt. American Economic Review Papers and Proceedings, 100(2), 573-78. Cecchetti, S., Mohanty, M., Zampolli F., (2011) "The Real Effects of Debt" BIS Working Papers, No:352. Reinhart, C., Reinhart, V., Rogoff K., (2012) "Public Debt Overhangs: Advanced Economy Episodes since 1800", Journal of Economic Perspectives, Vol:26 (3), 69-86.

This report responds to the request of G20 Finance Ministers and Governors in their February 2015 communique for "the FSB, coordinating the inputs of the IMF, OECD, BIS, IOSCO and WBG to prepare a report by our meeting in September preceded by an interim report to the June Deputies meeting to examine the factors that shape the liability structure of corporates focusing on its implications for financial stability."

The report has been prepared by the FSB Secretariat, based on the contributions by the staff of the six international organisations. It describes:

- the growth in nonfinancial corporate debt since the crisis, including differences across countries and regions (section 1);
- insights into the incentives, including structural and regulatory factors, influencing these trends (section 2);
- possible related financial stability concerns (section 3);
- the potential role of macroprudential policies (section 4);
- and possible next steps (section 5).

It focuses on developments and issues for publicly-traded nonfinancial companies. Data on debt at privately-owned small and medium-sized companies are not widely available; they may face many of the same incentives and issues as larger companies, but small companies may also be disincentivised from raising new equity finance by a stronger desire to avoid dilution of ownership (e.g. where they are family-owned or otherwise closely-controlled).

The way that corporate funding is structured and financed is of interest to authorities because it will affect the resilience and decision-making of individual corporates and at the aggregate level could possibly affect the stability of the wider financial system. Corporate funding markets and corporate liability structures may be relevant for financial stability in a number of ways.

Well-functioning debt and equity markets allow businesses to fund investment flexibly and at a relatively low cost to existing shareholders, thereby contributing to investment and growth. National authorities and international organisations have therefore worked extensively to encourage the development of such markets.

However, high debt levels relative to equity in corporate balance sheets create leverage which can accentuate losses to owners, and create elevated debt service requirements. This in turn can lead to exacerbated cash flow stress, deteriorating creditworthiness, debt-rollover risks and higher corporate default rates. Moreover, in particular if credit risk is under-priced, spikes in default rates may permeate through the financial system as investors and creditors, including the banking system, incur losses. To the extent that there are high and pro-cyclical levels of corporate leverage that affect a significant number of companies, this may add to pro-cyclicality of the financial system, and hence reduce financial stability.

The report contains a summary analysis of issues that could have a bearing on financial stability. It also proposes that there could be further work in 2016, including on: i) further analysis of data on nonfinancial corporate leverage to examine the extent to which particular economic factors drive the liability structure choices of different types of corporates and whether any financial stability concerns arise from these, ii) existing country experiences with the use of macroprudential tools used to address risks arising from corporate debt financing, iii) country-specific case studies on addressing the debt-equity tax bias.

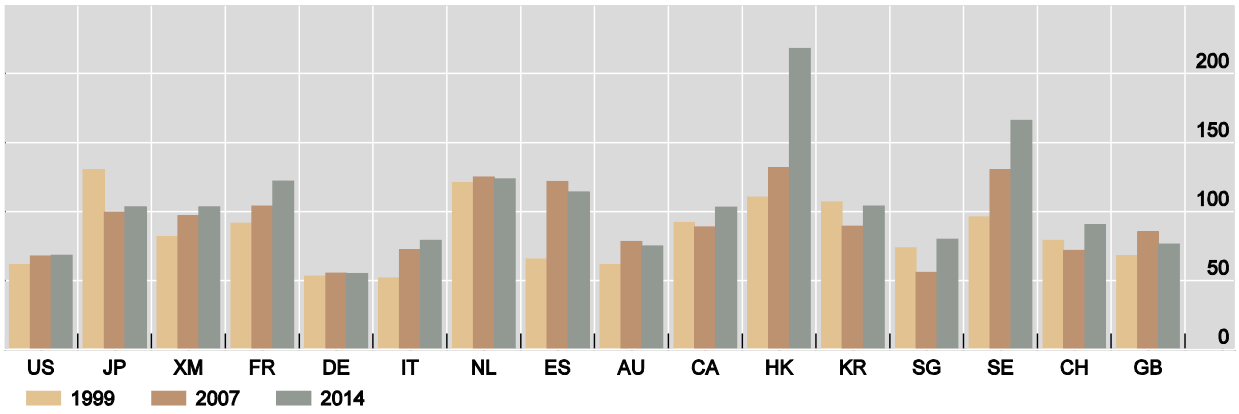
1. Trends in Corporate Funding Structures

Nonfinancial corporate debt levels have increased relative to GDP over the last 15 years, in both advanced economies and emerging markets. This increase has been much faster in emerging markets as their markets have deepened. Nonfinancial corporate debt-to-GDP for a selected group of advanced economies in 1999 was 77% and for a group of large emerging market and developing economies (EMDEs) was 38%, but the subsequent rapid growth of debt in these EMDEs meant that by 2014 the average levels for these EMDEs surpassed the advanced economies - 87% and 90% (see annexed Tables 1 and 2). This includes a rapid acceleration of debt growth in EMDEs since pre-financial crisis levels in 2007, as nonfinancial corporate debt-to-GDP has increased by 31 percentage points for EMDEs, but only by 2 percentage points for advanced economies during that time.

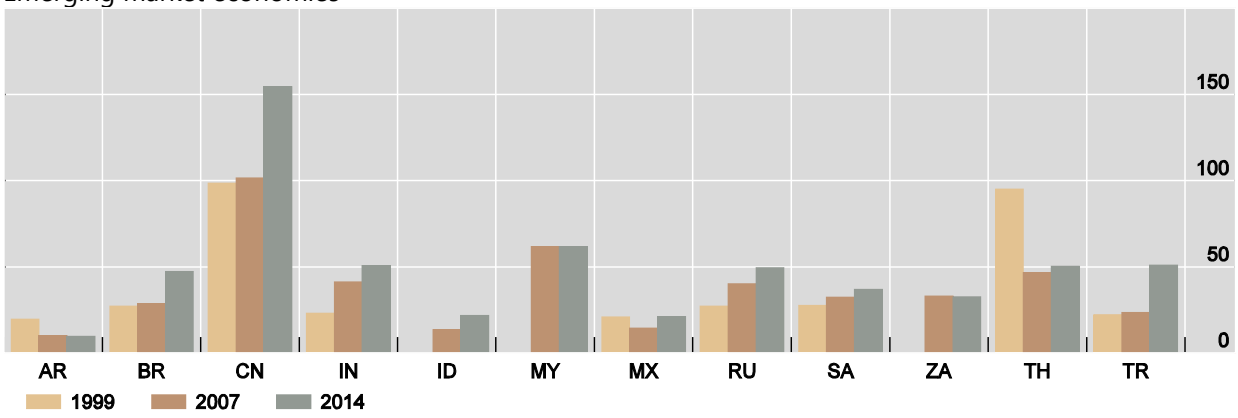
Within the overall figures, there are major differences between countries, both in levels and in growth rates of nonfinancial corporate debt (see Figure 1). For instance, amongst major advanced economies, the level of such debt varies from a rapidly-growing 166% of GDP for Sweden to a flat 55% for Germany, and in some countries corporate debt decreased slightly. In emerging markets, China's nonfinancial corporate debt has risen to over 150% of GDP, above the levels of most advanced economies, while Mexico's is only 21%. For EMDEs, growth rates of corporate debt vary considerably across countries. The graphs below illustrate these developments.

Figure 1 - Total non-financial corporate debt (as a percentage of GDP)

Advanced economies[1]



Emerging market economies[2]

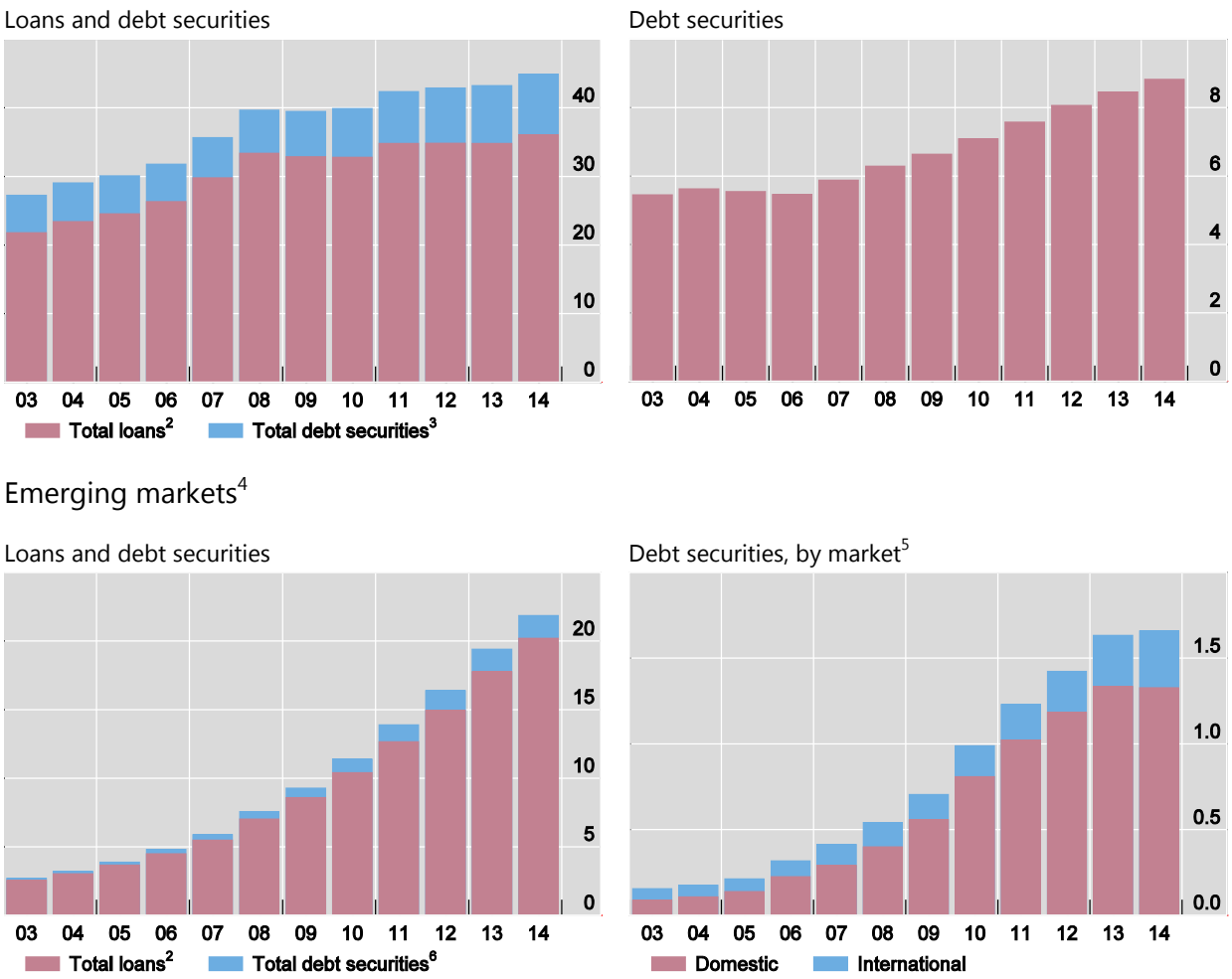


[1] Australia, Canada, France, Germany, Hong Kong SAR, Italy, Japan, Korea, the Netherlands, Singapore, Spain, Sweden, Switzerland, the United Kingdom and the United States. [2] Argentina, Brazil, China, India, Indonesia, Malaysia, Mexico, Russia, Saudi Arabia, South Africa, Thailand and Turkey.

Sources: IMF, *World Economic Outlook*; OECD; national sources.

Figure 2- Composition of non-financial corporate outstanding debt

(In trillions of US dollars)



[1] Countries included are: Australia, Canada, France, Germany, Hong Kong SAR, Italy, Japan, Korea, the Netherlands, Singapore, Spain, Sweden, Switzerland, the United Kingdom and the United States. [2] Total loans to non-financial corporations. [3] Aggregate outstanding, by residence of issuer. [4] Countries included are: Argentina, Brazil, China, India, Indonesia, Malaysia, Mexico, Russia, Saudi Arabia, South Africa, Thailand and Turkey. [5] By residence of issuer. [6] Sum of domestic and international debt securities (see the right-hand panel).

Source: national data, BIS domestic and international debt securities statistics.

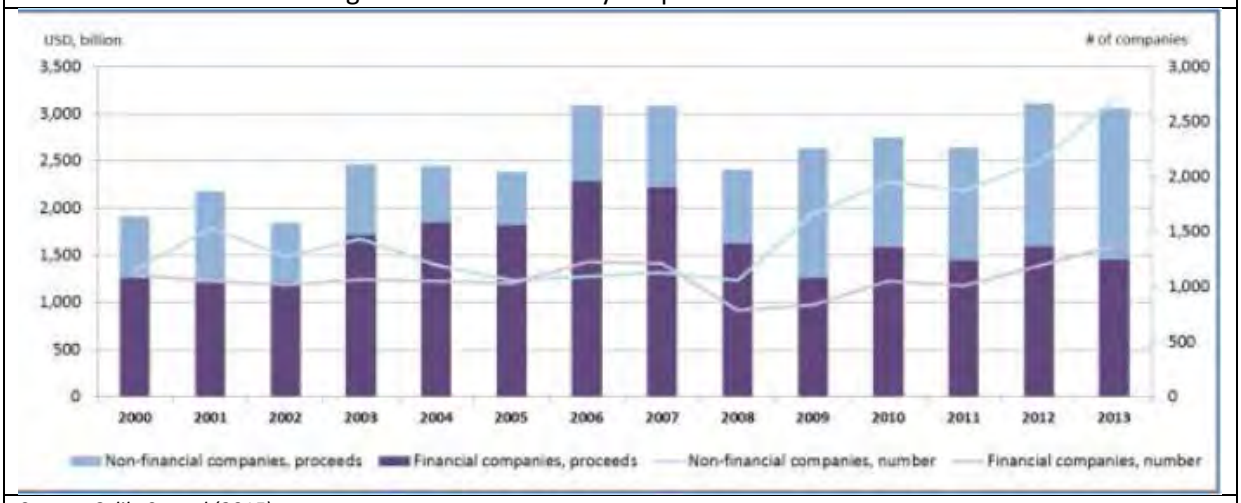
Some of this growth in debt in EMDEs is benign and even desirable. In EMDEs with low starting levels of corporate debt, rising debt may reflect a healthy deepening in the financial system, as more companies gain access to financial services and as their own financial condition improves. However, in many EMDEs, corporate debt grew faster than earnings in 2014, with debt-to-earnings now higher than its 5-year average, and according to some measures risks related to corporate debt have increased. Furthermore, the increased amount of outstanding debt, declining underwriting standards, and declining secondary market liquidity conditions, taken together, have increased concerns that a sharp sell-off in corporate debt markets could produce disorderly conditions in financial markets. Any resulting increase in financing costs would have negative implications for the real economy.

Since the crisis, market sources of credit have become increasingly important (see Figure 2). In a number of advanced economies, corporate bonds and lending by non-bank institutions have accounted for nearly all new credit for corporates since 2007, while bank lending to corporates has shrunk.[4] However in contrast to advanced economies, bank lending in EMDEs has also risen along with bond issuance.[5]

Corporate bonds have assumed a greater role in international fixed-income markets. Issuers have wide flexibility in how they structure and issue debt securities and the market on which the debt securities are issued and traded (domestic versus international) and the currency denomination of the securities (local versus "hard currency") are two important factors for financial stability.

Globally, nonfinancial corporates have replaced sovereigns and financial issuers as the largest bond issuers with US$6.9 trn of issuance since 2008.[6] Not only has the amount of issuance increased, but between 2008 and 2013 the number of nonfinancial corporates issuing bonds has doubled, suggesting a deepening of capital markets and an important diversification in the sources of corporate financing for many corporates (Figure 3).

Figure 3: Global Primary Corporate Bond Markets



Source: Celik, S. et al (2015)

Against the backdrop of ample global liquidity and prolonged low global interest rates, nonfinancial corporate bond issuance in major EMDEs has risen sharply. New corporate bond issuance in a selection of major EMDEs rose 10% in 2014, with Asia leading other regions (Figure 4).

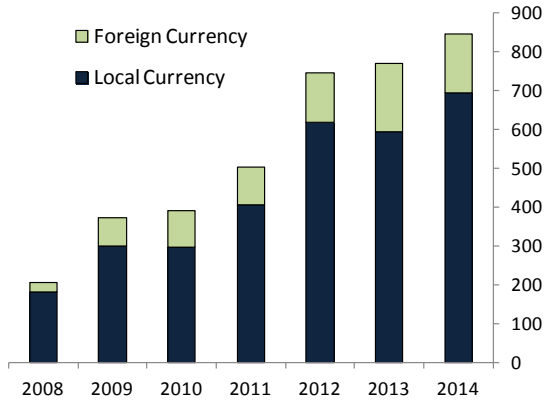
[4] The countries mentioned in this context are Australia, Canada, France, Germany, Japan, Netherlands, South Korea, United Kingdom and United States .For details, see McKinsey Global Institute (2015),

[5] For details, see Annex A.

[6] Celik, S., G. Demirtas, and M. Isaksson (2015), 'Corporate Bonds, Bondholders and Corporate Governance", OECD Corporate Governance Working Papers, No. 16, http://www.oecd-ilibrary.org/governance/oecd-corporate-governance-working-papers_22230939.

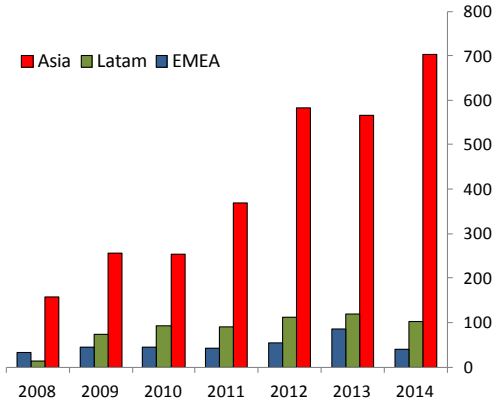
Figure 4. Nonfinancial Corporate Bond Issuance by Selected Emerging Economies

1. Bond Issuance by Currency (in US$ billion)



Source: IMF: Annex A. (The countries in the sample: Argentina, Brazil, Bulgaria, Chile, China, Hungary, India, Indonesia, Malaysia, Mexico, Peru, Philippines, Poland, Russia, South Africa, Thailand, Turkey)

2. Bond Issuance by Regions (in US$ billion)



Source: IMF: Annex A. (Same countries)

Focusing more narrowly on the growth of international bond issuance by EMDEs, the World Bank paper *Global Liquidity and External Bond Issuance in Emerging Markets and Developing Economies* (see Annex B) analyses the global factors that have contributed to this growth. It notes that bond issuance in international markets by EMDEs (comprising both corporate and sovereign issuance) increased steadily before the global financial crisis, and accelerated afterwards. Total annual issuance of international bonds by EMDEs rose from around $64 bn in 2000 to $400 bn in 2014. In line with the trends outlined above, issuance of international bonds has been driven in recent years by corporate issuance ($300 bn corporate vs $99 bn sovereign in 2014, compared to $14 bn corporate and $50 bn sovereign in 2000). In March 2015, higher-income EMDEs had $1.4 trn of outstanding bonds while lower-income EMDEs had about $280 bn, both representing all-time highs.

There has also been a shift in EU advanced economies away from a bank-based approach to corporate funding towards a more diversified corporate funding model, especially for larger companies. For instance, prior to the crisis nonfinancial corporates accounted for only 17% of total European financial and nonfinancial corporate bond issuance, but this share had grown to 40% in 2013.[7] Furthermore, non-investment-grade bonds, which were virtually non-existent in Europe prior to the crisis, now comprise about 12% of the total amount of European financial and nonfinancial corporate issuance. Nevertheless, the great majority of the outstanding stock of European corporate debt remains in the form of bank lending rather than bonds. At end-March 2014, euro-area nonfinancial corporates still had only EUR 1.1 trn of outstanding debt securities, compared with EUR 8.6 trn of bank loans.

[7] Ibid., p. 14

There are a number of factors explaining these trends. To a certain extent country-specific factors play a role, such as the continuation of the upward trend in issuance that was already in place in many fast-growing EMDEs prior to the crisis. However the acceleration of corporate issuance since the crisis is largely explained by global push factors.[8] Yields on the sovereign debt of many advanced economies have been low, reflecting the widespread impact of extraordinary monetary policies conducted by a number of central banks. These actions have lowered risk premiums and compressed global market volatility, leading to increased supply from issuers of corporate debt because of the significant reduction in issuance costs and increased demand from investors for higher-yielding products. This shift has been reinforced in some cases by the deleveraging taking place in certain banking systems that have encouraged a substitution towards market-based finance.

However, in the current environment slowing economic growth in EMDEs is putting pressure on some firms' profitability and debt service capacity. As noted above, corporate profitability has declined relative to its five-year averages across most EMDE countries, with broad-based weaknesses across sectors (see Annex A). Corporate debt has grown faster than earnings in most EMDE countries over the last several years, evidenced by the increase in the ratio of net debt to earnings before interest and taxes (EBIT), which suggests that the leverage of EMDE corporates is increasing, negatively affecting their creditworthiness. The decline in debt-servicing capacity for some corporates has in part driven the IMF's estimates that the share of "debt at risk" in total corporate debt rose by 22% in 2014 from levels in 2010. There could be value in further examination of the extent to which particular economic factors drive the liability structure choices of different types of corporates and whether any financial stability concerns arise from these. For instance, capital-intensive industries (energy sector, mining sector etc.) tend to have more debt-heavy liability structures, whereas service-oriented firms tend to have more equity-heavy (including privately-owned) structures. Larger firms are more likely to issue debt on capital markets than smaller firms, and corporate financing in EMDEs and the euro area tends to be more bank-based compared to other advanced economies.

Shifting market-based debt characteristics

The increase in the supply of corporate debt has in large part been facilitated by the search-for-yield environment created by the extraordinary policy measures undertaken in the US, UK, euro area and Japan. The increased investor demand for riskier and higher yielding investments has in turn altered the composition of corporate debt markets.

For example, global issuance of non-investment-grade bonds increased from $82 bn in 2000 to $556 bn in 2013, as well as a shift towards debt with fixed-interest and callable features.[9] Maturities for higher-yielding debt have increased; for instance the average maturity of external issuance by EMDEs has increased to almost 8 years recently, up from 7.3 years in 2009 immediately after the crisis - although it remains below the pre-crisis average maturity of 9 years. The majority of the total $1.7 trn currently outstanding external EMDE bonds will mature before 2024, peaking in 2019.

---

[8] For details, see Annex B

[9] For details, see Celik, S. et al (2015), including p. 19-20: "A callable bond gives the issuer the option to redeem the bond prior to maturity. The value of all callable bonds as a share of all corporate bonds issued in 2012 and 2013 exceeded 36% compared to 16% in 2000."

Covenants have also been relaxed. While the increase in covenant-lite bonds[10] in the US has been well documented, work by the OECD[11] suggests that globally investor protection covenants in non-investment-grade bonds are half as common as they were 10 years ago. Overall, in recent years, the shift in the micro-structure of the corporate bond market has resulted in greater flexibility for issuers, but potentially greater credit risk for investors (while diminishing yields have reduced investors' compensation for that risk).

Another important trend has been the increase in foreign currency corporate funding. BIS research[12] shows that since the global financial crisis, banks and bond investors have increased the outstanding US dollar credit to non-bank borrowers outside the US from $6 trn to $9 trn. This has the potential to create currency mismatches, which may increase financial stability concerns if a sufficient number of corporates are subject to such mismatches and if there is no natural hedge and financial instruments for hedging are not available, as discussed in section 3 below.[13]

2. Structural and regulatory factors influencing corporate funding structures

When considering relative incentives toward equity and debt financing, a useful starting point is the Modigliani-Miller theorem[14], which states that, in the absence of taxes, bankruptcy costs, agency costs, and asymmetric information, and in an efficient market, the value of a firm is unaffected by how that firm is financed. However, there are tax, accounting, incentive and conjunctural factors that in practice limit the neutrality between funding choices.

In this spirit, the academic literature commonly postulates that, when companies seek external financing, they normally tend to prefer debt to equity, since debt financing entails lower costs and does not change ownership structures.[15] Additional equity financing is much less frequent, but will be employed in certain circumstances such as when firms are growing rapidly or debt levels are high. Empirical studies support these predictions, and suggest a number of additional firm and industry-specific characteristics that are likely to play a role in corporates' funding decisions.[16]

---

[10] Covenant-lite bonds are bonds with more relaxed restrictions on collateral, payment terms and other contractual obligations.

[11] See Celik, S. et al (2015)

[12] McCauley, R, P McGuire and V Sushko (2015): "Global dollar credit: links to US monetary policy and leverage", Economic Policy, April, pp 187–229.

[13] For details, Annex E.2

[14] Modigliani, F. & Miller, M.H. (1958). "The Cost of Capital, Corporation Finance and the Theory of Investment". American Economic Review 48 (3): pp. 261–297.

[15] "Pecking order theory" set out by Myers, S.C. (1984). "The Capital Structure Puzzle", The Journal of Finance, 39 (3), pp. 574-592. This theory is referenced in many subsequent papers, for instance, Fama, E.F. & French, K.R. (2002). "Testing Trade-off and Pecking Order Predictions about dividends and debt", Review of Financial Studies, 15(1), pp. 1-33. Frank, M.Z. & Goyal V.K. (2009). "Capital Structure Decisions: Which Factors are Reliably Important?", Financial Management, 38(1), pp. 201-222.

[16] In general most of the studies categorise the factors into corporation-specific factors and macroeconomic factors or country specific factors; such as De Jong, A. Kabir, R & Nguyen, T.T. (2008). "Capital Structure Around the World: The Roles of Firm-and-Country-Specific Determinants", Journal of Banking and & Finance, 32(9), pp. 1954-1969, Kayo,

This section sets out some of the factors that can be relevant to corporate decisions about their liability structures.

a. Conjunctural and regulatory factors

Section 1 above described the conjunctural factors leading to increased investor demand for debt instruments as a result of the extraordinary monetary policies following the financial crisis. In particular, debt accumulation has been encouraged by the availability of low-cost, abundant and flexible debt, which has provided an unprecedented opportunity to increase returns to the equity holders. More generally, debt issuance by nonfinancial corporations is influenced both by supply-side and demand-side considerations, each with their own policy implications.

On the supply side of debt issuance, especially for some EMDEs, nonfinancial corporations have seen growing incentives and opportunities to increase leverage, by borrowing in both foreign and domestic currencies. The depth of corporate debt markets varies across countries. Nevertheless, as discussed above, they have taken advantage of the low all-in yields available to fund expansion plans, where they have stronger growth prospects. Moreover, the increased depth and breadth of the markets, as well as improved fundamentals in a number of EMDEs triggering multiple sovereign credit rating upgrades, decreased the risk premium for issuing EMDE corporate debt.

On the demand side, institutional investors are important investors in global equity and bond markets, with the overall size of the sector's balance sheet exceeding the size of the economy in many advanced economies. While investors have different mandates, incentives and knowledge of the markets in which they are investing, regulatory developments have remained an important factor in shaping institutional investors' asset allocation strategies. In particular, changes in regulations, in the aftermath of the equity downturn in 2000-2002, have aimed to incentivise pension funds and insurance companies to reduce their risk profiles and directly consider asset-liability matching in asset allocation decisions including their demand for corporate debt.[17] Accordingly, in an effort to de-risk, these investors have tended to shift their asset allocation decisions away from equities to fixed-income securities. Moreover, different quantitative restrictions have traditionally been applied for pension funds in many countries, normally stipulating upper limits on investment in specific asset classes, including equity. A survey conducted by the OECD states that several countries impose limits on the proportion of equity held in portfolios, such as Austria, Czech Republic, Denmark, Finland,

---

E.K. & Kimura, H. (2011). "Hierarchical Determinants of Capital Structure", Journal of Banking & Finance, 35 (2), pp. 358-371. Joeveer, K. (2013), "Firm, Country and Macroeconomic Determinants of Capital Structure: Evidence From Transition Economies", Journal of Comparative Economics, 41, pp. 294-308

[17] See "Institutional Investors, Global Savings and Asset Allocation", CGFS papers no:27 (2007), Bank for International Settlements, accessible at: http://www.bis.org/publ/cgfs27.pdf

Germany, Greece, Korea, Norway, Sweden, Switzerland and Turkey.[18] On the other hand, demand for both equity and debt securities has been stimulated in some EMDEs by well-developed pension fund industries (notably in Latin America) and insurance industries (notably in Asia).

Traditionally bank loans constitute the main source of debt financing for the majority of European firms. However, deleveraging by banks after the global financial crisis has led to a shrinkage of bank balance sheets and, for the nonfinancial corporate sector, bank borrowing has been at least partly substituted by an increase in corporate bond issuance.

The diversification of funding sources should lead to more efficient capital allocation and better risk sharing, with a positive impact on long term growth. Moreover, local bond issuance does not share the strongly pro-cyclical behaviour of bank lending.[19]

b. Role of tax deductibility

In most corporate income tax systems, interest can be deducted in calculating liability to corporate taxation but returns to equity cannot.[20] Langedijk et al (2015)[21] states that 'the corporate debt bias' – the asymmetric tax treatment of different sources of finance at the corporate level - originates from historical conventions and does not have any economic rationale. This asymmetry distorts incentives in two ways:

> *Debt bias:* an incentive for corporates to prefer debt financing over equity financing beyond that which would otherwise be justified in economic terms.
>
> *Debt shifting:* cross-country differences in corporate income tax rates that can lead corporate groups to conduct internal lending from low-tax countries to high-tax countries, or by locating external borrowings in high-tax countries (although tax authorities are likely to challenge artificial structures that are intended to evade tax).

The two are related: within multinational groups, the tax gains from debt shifting may exacerbate the bias in favour of financing externally by debt.

A sizeable empirical literature finds that tax distortions have a significant and considerable impact on corporate leverage in the nonfinancial sector: one meta-study (calculating a consensus from the full set of studies) suggests that it could lead, at a corporate income tax rate of 40 percent, to leverage ratios being 10 percentage points higher than under a system which was neutral between debt and equity.[22] Similarly, Feld et al (2013) (as cited in

---

[18] OECD (2011), "Pension Funds Investment in Infrastructure: a Survey", accessible at http://www.oecd.org/futures/infrastructureto2030/48634596.pdf. See also forthcoming OECD report to the G20, "Regulation of Insurance Company and Pension Fund Investment" (2015).

[19] Ayala, D., M. Nedeljkovic, C. Saborowski, (2015) "What slice of the Pie? The Corporate Bond Market Boom in Emerging Economies", IMF Working Paper, WP/15/148

[20] The relative treatment of interest and equity income under the personal income and withholding taxes also needs to be taken into account, and in some cases may offset the asymmetry at the corporate level.

[21] Langedijk, S, G Nicodeme, A Pagano and A Rossi (2015) "Debt bias in corporate income taxation and the costs of banking crises", VOX, CEPR's policy portal, accessible at http://www.voxeu.org/article/corporate-debt-bias-and-cost-banking-crises

[22] de Mooij (2011), "The Tax Elasticity of Corporate Debt: A Synthesis of Size and Variations," IMF Working Paper 11/95

Langedijk et al (2015)) predict that each one percentage-point increase in the corporate tax rate increases the debt-to-assets ratio by 0.27 percentage points.

Policy makers in several countries, increasingly conscious of these distortions, have adopted a range of measures to mitigate or address them. Action 4 of the G20-OECD Base Erosion and Profit Shifting (BEPS) project limiting base erosion via interest deductions aims at addressing profit shifting using interest.[23] This is, however, not always intended to address the basic tax asymmetry that gives rise to debt bias. To address debt bias, some countries have simply adopted limits on the interest expense that can be deducted, perhaps relative to current earnings[24] and a few have provided an 'Allowance for Corporate Equity' (ACE) that eases the asymmetry by also providing a deduction for the cost of equity finance.[25] Countries typically limit interest deductions and only a few provide an allowance for corporate equity. However, in the past, such policy responses have been divergent and often ad hoc.

Annex C on 'The Role of Taxation in Shaping Corporate Liability Structures' elaborates on this issue, including on the implications for financial stability.

c. Public disclosures

No evidence is available that public disclosure requirements are a significant factor in corporate decisions about whether liabilities they issue should be in the form of debt or equity.[26]

The IOSCO annex *International Policies for Public Disclosure- Corporates as Public Issuers of Debt and Equity Securities* (Annex D) outlines the steps taken by securities regulators to enhance transparency for both equity and corporate bond issues. Over time IOSCO has provided more guidance to regulators on issuers' disclosure of information to investors in the public capital markets.[27]

The disclosures that a securities regulator requires are intended to give investors information that is timely, material and not misleading about a company and its circumstances (for example, issuer domicile, size, industry, number of securities holders). As equity represents an interest in the residual profits of a company, the pricing of equity may, more keenly than

---

[23] The BEPS report on Action 4 is expected to recommend a consistent and comprehensive approach to limiting interest deductibility in order to address BEPS risks.

[24] For example, in the European Union, several reforms were undertaken in 2012 and 2013 to address the debt bias in corporate taxation. "These measures mostly tended to restrict the level of deductible interest. France and Portugal restricted the deduction of interest payments above a threshold of EUR 3 million. In France, the limit is 85% (75% from 2014) of interest paid, while in Portugal it is 70% of profit obtained before depreciation, net financing expenses and taxes from 2013, falling to 30% in 2017. Spain and the Netherlands revoked their thin capitalisation rules and introduced new rules on the non-deductibility of certain interest expenses (a so-called earning stripping rule). Spain, Sweden and Finland limited the scope of deductibility of interest expenses on intra-group loans. In contrast, Hungary introduced a cash-flow tax for small companies, which in practice allows immediate expensing of all financing costs." (For details, European Commission (2013), Tax Reforms in EU Member States: Tax Policy Challenges for Economic Growth and Fiscal Sustainability, European Economy 5, 2013)

[25] These countries include Austria, Belgium, Brazil, Croatia, Italy and Latvia.

[26] Companies may face differing disclosure requirements for public offerings and for private offerings (The latter is an increasing form of issuance for some EMDE corporates.)

[27] See IOSCO Objectives and Principles of Securities Regulation, June 2010, available at: https://www.iosco.org/library/pubdocs/pdf/IOSCOPD323.pdf

debt, depend on disclosures made that provide information relevant to future profits. On the other hand, the pricing of debt may be particularly sensitive to disclosures about the issuer's cash flow and liquidity in the timeframe that the debt service is required.

d. Accounting requirements

Issuers prepare the financial statement element of their financial information disclosures in accordance with a set of accounting standards, such as national accounting standards or International Financial Reporting Standards (IFRS). IFRS contain standards that address how an issuer should recognise, measure and present its outstanding debt and equity in its balance sheet, as well as disclose information about each in the footnotes to its financial statements.

Accounting standards also contain provisions for distinguishing between financial liabilities and equity in financial statements. Under IFRS a liability is defined as "a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits", and equity is "the residual interest in the assets of the entity after deducting all its liabilities".[28] The IASB is aware that these definitions, and the more detailed requirements in IAS32 "Financial Instruments: Presentation", are not always applied in in a way that results in a consistent distinction between equity and non-equity instruments. The IASB has a project underway to reassess these treatments, but it is at an early stage of development.

Particular challenges in reassessing these treatments arise from instruments that include both some characteristics of debt and some characteristics of equity. It is challenging to determine whether these instruments (or components of them) are best classified as liabilities or as equity. It is also important to ensure sufficient disclosure of the characteristics of these instruments, regardless of how they (or their components) are classified. The classification of these instruments, and the nature of disclosures about them, have implications for collating data and statistics about corporate funding structures.

Accounting standards help to elicit historical financial information that addresses users' objective to be able to assess the amount, timing and uncertainty of future cash flows, and the information needs of debt and equity investors are converging. In an environment where the disclosure requirements are similar, disclosure requirements are unlikely to have a significant effect on companies' decisions on whether to opt for debt or equity finance. However, the need for market transparency, and costs of disclosures, can be reasons for some privately-owned companies to avoid issuing publicly-traded securities at all (whether it be debt or equity). In such cases, companies may opt instead for bank borrowing or private debt issues.

e. Bank capital requirements

No evidence is available that bank capital requirements are a significant factor in corporate decisions about whether liabilities they issue should be in the form of debt or equity. Nevertheless, it is possible that recent regulatory reforms (e.g. Basel III framework, the Dodd-Frank Act in the US and the Banking Union in the EU) may indirectly have an impact

[28] IFRS Conceptual Framework 4.4(b) and 4.4(c). The definition in the US FASB Framework is similar

on the decision making process of corporates when choosing between equity or debt financing, as well as when choosing between bank versus market debt.

Within the banking sector, in December 2014 the Basel Committee issued, as part of its reforms to the capital framework, a consultation paper on proposed revisions to the standardised approach for measuring credit risk in the capital framework.[29] The revisions to the standardised approach are, *inter alia*, intended to improve the granularity and risk sensitivity of the framework, reduce the reliance on external ratings and improve the alignment with exposures risk weighted under the internal ratings-based approach.

To enhance the risk sensitivity of the current standardised approach as set forth in Basel II,[30] the Basel Committee has proposed to introduce a specific treatment for corporate equity exposures involving higher capital requirements than corporate senior debt exposures.[31] This would be consistent with other parts of the capital framework which recognise that equity investments are riskier than debt.

These proposals are still under consultation, and therefore cannot explain the observed increase in leverage since the crisis; moreover many other factors than regulation affect banks' demand for corporate instruments. In addition, given that banks are not typically major holders of nonfinancial corporate equity, the impact of changes in bank regulation on the future cost of equity is likely to be negligible.

3. Financial Stability Concerns

Expanding corporate bond markets indicate a deepening and diversification of capital markets with overall benefits for funding of the real economy. However, financial stability concerns

---

[29] Basel Committee on Banking Supervision. Consultative Document. "Standards: Revisions to the Standardised Approach for Credit Risk", March 2015. Accessible at http://www.bis.org/bcbs/publ/d307.pdf

[30] The current standardised approach for credit risk is set out in Basel II: International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version, June 2006. Accessible at http://www.bis.org/publ/bcbs128.pdf.

The current risk weighting for corporate exposures using the standardised approach to calculate regulatory capital requirements is based upon the external rating of the corporate borrower with risk weights ranging from 20% for AAA to AA- rated corporates, to 150% for corporates rated below BB-. Unrated corporates – and this constitutes the vast majority of corporate borrowers – are assigned a risk weight of 100%.

In the current standardised approach equity investments in other banks are risk weighted at either 100% or 250%. However, a distinct treatment for equity issued by corporates is not prescribed (as opposed to the internal ratings-based approach, where either bank or corporate equity receive a specific treatment).

[31] The proposed rules might still be subject to substantial change since the consultative document mentioned that the Basel Committee has not ruled out introducing a limited role for external ratings (e.g. to distinguish between investment and non-investment grade) in the final version. Also, the consultative document mentioned that proposed risk weights were only for indicative purposes.

Under the proposed revisions to the standardised approach:

- The risk weighting of senior corporate borrowings (i.e. debt) are based upon two risk drivers: revenue and leverage, with indicative risk weights ranging from 60% to 130%. Exposures to firms with negative equity will be risk weighted at 300%; and,
- Equity exposures would be risk weighted 300% if the firm is publicly listed and 400% for all other firms. This approach would align the treatment for equities with that of the simple risk-weight method in the internal ratings-based approach

may arise in instances where overall debt levels are high and the credit quality of nonfinancial corporate debt has declined.

- Recent increases in corporate debt levels and lower debt-servicing capacity in certain countries have raised the sensitivity of these corporates to macroeconomic and financial shocks.[32] High private-sector debt levels can also negatively impact economic growth[33], thus potentially reinforcing recessions and hampering recovery.
- The continuing low interest rate environment may lead to excessive upward pressures on bond prices which – together with declining underwriting standards – could lead to the build-up of a "bond bubble" (and therefore at some point the risk of a sharp and disorderly reversal). There could be value in undertaking further work on the investment objectives and horizons of investors in corporate bonds in this environment.
- Given the rapid development of non-investment-grade debt markets in many countries, the sensitivity of markets to shocks may be accentuated in some instances by the lack of investor experience with the performance of lower-rated debt in credit cycle downturns.
- The strong issuance of debt in foreign currency raises another financial stability issue. While many jurisdictions and market participants are relatively sanguine about the extent of this particular risk,[34] a number of jurisdictions lack data to adequately assess the degree of any currency mismatch, including the degree to which debt-related currency exposures are hedged through other instruments. As the volume of foreign currency debt and cross-border investment in debt grows, so does the need for data on corporate hedging and other derivatives positions as well as financial statements for non-listed companies (as well as information on the extent to which companies are developing natural hedges by matching interest expense with revenues in the same currency).[35] There would be value in further investigating the potential for development of domestic corporate bond markets or more affordable hedging instruments.

Impact of debt on corporate fundamentals

After a prolonged period of extraordinarily low funding costs, a risk exists that interest rates could reverse rapidly at some point, potentially interacting with declining corporate profitability to increase the financial stress of certain corporate issuers. To some extent tighter financing conditions have already taken hold in certain emerging markets. Corporate debt levels relative to both GDP and earnings have steadily increased.

---

[32] See for example Giroud, X., Mueller, H.M. (2015): "Firm Leverage and Unemployment during the Great Recession", NBER Working Paper No. 21076, April 2015.

[33] Liu, Y. & Rosenberg, C. (2013), "Dealing with Private Debt Stress in the Wake of the European Financial Crisis", IMF Working Paper WP/13/44.

[34] For details, see Annex E.1.

[35] Letter to the G20 Finance Ministers and Central Bank Governors by IMF/FSB/BIS dated September 11, 2014. Accessible at http://www.financialstabilityboard.org/wp-content/uploads/r_140923b.pdf

In the IMF's note (Annex A), a sensitivity analysis is conducted looking at the simultaneous impact of increasing borrowing costs, declining earnings and exchange rate depreciation on EMDE corporate borrowers' "debt at risk" (which IMF defines as the debt of firms with interest coverage ratios below 1.5). This exercise finds that the combination of these shocks can lead to a material increase in "debt at risk" among EMDE borrowers, particularly in jurisdictions with high levels of foreign-currency denominated debt and fewer natural hedges (e.g. export earnings in FX).

The World Bank paper (Annex B) reinforces this point. It notes that pro-cyclical investor behaviour can have systemic implications for EMDEs once the global cycle winds down or when global shocks occur. Large foreign currency exposures raise risks, particularly for unhedged issuers, and the recent rapid strengthening of the US dollar against most EMDE currencies may already have increased strains for some borrowers. In this context, the inevitable exit from extraordinary monetary policies will tighten international funding conditions, which could prove disruptive for EMDE currencies, balance sheets, and funding capacity. Additionally, fragility in EMDEs can be further compounded by the concentration of foreign investors in their growing but still relatively shallow local financial markets.

Bank exposures

Corporate fragility can have important knock-on effects on the banking sector. First of all, as the OECD-IMF paper (Annex C) sets out, if debt is preferred over equity and debt is primarily channelled through the banking system, debt bias increases the size of bank loan books. In addition, the IMF paper (Annex A) notes that weaknesses in the corporate sector could put pressure on banks' asset quality. In particular, across a sample of 15 major EMDEs, sensitivity analysis illustrates that a 15% default on the total debt at risk owed to banks would lead to a significant deterioration in banks' buffers – defined as Tier 1 capital and provisioning – in more than half the countries. And in about a quarter of cases, these buffers would appear particularly low, when benchmarked against Basel III's minimum capital requirements (including the capital conservation buffer requirement)

In some EMDEs (as well as advanced economies) corporate deposits have increased steadily over the past few years. A BIS paper (Annex E.3) suggests that another channel of corporate spill-over on banks could be through the impact of the withdrawal of corporate deposits on local banks' funding, especially if these banks have come to rely on corporate deposits for part of their wholesale funding. Deposits from corporates exploiting the "carry" between local and foreign currency interest rates could be withdrawn if the carry positions are unwound when interest rate differentials narrow or market volatility increases. Deposits that are denominated in foreign currencies, in turn, tend to be more pro-cyclical than other types of deposits and may thus be subject to sudden withdrawals by corporates facing roll-over risks.

Debt and broader market liquidity concerns

High corporate debt levels can act on financial stability both directly through credit cycle downturns and defaults, and indirectly through market channels and mark-to-market losses. A key concern amongst policy makers is that secondary market liquidity in bond markets has declined, and that in times of stress this could exacerbate price movements and lead to outsized losses for market participants. (In such stress periods, market participants may find that they are only able to sell those of their assets that are most liquid; so, for instance, selling pressure in EMDE markets may be concentrated in larger countries with more liquid assets.)

Work done by the BIS suggests that both cyclical and structural components have contributed to this reduction in secondary market liquidity. Market-making practices have changed, putting upward pressure on bid-ask spreads and trading costs and resulting in concentration of liquidity into a narrow set of instruments at the expense of others.

From a policy perspective, however, a key question is whether the trends underway in market-making are consistent with robust liquidity at times of stress, i.e. the times when liquidity is most needed. If the trends are consistent, then the price of market-making services should rise in normal times to account for the higher costs of liquidity in bad times. Admittedly, price realignments are unlikely to prevent an exceptionally large shock from bringing financial markets to a halt. But by properly pricing liquidity risk, price realignments should encourage financial behaviour that takes market liquidity into account and does not naively rule out an eventual price collapse, especially when excesses are building up. By reducing market participants' vulnerability to ordinary liquidity shocks, this would make it less likely that such shocks could feed on themselves and undermine system-wide liquidity.

At the same time that the nonfinancial corporates have expanded their market-based borrowing, asset managers, through the investment funds they manage, have become a relatively larger part of the investor base. The potential financial stability risks emanating from the asset management industry have been discussed in the IMF's April 2015 Global Financial Stability Report. The FSB also has work underway to assess the financial stability issues related to asset management and the potential for a disorderly bond market sell-off in the current environment and will report to the G20 later this year.

Data gaps

The IMF-FSB-BIS report to G20 Finance Ministers and Central Bank Governors in September 2014 on data gaps involving foreign exchange exposures included key messages from a workshop jointly held by the BIS Committee on the Global Financial System (CGFS) and the FSB Standing Committee on Assessment of Vulnerabilities (SCAV) on currency mismatches and leverage in corporate balance sheets. The key messages of this workshop (see Annex E.1) were: that EMDE corporate leverage was rising; that increasing use of bond markets may have shifted duration risk to institutional investors; and that the unavailability of consistent granular data might mask the concentration of risk in particular sectors or institutions.

The two main data gaps identified by the workshop participants were, first, in corporate hedging activities and other derivatives positions; and second, in the availability of financial statements for non-listed companies. The workshop summary includes suggestions for a number of approaches that could help to fill these data gaps.

Structural versus cyclical factors

The financial stability concerns outlined above may have both cyclical and structural causes, as follows:

Leverage: Much of the increase in debt likely results from the very low interest rate environment, which is clearly cyclical (unless the low interest rate environment is the "new normal," in which case this could be considered structural). In addition, bank deleveraging has contributed to the increased bond issuance, and this deleveraging has both cyclical (cleaning up balance sheets post-crisis) and structural (new regulations making lending more

capital intensive) components. Other key elements behind increased leverage have been financial deepening in EMDEs and the tax advantages of debt financing, both of which are structural.

Possible asset price bubbles: This owes, in part, to investors searching for yield and moving towards higher-yielding assets. The source of the search for yield is related to the very low risk-free rates that resulted from extraordinary monetary policy and hence is cyclical. However, to the extent that the increased demand for some bonds is driven by regulation that has driven up the demand for high-quality liquid assets, there are structural elements as well.

Pro-cyclicality: If short-term investors increase their involvement in the corporate debt market, this can increase the market's vulnerability to pro-cyclicality. To the extent that money has flowed to emerging market assets as a result of a search for yield, this represents a cyclical factor.

Currency mismatch: To the extent that the currency mismatch present in some cases has been driven by the ease of issuing debt denominated in foreign currencies in the current conjuncture, this would be cyclical. However, another reason to issue debt in foreign currencies is because of a lack of depth in domestic markets, which is a structural cause.

Interconnectedness: One source of increased interconnectedness can come from a form of carry trade whereby corporates raise funds abroad and deposit those funds in the domestic banking system. This could be cyclical to the extent it is driven by a search for yield, but it also has structural causes to the extent that stable exchange rate regimes facilitate this type of carry trade. In addition, a bias toward debt financing makes firms more reliant on banks than they otherwise would be, and this is a structural cause of interconnectedness.

Data gaps: Data gaps are a structural concern, although the concern is exacerbated when debt issuance goes up, which can have cyclical causes.

4. The Potential Role of Macroprudential Policies in Addressing Financial Stability Concerns[36]

As noted in the FSB-IMF-BIS progress report to the G20 on Macroprudential Policy Tools and Frameworks[37], macroprudential policy is characterised by reference to three defining elements:

(i) Its objective: to limit systemic risk – the risk of widespread disruptions to the provision of financial services that have serious negative consequences for the economy at large.

(ii) Its scope: the focus is on the financial system as a whole (including the interactions between the financial and real sectors) as opposed to individual components (that take the rest of the system as given).

---

[36] This is based on "Staff Guidance Note on Macroprudential Policy—Detailed Guidance on Instruments" prepared by IMF staff and completed on 6 November 2014. Accessible at http://www.imf.org/external/np/pp/eng/2014/110614a.pdf.

[37] http://www.financialstabilityboard.org/2011/10/r_111027b/, 27 October 2011.

(iii) Its instruments and associated governance: it uses primarily prudential tools calibrated to target the sources of systemic risk. Any non-prudential tools that are part of the framework need to clearly target systemic risk.

To mitigate any financial stability risks from corporate liability structures, policymakers could explore the use of macroprudential tools—including tools specifically targeted at corporate credit as well as at foreign exchange risks—to complement other policy measures. Currently, most of the tools available fall under the purview of bank supervisors. The tools vary by jurisdiction, and any decisions over the use of such tools would need to take into account national economic and financial conditions, including whether the type of corporate financing (e.g. bank or market based) appear to present systemic risks.

Tools that target corporate credit

If strong growth in bank lending to the corporate sector is generating systemic risks, macroprudential authorities could consider raising capital requirements on banks' lending to firms, e.g. by increasing risk-weights on these exposures, or by imposing countercyclical capital buffers. The build-up of additional capital buffers could increase banks' resilience to corporate credit shocks, while these measures may at the same time restrain the growth in bank credit to the corporate sector. If such capital measures are not expected to be sufficiently effective in containing systemic risk, caps on the growth rate of new credit or the share of new corporate loans in total new loans could also be considered. Indirectly, when they incentivise banks to ration out less creditworthy borrowers, caps on credit growth can also help improve banks' underwriting standards.

Any use of such tools would need to be carefully assessed and calibrated. Applying broad measures on corporate credit can restrict credit growth to industry sectors that are receiving too much credit, but may also further restrict credit to industry sectors already experiencing a downturn or receiving insufficient credit. Such caps could also have spill-over effects by leading banks to increase credit instead to other sectors (e.g. the consumer sector).

Tools that target foreign exchange loans

The credit risk associated with firms with large foreign currency debts is significantly higher, particular for those without "natural" hedges. In addition, banks that lend in foreign currency can also be exposed to roll-over risks if there is a maturity mismatch with the underlying financing, e.g., if medium- or long-term foreign currency loans are financed by short-term foreign currency borrowing from abroad. To alleviate credit risks, targeted macroprudential policy measures such as higher risk-weights, and outright limits, on banks' lending in foreign currency can help, while recognizing that excessive flexibility in use of risk weights could impair predictability.[38] The extent to which these tools can differentiate effectively between hedged and unhedged corporate borrowers will depend on the availability of information and supervisory capacity. These areas should be strengthened to enable well-informed and prudent decisions regarding the risks involved in foreign currency borrowing.

If *de facto* dollarisation is widespread, other structural tools should be considered alongside tighter macroprudential measures. These would include ensuring sound macroeconomic

[38] Here, as with other type of tools, use of macroprudential measures needs to be consistent.

policy frameworks; encouraging the development of domestic financial markets in domestic currency; and a shift of public sector borrowing in foreign currency to domestic currency. Tightly calibrated macroprudential tools that may complement these measures include limits on net open position in foreign exchange; differentiated reserve requirements across currencies; or liquidity requirements differentiated by currency.

Potential leakages

As noted, most of the current tools available for addressing systemic risks arising corporate credit fall under the purview of bank supervisors. In implementing macroprudential policies in the banking sector, macroprudential authorities should be mindful of the potential leakages that could arise when corporate borrowers substitute domestic bank credit with borrowing from unregulated financial institutions or domestic capital markets (domestic leakages), as well as borrowing from abroad (cross-border leakages). These leakages can constrain the effectiveness of policies. In particular, while the intended increase in resilience for the banking sector from higher capital requirements can be preserved, leakage can make it difficult for authorities that seek to constrain the build-up of leverage in the corporate sector to effectively achieve that goal.

Containing these leakages can be particularly challenging in countries where capital markets are well-developed and where corporate borrowers have access to alternative sources of credit. Where credit is being provided by non-banks, such as dedicated leasing companies, or other non-bank finance companies, domestic leakages can be reduced by extending the regulatory perimeter to unregulated entities. (One such example of extending the perimeter would be, in the case of non-banks related to banks, expanding the scope of prudential requirements so as to consolidate such activity.) However, containing corporate leverage can be more difficult where market-based funding, such as through corporate bond issuance, is readily available. Macroprudential authorities should ensure that banks have sufficient capital to ensure resilience to corporate credit shocks, but tools need to be well calibrated; inappropriate and untimely usage of macroprudential tools to restrict corporate credit could incentivise more leakage and exacerbate the risks.

Strategies to address cross-border leakages can include reciprocity arrangements; greater host control; and in certain circumstances, targeted capital flow management measures (CFMs).[39] Reciprocity on risk weights for corporate exposures is currently not subject to international agreement, and may be difficult for countries with well-developed capital markets, but some host authorities are actively pursuing cooperation with other national authorities on the implementation of higher risk-weights and counter-cyclical capital buffers. Greater host control includes encouraging or requiring banks that are foreign affiliates to be established as subsidiaries, subject to countries' rights and obligations under international agreements including GATS and the OECD Codes of Liberalisation, in order to subject them to capital regulation and/or caps on credit growth.

---

[39] Measures that are both capital flow management and macroprudential measures can have a role in supporting both macroeconomic policy adjustment and safeguarding financial system stability in certain circumstances. These include circumstances: (i) where the room for adjusting macroeconomic policies is limited, (ii) where the needed policy steps require time, or when the macroeconomic adjustments require time to take effect, (iii) where an inflow surge raises risk of financial system instability, or (iv) where there is heightened uncertainty about the underlying economic stance due to the surge. However, such measures should not be used as substitutes for warranted macroeconomic adjustment.

The use of targeted CFMs needs to be in line with established principles ((IMF (2012); IMF (2015))[40] and OECD (2015)[41], and emphasis should be given to lengthening the maturity of corporate debt issuance and reducing the reliance on FX borrowing. As an alternative or additional measure, policies that correct the tax bias favouring debt would reduce corporate demand for credit and help mitigate the risks from excessive corporate leverage.

The need to consider benefits and costs

In implementing these measures, macroprudential authorities need to strike a balance between ensuring the effectiveness of these tools in securing financial stability, and the need to maintain the efficient provision of financial services so as not to jeopardize economic growth and development. This implies a need to calibrate these macroprudential measures carefully and in a manner that takes account of country circumstances and the phase of the credit cycle. Where stability risks are rising in the upswing of the credit cycle, macroprudential authorities should consider tightening macroprudential tools. Where these risks have receded, or financial stress materializes, these measures could be relaxed to encourage credit growth to support economic activities. To guide the calibration of macroprudential tools, bank and corporate balance sheet indicators should be used along with market and credit flow indicators.

5. Possible next steps

There is evidence that corporate debt levels relative to GDP are increasing in many countries. While in many cases this may represent welcome financial deepening, in some cases this could adversely affect financial stability. Prudential regulations are aimed at controlling the financial risks to banks from corporate exposures. Basel Committee capital standards require banks to hold capital in proportion to credit risk, and the ongoing review of the standardised and internal-model approaches aim, among other things, to improve the risk-sensitivity of current standards. Prudential supervisors also regularly require stress tests of banking assets (including for corporate exposures). Furthermore, accounting standard setters (both the IASB and US FASB) are introducing expected loss approaches to provisioning that will require more forward-looking provisions that have regard to wider macroeconomic factors. All of these changes to regulation could result in some banks being required to raise additional capital and should have the effect of mitigating potential adverse effects on financial stability that might arise via banking sector exposures to corporate loans.

However, better tools are needed to monitor for, and to address, any excessive corporate debt accumulation that may be adding to systemic risks, and there could also be value in further examining whether there are incentives that may artificially favour debt over equity and, where necessary, removing any such incentives. Possible measures that could be further discussed by the FSB and G20 Ministers and Governors include:

---

[40] IMF (2012), "The Liberalization and Management of Capital Flows – An Institutional View", November 2012. Accessible at http://www.imf.org/external/np/pp/eng/2012/111412.pdf, IMF (2015), "Measures which are Both Macroprudential and Capital Flow Management Measures: IMF Approach" April 2015. Accessible at http://www.imf.org/external/np/pp/eng/2015/041015.pdf.

[41] OECD (2015), "The OECD's Approach to Capital Flow Management Measures used with a Macro-prudential Intent" – Report to G20 Finance Ministers", April 2015. Accessible at http://www.oecd.org/g20/topics/trade-and-investment/G20-OECD-Code-Report-2015.pdf

- **Filling data gaps:** Information on corporate sector exposures, while not costless to collect, is essential for policy makers to assess the risks and develop policies accordingly. The CGFS/SCAV workshop noted that regular reporting of more consistent and granular data would enable more effective monitoring of the liability structure of the corporates, the extent of foreign currency hedging and other derivatives positions, as well as data on non-listed companies. In the meantime, supervisors should use existing data to monitor foreign currency exposures and detect emerging vulnerabilities.
- **Addressing the debt-equity tax bias**: The clear evidence of a sizeable tax bias toward debt financing raises evident financial stability concerns. While there is growing concern with the problems caused by the asymmetric tax treatment of debt and equity, the significance of this bias has not been assessed, and there is no consensus on how best to address it. The IMF/OECD paper notes that a pragmatic response to address this bias is to extend rules limiting excessive interest deductions as proposed in the G20/OECD BEPS Project, although interest limitation rules may generally be more focussed on addressing debt shifting than the asymmetry at the heart of the debt bias. While some countries have enacted an 'Allowance for Corporate Equity' (ACE), such an approach needs careful design to address concerns about revenue cost and potential for tax avoidance. In navigating these complex issues, policy makers would benefit from a careful review of the significance of tax distortions for financial stability and of the effectiveness of the different approaches that have been, or might be adopted (unilaterally or in cooperation).
- **Macroprudential policy tools to address the conjunctural factors:** To mitigate the risks presented by this rapid growth of corporate leverage, particularly in foreign currency, national policymakers should explore the use of macroprudential tools to mitigate such risks taking into account the likely benefits and costs to the financial system and different national economic and financial conditions (as described in section 4 above).
- **Potential further work in 2016:** There could be value to further work including on: i) further analysis of data on nonfinancial corporate leverage to examine the extent to which particular economic factors drive the liability structure choices of different types of corporates and whether any financial stability concerns arise from these, ii) existing country experiences with the use of macroprudential tools used to address risks arising from corporate debt financing, iii) country-specific case studies on addressing the debt-equity tax bias.

List of contributions by International Organisations annexed to this paper

A IMF paper *Analysis of Balance Sheet Risks in Emerging Market Corporates*

B **World Bank** paper *Global Liquidity and External Bond Issuance in Emerging Markets and Developing Economies*

C **IMF-OECD** paper *The role of taxation in corporate liability structures*

D **IOSCO** paper *International Policies for Public Disclosure - Corporates as Public Issuers of Debt and Equity Securities*

E **BIS** papers *Risks related to EME corporate balance sheets: the role of leverage and currency mismatch; Nonfinancial corporations from emerging market economies and capital flows;* and *Summary: Joint CGFS – FSB-SCAV workshop on risks from currency mismatches and leverage on corporate balance sheets*

Total debt by sector (excluding the financial sector)

As a percentage of GDP

Table 1

	Level in 2014				Change since end–2007[1]			
	House–hold	Corpo–rate	Govern–ment[2]	Total	House–hold	Corpo–rate	Govern–ment[2]	Total
Advanced economies[3]	*74*	*89*	*96*	*259*	*–4*	*4*	*32*	*32*
United States	78	68	88	235	–17	1	38	21
Japan	66	103	209	379	0	4	59	62
Euro area	61	103	92	257	2	6	25	33
France	56	122	95	273	10	18	30	58
Germany	55	55	75	185	–8	0	10	2
Italy	43	79	132	254	6	6	30	43
Netherlands	113	124	68	305	4	–1	24	28
Spain	73	114	96	284	–7	–8	59	44
Australia	116	75	30	221	10	–3	22	29
Canada	93	103	64	260	17	14	15	46
Hong Kong SAR	64	218	5	287	13	87	3	103
Korea	83	104	38	225	11	14	14	43
Singapore	60	80	99	239	21	24	12	57
Sweden	83	166	41	290	19	36	1	56
Switzerland	120	90	34	245	12	19	–6	25
United Kingdom	88	77	88	253	–7	–9	46	30
Emerging markets[3]	*26*	*88*	*42*	*156*	*10*	*33*	*2*	*44*
Argentina	6	10	43	59	2	0	–4	–2
Brazil[4]	25	47	62	134	12	19	–2	29
China	35	154	41	230	16	53	6	76
India	9	51	66	126	–2	9	–9	–1
Indonesia	17	22	25	64	6	8	–9	5
Malaysia[4]	68	62	53	183	13	0	11	25
Mexico	15	21	33	69	2	7	12	21
Russia[4]	19	50	15	86	8	10	5	26
Saudi Arabia	11	37	2	50	–1	4	–19	–16
South Africa	38	33	53	123	–4	–1	20	16
Thailand	68	50	30	148	23	4	7	34
Turkey	21	51	34	106	10	27	–8	29

[1] In percentage points of GDP. [2] BIS Credit to the government at nominal values except for Korea for which only market values are available. [3] Weighted averages of the economies listed based on each year GDP and PPP exchange rates. [4] Breakdown of household debt and corporate debt is estimated based on bank credit data.

Sources: IMF, *World Economic Outlook*; OECD; national sources; BIS database on total credit.

Total debt by sector (excluding the financial sector)

As a percentage of GDP

Table 2

	Level in 2014				Change since end–1999[1]			
	House–hold	Corpo–rate	Govern–ment[2]	Total	House–hold	Corpo–rate	Govern–ment[2]	Total
Advanced economies[3]	*74*	*89*	*96*	*259*	*14*	*9*	*34*	*56*
United States	78	68	88	235	13	7	40	59
Japan	66	103	209	379	–8	–27	103	68
Euro area	61	103	92	257	13	22	19	54
France	56	122	95	273	22	31	33	86
Germany	55	55	75	185	–15	2	14	1
Italy	43	79	132	254	23	27	19	69
Netherlands	113	124	68	305	39	3	5	51
Spain	73	114	96	284	33	48	33	114
Australia	116	75	30	221	50	13	9	73
Canada	93	103	64	260	31	11	–12	30
Hong Kong SAR	64	218	5	287	6	108	5	119
Korea	83	104	38	225	36	–3	28	57
Singapore	60	80	99	239	23	6	13	41
Sweden	83	166	41	290	37	70	–24	83
Switzerland	120	90	34	245	14	11	–16	11
United Kingdom	88	77	88	253	22	9	46	76
Emerging markets[3]	*26*	*88*	*42*	*156*	*17*	*39*	*–15*	*37*
Argentina	6	10	43	59	0	–10	9	–1
Brazil[4]	25	47	62	134	16	20	5	41
China	35	154	41	230	25	56	3	84
India	9	51	66	126	3	28	–4	27
Indonesia	17	22	25	64	…	…	…	…
Malaysia[4]	68	62	53	183	…	…	15	–17
Mexico	15	21	33	69	6	0	11	17
Russia[4]	19	50	15	86	18	22	–99	–54
Saudi Arabia	11	37	2	50	3	9	–101	–89
South Africa	38	33	53	123	6	5	–1	7
Thailand	68	50	30	148	19	–45	11	–24
Turkey	21	51	34	106	19	29	–9	–20

[1] In percentage points of GDP. [2] BIS Credit to the government at nominal values except for Korea for which only market values are available. [3] Weighted averages of the economies listed based on each year GDP and PPP exchange rates. [4] Breakdown of household debt and corporate debt is estimated based on bank credit data.

Sources: IMF, *World Economic Outlook*; OECD; national sources; BIS database on total credit.