

Secretariats

11 September 2014

## Summary: Joint CGFS – FSB-SCAV workshop on risks from currency mismatches and leverage on corporate balance sheets

Hong Kong Monetary Authority (HKMA); Hong Kong SAR; Friday 20 June 2014

### Outline

On 20 June 2014, the CGFS and FSB-SCAV co-organised a workshop with public and private sector participants at the Hong Kong Monetary Authority to gather views on current trends affecting corporate balance sheets in emerging market economies (EMEs).<sup>1</sup> Its main aim was to help CGFS and SCAV members develop a common understanding of the analytical needs for the assessment of related vulnerabilities. Specifically, the objectives were to: (1) explore the channels through which corporate balance sheets can pose financial stability risks; (2) provide an initial assessment of current vulnerabilities (based on the available data, eg using country case studies or similar analyses); and (3) gather ideas for ways to address data gaps, including enhanced disclosures, stress tests and other data-gathering efforts.

The workshop was organised in three sessions, followed by a final discussion to summarise the key observations. The first two sessions featured case studies (supplied by Brazil, China, India, Mexico, Turkey as well as the IMF), focusing on experiences gained with monitoring corporate balance sheet risks in individual jurisdictions. The third session involved private sector participants from both the buy and sell side of the market (such as credit and rating agency analysts, corporate bankers, asset managers and accountants, mostly covering the Asian region), providing a broader perspective. The discussions during the various sessions are summarised below; the last section reports the key findings and possible follow-up options identified during the final workshop session.

### Summary of discussion

#### Case study sessions

All six case studies highlighted that borrowing by non-financial EME corporates (NFCs) is on the rise, both domestically and from foreign sources. Issuers generally benefited from a deepening of domestic financial markets, while channels for foreign funding differed across jurisdictions. In some countries, such as Mexico, corporates increasingly resorted to direct issuance of foreign debt. In other jurisdictions, where corporates do not have direct access to external bond markets (either due to prohibitive costs or regulation), foreign borrowing of NFCs is

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<sup>1</sup> The workshop was co-chaired by Eddie Yue (HKMA) and Ismail Momoniat (South African Treasury).

intermediated mostly by banks. This is, for instance, the case in Turkey. In yet other jurisdictions, such as Brazil, China and India, corporates often draw on foreign bond market funds through offshore subsidiaries and special purpose vehicles.

**Assessing broad trends.** The average level of NFC debt in major EMEs is estimated at about half of GDP, with significant variation across jurisdictions. While this compares favourably with the levels observed in many advanced economies, growth rates are high and many borrowers have recently accessed bond markets for the first time. Several workshop participants pointed to record issuance of new corporate debt in their jurisdictions and, in some cases such as Turkey, to sizeable shares of corporate liabilities denominated in foreign currencies. Participants generally agreed that the combination of low yields in international debt markets with strong demand from international investors was the main driver behind the recent rapid growth in corporate borrowing, particularly in terms of foreign currency debt. For Mexican corporates, for example, the cost advantage relative to issuing domestic debt is apparently significant even when currency swap spreads are taken into account.

There was general agreement that an assessment of current trends using aggregate, macroeconomic data would tend to understate risks. For example, credit-to-GDP ratios are not particularly elevated for most EMEs, ratios of short-term to long-term debt seem relatively stable, and country fundamentals are often healthy, suggesting that risks at the aggregate level are limited. Yet, aggregate data can often mask risks accumulating at the sectoral level and are subject to known biases (eg due to their reliance on the residency principle; see below), necessitating the use of more granular data in coming to an overall assessment.

Therefore, most case studies focused on risk assessments using firm-level data combining different risk metrics (eg debt to GDP, debt-to-EBITDA, share of foreign currency liabilities, debt maturity structure), often supplementing basic statistics with scenario analyses of interest rate and foreign exchange risks.

**Leverage-related risks.** Higher indebtedness can raise rollover risks, debt service burdens, and balance sheet sensitivity to interest rate changes. Even though the recent increase in borrowings has meant that upcoming maturities have significantly increased in select jurisdictions, representatives broadly judged rollover risks to be limited at the current juncture. In many cases, the maturity of corporate liabilities has been lengthening, and the share of long-term debt is growing faster relative to earnings than that of short-term debt. Still, some parts of the corporate sector continue to have shorter-dated liability profiles, which may expose them to risks once the current funding environment changes. Longer debt maturities, in turn, translate into higher duration risks for investors, which were mentioned as a potent amplification mechanism in case of shocks.

There was greater degree of disagreement concerning corporate debt service ratios and exposure to interest rate risk. While, despite fast debt growth, risk assessments within a number of individual jurisdictions pointed at stable debt service ratios, one case study cited evidence that the debt service ratios of many EMEs have been deteriorating, judging by the rising net debt-to-EBITDA ratios. Similarly, while several representatives judged interest rate risk facing corporates in their jurisdictions as limited (referring, eg, to fixed rate coupons for the majority of outstanding foreign bonds), cross-country comparisons suggest that net interest

rate expenses have broadly gone up, despite the current low interest rate environment (Graph 1, left-hand and centre panels).

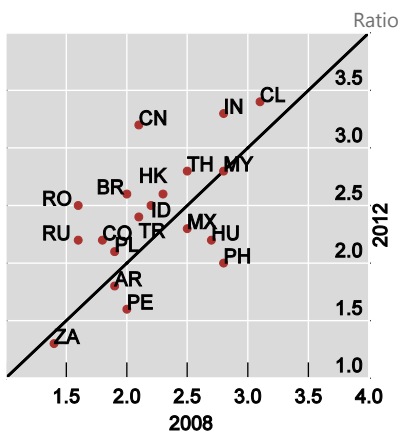
In general, the risks associated with corporate leverage were judged to be greater when the assessment relied on firm-level data, taking the distribution of losses and, hence, sectoral differences or other relevant dimensions into account. This is in line with broader evidence, suggesting that leverage may be concentrated in particular sectors (eg the more cyclical ones) and in the weaker part of the corporate spectrum (Graph 1, right-hand panel). Such concentrations can be an issue particularly in those sectors where corporate profitability may have peaked or which have been experiencing a sustained run-up in prices (eg real estate).

## Leverage, interest rate expenses and distribution of debt at risk

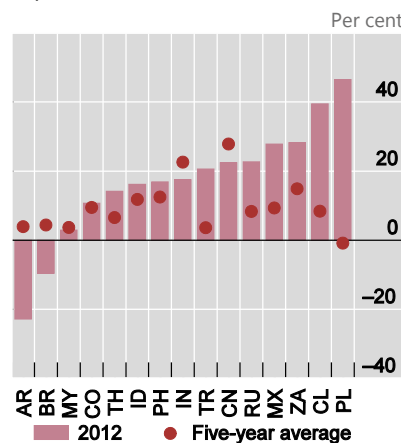
Cross-country comparison

Graph 1

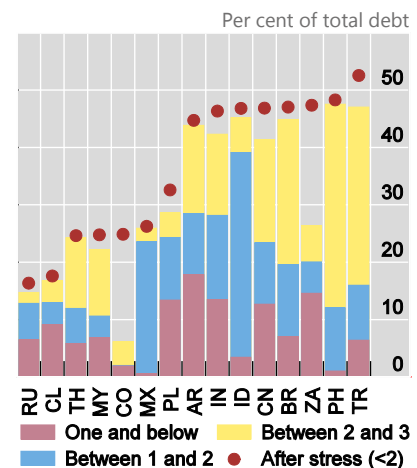
Net debt-to-EBITDA ratio



Growth rates (yoy) of interest expenses



Distribution of debt-at-risk by ICR<sup>1</sup>



<sup>1</sup> As a share of total debt; ICR = interest coverage ratio. The red dots indicate (as a share of total debt) the debt held by firms with ICR < 2 if interest service costs were to rise by 25%.

Source: IMF.

**Currency mismatches.** Workshop participants were less concerned about exchange rate risk, at least when taken in isolation. The development of local currency bond markets, particularly in Asia, reduces the need for foreign currency borrowing for many companies. Furthermore, while both domestically and internationally financed leverage seem to have risen (Graph 2, left-hand panel), in many jurisdictions foreign currency borrowing appears to be done in large part by firms from sectors with natural hedges (see, eg, Graph 2 centre and right-hand panels). In some cases, these appear to be supplemented with financial hedges, even though firm-level data on the use of these hedges are scarce (see below).

Some of the relatively benign country views on foreign exchange risks were corroborated by scenario analyses based on firm-level data. For example, using balance sheet information for listed companies, several countries reported analyses of projected losses (as a percentage of EBITDA or total equity) due to a given large-scale currency depreciation under alternative assumptions about natural and financial hedging ratios. A key result from these analyses is that the shocks needed

to generate significant projected losses appear to be relatively large.<sup>2</sup> Still, the impact of correlated shocks, such as the joint effect of interest rate changes and, exchange rate volatility, coupled with disruptions in bond market access, are more difficult to analyse, which may bias the results.

Overall, subject to data availability issues, country authorities typically found truly unhedged corporates to be a small part of their corporate universe (ie in terms of total corporate debt). Even so, they noted signs that unhedged borrowing is clustered in particular sectors, which may raise concentration concerns.<sup>3</sup>

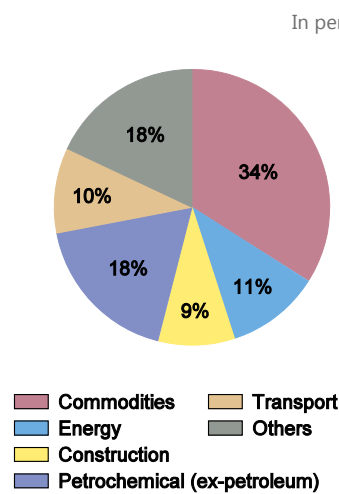
## Leverage of corporates active in international capital markets and distribution of borrowers by sector in selected economies

Graph 2

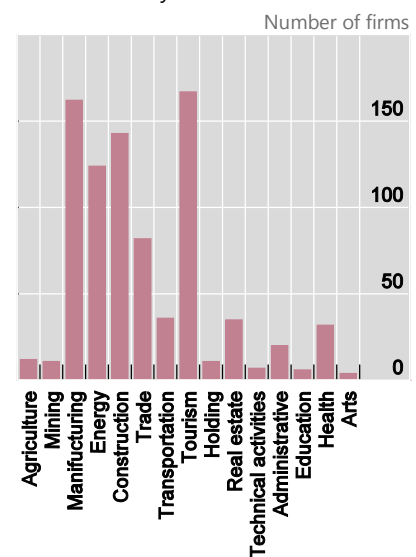
Leverage of publicly listed firms in Mexico



Sectoral distribution of unhedged FX debt in Brazil



Sectoral composition of high-risk firms in Turkey<sup>1</sup>



<sup>1</sup> Firms that are categorised as having relatively low exports/high FX liabilities; size of FX revenues will differ according to sectors.

Source: Central Bank of Mexico; Central bank of Brazil; Central Bank of Turkey.

**Sectoral interactions.** Interactions between the corporate and other sectors of the economy received relatively little coverage during the discussions, in part because related risks are very difficult to analyse with the available data. Participants noted, however, that the degree of bank involvement in both domestic and external financing of EME NFCs remained large across jurisdictions. Domestic as well as foreign banks and their subsidiaries also remain key counterparties to EME corporates in derivatives markets, with some local banks depending on corporate deposits for part of their funding. Standard metrics suggest that EME banks tend to have relatively good loss-absorbing buffers, which may explain why workshop participants assessed the risks for their respective banking sectors to be rather contained. There was agreement, however, that weaker borrowers tend to interact with weaker banks, pointing to potential vulnerabilities at individual institutions.

<sup>2</sup> For example, a scenario analysis of Indonesian corporates estimated that only nine out of 85 assessed firms would face solvency issues if the rupiah was to depreciate by 41%.

<sup>3</sup> In response, jurisdictions, such as India, have tightened their regulatory requirements on bank lending to unhedged corporate borrowers.

Finally, it was acknowledged that bond market financing has grown in size across EMEs, raising the importance of asset managers and other institutional investors in the transmission of shocks as well as related spillover risks.

**Data availability.** Workshop participants agreed that granular data on financial statements for listed corporates were generally available from a variety of commercial sources as well as public disclosures. Data gaps, therefore, affect predominantly unlisted firms, even though inconsistencies across data sources and a lack of standardisation in public disclosures can complicate analysis even for listed firms. Several participants pointed out that, although listed companies represent only a fraction of the firms in their jurisdictions, their share in cross-border business and foreign funding markets tends to be large.<sup>4</sup> Yet, this does not exclude the possibility that the listed universe may represent only a very small share of estimated total domestic and international debt in some country cases.

In addition to public sources, some jurisdictions were able to obtain granular balance sheet information on NFCs from their own reporting systems (eg through the supervisory reporting of their banks), including for part of the unlisted sector. For example, the Central Bank of Turkey presented results based on corporate balance sheet data for more than 9,400 firms. However, some workshop participants noted that collection of NFC data can raise serious legal issues for central banks, as it may be outside their existing data-gathering mandates. Several participants also indicated that in their jurisdictions central banks would face restrictions on the scope of data collection as well as confidentiality issues; therefore, some form of collaboration with national statistical authorities or other agencies would be necessary to gather more granular data in practice.

Data availability is more problematic in the area of derivatives-related information, as public disclosures on hedging practices and the use of derivatives are not standardised, and therefore cannot be turned into quantifiable metrics for financial stability assessment purposes. Even so, individual jurisdictions have managed to generate useful information at the aggregate (ie via surveys) or micro levels (ie from derivatives exchanges). For example, the Reserve Bank of Australia (RBA) collaborates with the national statistical authorities to augment their quarterly balance of payments data collection (every four years) with quantitative questions on the foreign currency exposures and derivatives positions of financial and non-financial institutions. Based on the survey results, the RBA is able to monitor the aggregate currency composition of the country's external position and banks' hedging of foreign currency debt liabilities. However, several shortcomings of this approach were also discussed. These include a lack of consolidated information, because the data are collected on a residency basis, and restrictions on the use of the granular, firm-level survey responses (for confidentiality reasons).

Examples of jurisdictions with access to micro-level data through derivatives exchanges or dealer networks include Brazil and South Africa.<sup>5</sup> In Brazil, two clearing houses handle derivatives transactions and provide derivatives registry services,

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<sup>4</sup> For example, while publicly listed firms in Turkey represented only about 3% of the number of firms for which the central bank has granular data, they accounted for about half of all assets and export volume. Similarly, listed firms in Mexico reportedly accounted for approximately 90% of international bond issuance by Mexican non-financials during the 2009–13 period.

<sup>5</sup> Some jurisdictions also pointed out that data which used to be gathered for capital control purposes could also be useful to monitor corporate balance sheets; hence it may be worthwhile to keep such data collections in place even after the controls have been relaxed or dismantled.

which allow banks to collect information on the derivatives exposures of their clients. One shortcoming of the Brazilian registry is that data on offshore derivatives activity (ie derivatives with non-resident banks) are not or, at best, are only partially covered.

Overall, it was apparent that information from a variety sources can typically be combined to allow for basic sensitivity analyses, including those of interest or exchange rate shocks. Yet, participants also pointed to consistency issues across data sources, highlighting that data validation can be a challenge. In addition, a recurring theme was that aggregate data often suffer from residency bias in that they fail to capture the activities of offshore vehicles and subsidiaries.

## Roundtable discussion

The views of market practitioners during the roundtable discussion broadly supported those from the country case studies. Overall, participants agreed that EME corporate leverage was growing to varying degrees across jurisdictions in Asia (just as in other regions). There was also agreement that borrowing had taken place predominantly in domestic currencies. Thus, interest rate and rollover risks were seen as the more relevant issues for EME corporates, with currency mismatch regarded as a lesser concern. In terms of outstanding currency exposures, while market practitioners acknowledged that shallow hedging markets tend to make financial hedges less attractive (as they will tend to eat up any foreign currency funding advantage), they also suggested that issuers typically have natural hedges in place, which would seem to mitigate any foreign exchange risk.

As already highlighted during the earlier sessions, market practitioners also acknowledged the importance of sectoral differences and the existence of “pockets of risk”, such as in property-related sectors and with regard to the use of derivatives. Overall, therefore, they felt that growing leverage as well as maturity and currency mismatches may cause EME corporates to be increasingly vulnerable to sharp (and correlated) adjustments in interest rates and exchange rates. The exact size and repercussions of these effects, however, remained hard to assess.

In terms of data availability, private sector participants underscored the lack of granular data, particularly for unlisted firms, and how this affects their ability to assess the full array of firms’ currency risks (unless a direct client relationship is in place). They also highlighted that national balance of payments data do not typically enable the identification of debt raised offshore, and that such offshore borrowing is important in jurisdictions such as Brazil, China, Russia, and Turkey.<sup>6</sup>

**Corporate leverage.** Market practitioners highlighted the significant growth in Asian corporate debt since the global financial crisis, spurred by very low interest rates and generally positive, though moderating, economic growth. While local currency debt markets have deepened in Asia, dollar-denominated borrowing has also increased, reflecting lower funding costs than in local markets and, in some jurisdictions, an expectation of currency appreciation on the part of corporate issuers (see below).

In terms of overall leverage trends, analysts noted that EME corporate leverage was on the rise in terms of a variety of balance sheet and income statement metrics

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<sup>6</sup> In addition, in making sectoral assessments, debt issued by SPVs and similar entities may have to be reclassified according to the sector of the ultimate issuer to avoid the associated leverage risk to be allocated to the non-bank financial sector.

(eg debt-to-assets, debt-to-equity, debt-to-earnings, and interest coverage ratios) as well as in broad economic terms (debt-to-GDP). However, in most jurisdictions, corporate leverage metrics remain below those of advanced economies, even though there are signs of weakness at the sectoral level (eg in Brazil, China, India and Indonesia). For example, the growing leverage of part of the Chinese corporate sector, in particular property developers, was mentioned by several workshop participants. It was noted that the lack of foreign currency revenues and the absence of hedging may leave such agents with large currency mismatches, while short maturities and less reliable sources of funding (eg via the shadow banking sector) may increase their vulnerability to rollover risks. Such risks would be highest for unlisted and unrated property developers that provide little financial information, do not have sophisticated risk management and suffer from concentration risk on property markets of third- or fourth-tier cities. (Yet, private sector participants also highlighted that they perceived high levels of foreign exchange reserves as an ultimate backstop for corporate sector risks at the aggregate level).

Instrument choice, in turn, has become more selective, amid signs that deal structures may be getting riskier. Hybrid equity/debt products (such as perpetuals), for example, are used to more actively manage leverage metrics, which may conceal the true extent of leverage in some sectors. At the same time, weaker loan covenants appear to be proliferating at a time when the sheer volume of issuance may be starting to stretch the due diligence capabilities of even the larger institutional investors. In this context, analysts highlighted the emergence of structures utilising “keep-well agreements” from the parent company to reassure holders of the structurally subordinated debt issued by offshore subsidiaries; such commitments remain essentially untested, as bankruptcy cases are rare. In addition, there was mention of guarantees or stand-by letters of credit provided by domestic banks to facilitate offshore borrowing through subsidiaries or special purpose vehicles.

**Currency mismatches and hedging.** Private sector participants generally suggested that they were less concerned over currency mismatches relative to leverage, while acknowledging that, at the firm level, they often had only limited information on actual currency exposures, terms of hedging, and counterparties. Still, overall, the more active foreign currency borrowers appeared to come from sectors generating foreign currency revenues (providing natural hedges), such as exporters and commodities firms. An exception is property-related sectors, where revenues are typically in local currency.

However, workshop participants also noted that shallow hedging markets and associated hedging costs as well as complicated hedge accounting rules can reduce corporates’ inclination to hedge. They also highlighted the role of currency regimes in setting borrowing incentives and noted that capital controls can raise the attractiveness of unhedged foreign currency funding (including for speculative purposes) for those corporates that are able to issue internationally (eg through offshore vehicles). In this context, recent cases of over-invoicing in Chinese trade finance markets were seen as evidence for speculative, carry trade-type corporate activities. There was also some disagreement over how far Asian corporates are

using the more exotic, structured hedging instruments (such as KIKO products),<sup>7</sup> which have led to financial stability concerns in the past.

**Data challenges.** Market participants highlighted two key challenges with regard to data availability. The primary data gap arises from the significant lack of information on leverage and currency hedging of unlisted corporates. A second data challenge is the qualitative nature and inconsistency of public company disclosures of currency risks and hedging. While commercially available information was the primary source used to assess such risks, data on the nature and comprehensiveness of actual hedges were lacking. In Asia, for example, hedge accounting as such is not yet commonly adopted because corporates reportedly find the relevant rules complex and difficult to apply. However, the expected issuance of the new accounting standards on financial instruments by the end of 2014 should make it easier to apply hedge accounting and hence may help promote a wider adoption of hedge accounting and related disclosures in the region. More broadly, for the majority of corporates that have not adopted IFRS, hedging disclosure is generally weak. Any enhanced reporting, therefore, would need to include more detail on types and maturities of derivatives, counterparties, and the extent to which hedging aims to mitigate currency (and interest rate) risks.

## Key messages

The key messages from the workshop can be summarised as follows:

### Current assessment

- **Rising leverage.** Participants generally agreed that EME corporate leverage was on the rise, both through bank borrowing and debt issuance. Based on the available data, leverage (and associated interest rate and rollover risks) were assessed to be a more important issue than currency mismatches. Overall, EME authorities seemed to be largely aware of the relevant risks and had stepped up their monitoring activities, albeit to varying degrees in different countries.
- **Pockets of risk.** While the overall assessment was relatively benign, participants also acknowledged that this view may change if present trends toward increased leverage were to continue. They also noted that aggregate data can understate risks in particular sectors or at individual corporates. For example, firm-level data showed that, in some jurisdictions, growth in foreign currency borrowing has been concentrated among riskier firms and sectors, including property developers in countries such as China. Such “pockets of risk” put a premium on more granular analysis, but detailed data (eg from income statements) are often unavailable, particularly for non-listed firms.
- **Amplification effects.** In addition, while the recent increase in the maturity of corporate external liabilities was seen as a mitigant for rollover risks, there was less discussion concerning the flip-side implications for duration risk and the associated amplification effects from the behaviour of buy side investors. In this context, the recent shift in the composition of external funding from banks to

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<sup>7</sup> “Knock-in-knock-out” (KIKO) contracts use option features to insure their users against modest exchange rate movements, while exposing them to potentially large losses if the local currency depreciates sharply – a feature that reduces hedging expenses at the cost of retaining the tail risk of stronger currency depreciations.



bond market sources may have shifted duration risk to institutional investors, which may result in greater bond market volatility and amplify market reactions to any disruptions.

### **Data availability and gaps**

- **Data availability.** There was agreement that granular data on corporate financial statements are available from a variety of sources, including commercial vendors. In addition, in some jurisdictions, balance sheet data can be obtained from countries' own reporting systems (eg banks' supervisory reporting), at least for listed firms. Combined with information from other sources, such information allows for basic sensitivity analysis, including that of interest or exchange rate shocks. Consistency across data sources, however, remains an issue, implying that data validation can be a challenge and that simplifying assumptions may be needed to cover for missing information.
- **Derivatives positions.** Data gaps were identified mainly in two areas. The first is corporate hedging activities and other derivatives-related positions. Three different approaches were suggested to improve data availability. The first would be enhanced disclosures of financial hedges via improved accounting standards (eg providing detailed currency and maturity information on financial hedges and their underlying positions, including those not qualifying for hedge accounting). The second approach would follow the Australian example and collect information on corporate hedges in the context of existing BOP data surveys, leveraging the existing statistical infrastructure and legal reporting requirements in this area (possibly based on a common template across countries). The third response, in turn, would follow the Brazilian example and seek to obtain information on outstanding derivatives positions directly from trade repositories and central counterparties (possibly also on a cross-border basis to capture off-shore derivative activities).<sup>8</sup>
- **Non-listed firms.** The second data gap is financial statements for non-listed companies. While some countries do have information on non-listed firms and standard databases tend to cover the sector at least to some extent (ie those companies that issue debt in public markets even though they are not listed on the stock market), coverage is much less complete than for larger, listed companies. Workshop participants proposed a variety of measures that could be taken to alleviate this problem. One is country-level surveys of consolidated corporate balance sheet positions, focusing specifically on the sectoral, currency and maturity breakdowns of external debt.<sup>9</sup> In addition, given that unlisted firms are more likely than their listed peers to depend on bank financing, information obtained through banks (eg through supervisory channels) may be a viable way forward for some jurisdictions.

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<sup>8</sup> International workstreams exist in all three of these areas, suggesting that any follow-up work could possibly be addressed via BOPCOM (BOP surveys), standard setters such as IOSCO (enhanced disclosures), and the FSB AFSG initiative (options for aggregating trade repository data).

<sup>9</sup> Such surveys would be implemented at the national level, but could benefit from international coordination (eg via the G20 data gaps initiative) to improve the consistency and comparability of the reporting templates.