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PLAYING WITH FINANCIAL FIRE: A SOUTH PERSPECTIVE ON THE INTERNATIONAL FINANCIAL SYSTEM

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PLAYING WITH FINANCIAL FIRE: A SOUTH PERSPECTIVE ON THE INTERNATIONAL FINANCIAL SYSTEM

Playing with Fire (PWF) is a continuation of the analysis of the integration of Emerging and Developing Economies (EDEs) into the international financial system which Yılmaz Akyüz has carried out in his roles as senior economist for many years responsible for UNCTAD's *Trade and Development Report* and Chief Economist at the South Centre[2]. The treatment covers cross-border financial flows, increased commercial presence of foreign financial institutions in EDEs and their increased participation in their local financial markets as well as policy and regulatory issues. PWF deploys data on major cross-border financial flows on a gross as well as a net basis. This innovative approach facilitates identification of financial stability issues posed by the increased participation of EDEs in international financial markets.

The reflections which follow do not cover all the subjects raised in PWF's wide-ranging analysis. They concentrate on the discussion of the overall context of financial integration of EDEs, the progress of this integration, the continuing exposures to financial instability, and PWF's conclusions regarding policy and regulation.

These policy conclusions are linked to the discussion of changes in financing linked to the liberalisation and progressive opening-up of EDEs' financial markets to non-residents. Of special importance here are continuing vulnerabilities to credit and foreign exchange risk. These have been modified by the changing distribution of the parties exposed to the risks and of the instruments which give rise to them.

There is also brief discussion of the current regulatory agenda for banks. Despite the changes in the character and incidence of credit and foreign exchange risk the prudential regulation of banks' exposure to foreign exchange risk remains an important part of the picture and arguably merits more extended attention than it receives in PWF.

The first part of the commentary which follows focuses on PWF's treatment of the process of financial liberalisation, the problems which it has created, and the shortcomings of policy responses and of the reform agenda. The second part of the commentary is a more detailed review of aspects of prudential regulation in the policy response with special attention to its treatment of foreign exchange risks. This review reinforces the conclusion of PWF that, while the proposed regulatory reforms will render the financial system more robust, their role in the control of financial instability is subject to limitations. The more detailed examination here none the less highlights major features of foreign exchange risk and continuing shortcomings of the existing and proposed regulatory rules for banks' exposures to it.

[2] Yılmaz Akyüz, *Playing with Fire Deepened Financial Integration and Changing Vulnerabilities of the Global South*, Oxford, Oxford University Press, 2017, ISBN 978-0-19-879717-3.

The GFC and policy response in AEs

Inevitably an important part of the backdrop of PWF's analysis is the global financial crisis (GFC) and the misguided policy response in Advanced Economies (AEs). After a brief period of reliance on expansionary macroeconomic policy which emphasised support of aggregate demand and employment, governments proved unwilling to grasp the nettle of dealing directly with the huge debt overhang due to the excessive leverage of the balance sheets of both banks and other enterprises accumulated during the boom preceding the GFC. They relied instead on measures which bailed out creditors while imposing austerity on debtors. Refusing to make use of the expansionary potential of fiscal policy, governments had recourse to unconventional monetary policies for macroeconomic management and to official financing with onerous conditions to avoid debtors' defaults. This policy stance failed to provide the needed boost to growth, while increasing inequalities through its effects in boosting the value of financial assets largely held by the rich minority and on its own doing little to reduce financial fragility. Moreover EDEs, though benefiting from stronger fiscal positions than during previous crises since the 1980s, were still vulnerable to shifts in macroeconomic policies in AEs.

Waves of external financing and the structure of EDEs' liabilities

The boom in external financing of EDEs of the new millennium was the third since the 1970s: the first began in the 1970s and ended in 1982 with a debt crisis in Latin America; the second began in the early 1990s and culminated in crises in East Asia, Brazil, Russia, Turkey and Argentina; and that of the new millennium experienced a hiccup at the time of the collapse of Lehman Brothers in September 2008 (generally considered to have been the beginning of the GFC proper) but then resumed and had yet to reach a well defined halt by 2013, the closing date of PWF's systematic coverage of developments.

The first of these booms was associated with a major increase in cross-border bank lending. The distribution of different categories of debtors' external liabilities was somewhat more varied during the second boom. What distinguished this phase was a widespread movement towards financial liberalisation and the opening-up of capital accounts which was not yet accompanied by correspondingly strengthened financial regulation.

The most recent boom has been associated with a much deeper integration of major EDEs into the global financial system. This integration has several manifestations: an increased share of direct and portfolio investment in external liabilities; an increasingly important role for bond issues as opposed to international bank lending in the borrowing of both public and private sectors; a shift by international banks from cross-border to local lending with the latter often in local currencies; acceleration of external borrowing by the private sector in EDEs, much of which is still denominated in foreign currencies; and an increase in non-residents' holdings of sovereign debt issued in local financial markets and denominated in local currencies.

These shifts have accompanied corresponding shifts in the composition of different categories of liability in national balance sheets and increases in the proportions of these

liabilities held by non-residents. The control of money markets and the management of foreign debt have been complicated by opacity regarding the identity of the ultimate holders of these liabilities and by blurring of the distinctions between different financial instruments. The identity of holders is viewed as likely to affect the volatility of holdings, and the blurring of distinctions between financial instruments makes more difficult overview of liquidity and currency denominations in the financial sector. The opacity has implications for the regulation of money markets and of foreign exchange exposure. It also magnifies the challenges for risk management at firm level, particularly at the level of banks.

Evolution of financial risk

New external financial liabilities during the first lending boom took principally the form of cross-border bank financing. Much of this financing was in the form of medium-term Eurocurrency lending, a relatively recent innovation which enabled the transformation for banks of short-term liabilities into longer-term loans through adjustments in the interest rate on the latter.

Various changes in the pattern of financing, many of them associated with the widespread application of innovations, preceded the crisis which followed the second lending boom. For example, the increased recourse to securitisation of banks' assets began to lead to a blurring of the distinction between bank lending and financing through the capital markets. Moreover off-balance-sheet items such as interest-rate and currency derivatives and forward rate agreements as well as other contingent liabilities began to assume greater importance in banking operations. Off-balance-sheet items were associated with reduced transparency in banks' financial reports for both supervisors and investors with the result that identification of financial risks in banks' operations became more difficult for both. Some of the cross-border shifts in financing and some of the pricing of financial instruments during the crisis following the second lending boom were not anticipated nor necessarily well understood. This was also the period when the attention of regulators began seriously to focus on macroprudential risks, i.e. those due to correlated financial failures and to insolvencies of institutions with systemic economic significance, both of which were capable of threatening payments mechanisms and other aspects of the broader financial system.

By the opening of the new millennium cross-border international financial integration was more deeply rooted and more pervasive. This reflected pressures from financial markets themselves in which lenders and investors generally preferred more open financial markets and greater freedom for their operations. It was also due to pervasive regulatory and intellectual capture of policy makers and analysts concerning the virtues of liberalised financial markets as vehicles for resource allocation and macrofinancial management. In a few EDEs a role was also played by conditions attached to lending programmes of multilateral financial institutions.

PWF's major findings concerning changes in the structure of external financing

The challenges for policy of new levels of financial integration have resulted not only from the sheer scale of international financing but also from the instruments and actors involved. Neither can be described in isolation from the other. The focus on gross rather than net assets and liabilities in PWF enables fuller analysis of the component determinants of fluctuations in financial flows and debt stocks. This focus facilitates the disaggregation of assets and liabilities by different liquidity and maturity characteristics and by the different economic actors who contribute to observed financial outcomes. By contrast the more traditional focus on net financial flows to EDEs conceals features important to understanding recent developments such as the continuous rises in both gross and net liabilities. It also results in insufficient attention to the effects of increases in the presence of foreign economic actors in the local markets for debt and equity in EDEs and of foreign direct investors in the markets for goods and services. These, PWF convincingly argues, can be adequately identified only through disaggregated analysis.

Study of financial flows to EDEs in the form deployed in PWF highlights several important features of the increased integration in cross-border finance. The expanded participation of foreign actors has resulted in a situation where local equity and bond markets are now more internationalised as measured by the holdings of foreign actors than are these markets in some AEs. The distribution of external liabilities shows several shifts. The share of debt securities has risen relative to that of bank loans; the liabilities of the private sector have increased faster than those of the public sector; and sovereign external liabilities in local currencies have expanded in relation to those denominated in reserve currencies. On the asset side EDEs' official reserves have increased not only absolutely but also in relation to privately held foreign assets as a result not only of surpluses on current account but also capital inflows. The increase in reserves reflects self-insurance against the procyclical behaviour of international financial markets to which the EDEs are now more exposed.

The blurring of the distinctions between domestic and external debt which has resulted from the new patterns of financing has complicated analysis of countries' financial vulnerability to changes in external conditions, and can also affect the accuracy of debt statistics. Lack of clarity as to the identity of holders complicates differentiation in terms of governing law[3]. Thus paradoxically debt owed by governments to their own nationals can be part of external debt denominated in foreign currency, and debt owed to foreigners can be subject to local jurisdiction and denominated in foreign currency.

These features of financial integration have implications for financial stability. The increased dependence of EDEs' domestic bond markets on foreign investors and on domestic investors that take positions in international markets can result in significantly less control over domestic interest rates. The internationalisation of EDEs' bond markets has created the potential for destabilising feedbacks between a country's bond and currency markets. A stop

[3] The sort of problems to which differences in the coverage of cross-border financial statistics can give rise are illustrated by remarks concerning estimates of Foreign Currency Credit (FCC) in a recent BIS publication. Current FCC estimates refer to borrowing by a country's residents rather than by its nationals. Thus foreign currency debt incurred by offshore affiliates is not reallocated to the country in which the parent company is headquartered. This may underestimate FCC in EDEs where there is increasing use of foreign affiliates to issue debt securities and then to repatriate the funds raised back to their home country (BIS: 28-30).

in capital inflows leading to a depreciation of the currency can trigger an exit from local bond markets, pushing bond prices downwards and thus interest rates upwards. The exit and the depreciation can then snowball as unhedged corporate debtors buy dollars to cover their obligations. Since the onset of the GFC there have been episodes of simultaneous declines in both bonds and currencies in response to stress in international financial markets. Similar feedbacks have also been witnessed between prices in EDEs' equity markets and the levels of their currencies. FDI can also be procyclical.

Flaws in current policy responses

The orthodox response to the challenges to financial stability due to the changes in the structure of external financing has emphasised a number of policy options, all of which have limitations pointed to by PWF.

1. Flexible exchange rates to absorb shocks to capital flows. While these can help for small moves in exchange rates, they are less effective as a means of coping with sustained surges which in the case of resulting currency appreciations can undermine industry and exports, and in the case of depreciations can force economic contraction and financial meltdown.
2. Substantial foreign exchange reserves. These typically have a cost owing to the low returns on reserve holdings and are vulnerable to the susceptibility of the borrowed part of the reserves to withdrawal along with the other outflows.
3. Temporary capital controls. These are now sanctioned in orthodox policy circles. However, the sanctioned versions of controls are to be market-friendly and deployed only as a last resort. This position does not acknowledge the role of such controls in the avoidance of potentially fragile and unstable financial positions and in the protection of development policies in place. According to the new orthodoxy capital controls are to be only a temporary exception to moving towards cross-border financial liberalisation.
4. Strengthened prudential regulation for financial institutions as a defence against the destabilising effects which capital flows can have on domestic financial markets. Since the GFC this has been an important part of the policy agenda in the form of higher and more stringent capital charges, better provision for loan losses, extended rules for liquidity management, and wide-ranging rules for risk control and corporate governance in banks. The value of such measures is generally acknowledged. However, reliance on them on its own will principally limit or mitigate the effects of crises. The regulatory agenda is still limited to particular categories of institution and has been shown historically to be vulnerable to erosion of the rules due to the lobbying power of financial sectors and to innovation aimed at bypassing regulations. A consequence of global financial integration has been that financial innovations initially introduced in AEs have spread to EDEs, complicating regulation and risk management in the latter. Crucially regulation has a largely responsive character, being designed to provide protection against shocks - particularly macroeconomic shocks - but lacking control over the generation of the shocks.

PWF expresses scepticism concerning the adequacy and effectiveness of global institutions and mechanisms for prevention and management of financial crises with

international origins and consequences. PWF acknowledges that many of the proposals for actions under this heading are potentially helpful. Moreover such proposals have made periodic appearances on the international policy agenda, particularly in the aftermath of crises. However, they have not been implemented owing to the opposition of major AEs.

PWF provides the following lucid characterisation of an alternative policy framework: "One of the key lessons of the history of economic development is that successful policies are associated not with autarky or full integration into the global economy, but strategic and selective integration suitable to the stage of economic and financial development reached, seeking to use the opportunities that a broader economic space may offer, while minimising the potential risks it may entail". It is important to be clear what this framework – with which this commentator agrees - implies and what it does not. Piecemeal, meliorist reforms are not rejected. But their strengths and weaknesses need to be carefully assessed. Many of them (such as improved arrangements for external debt workouts, and more balanced governance of, and more even-handed surveillance by, multilateral financial institutions) are endorsed in PWF. However, their introduction should not be associated with the illusion that they are capable of furnishing the systemic reform which the international financial system requires, especially in the assistance it should provide to EDEs.

On the subject of regulation, PWF's treatment seems summary in view of its pervasive effects at the level of both institutions and transactions. PWF is correct in treating regulatory reform as part of the meliorist programme which on its own is insufficient for avoiding the instabilities to which the international financial system is subject. However, PWF's listing of subjects under the regulatory agenda merely refers without elaboration to various regulatory requirements for better managing risks which constitute potential threats to microeconomic and macroeconomic financial stability.

In its discussion of different categories of external assets and liabilities PWF covers at length the associated foreign exchange exposures. Perhaps most originally it draws attention to the way in which the opening of domestic financial markets to foreign participation undertaken by several countries has extended the set of foreign exchange risks to which domestic and foreign economic actors are subject as well the channels of transmission between such risks and the domestic prices of financial assets (which were mentioned earlier for bond and equity markets). Both government policy towards exchange reserves and risk management of private financial and non-financial institutions have become in consequence more complex since they must allow for a greater range of outcomes for the prices of currencies and other assets in conditions in which these prices can be difficult to forecast.

To the best of this commentator's knowledge the increased potential exposures due to the opening-up of EDEs' financial markets to foreign participation has not been treated to similarly comprehensive description elsewhere. But PWF's discussion of its implications for regulation and risk management none the less lacks the detail which the subject merits. These implications go beyond the treatment of foreign exchange risk in prudential rules for financial institutions and also involve government policies toward the management of foreign exchange reserves and risk management in non-financial firms. Nevertheless such prudential rules still cover an important part of an economy's exposure to foreign exchange risk.

The existing and proposed regulatory treatment of banks' exposure to foreign exchange risk is currently incomplete - even before account is taken of the expanded risks due to increased global financial integration to which PWF draws attention. Moreover PWF's discussion poses questions concerning the need for further extension of this prudential agenda. What follows focusses on regulation and management of the foreign exchange risk by banks and, as already mentioned, underlines the shortcomings of overreliance on reform of prudential measures in the policy response to financial instability.

Existing rules and procedures for the management of foreign exchange risk

This section begins with an account of the rules in the global regulatory agenda in order to show where these rules are incomplete or inadequate. Suggestions then follow for extension of these rules.[4]

Foreign exchange risk manifests itself in the balance sheets and payments obligations associated with the liabilities not only of banks and other financial institutions but also of the borrowers to which banks are exposed through their lending. Depreciation of a country's currency – due, for example, to capital outflows - exposes both its banks and its non-banks to foreign exchange risk through its effects on liabilities in relation to assets, when there is no matching of assets and liabilities denominated in foreign exchange.

Large capital inflows in a regime of flexible exchange rates can also pose problems for policy since the resulting appreciation of the country's currency can have adverse effects for both industry and other sectors. But the focus of the discussion which follows will be outflows and currency depreciation since these are the most frequently discussed concerns in the literature.

For banks the impact of foreign exchange risk is reflected in both its banking book and its trading book. The banking book contains assets and liabilities associated with commercial banking operations or intended to be held to maturity as a source of income. Balance-sheet items in the trading book on the other hand are held with the intention of reselling them in the shorter-term to take advantage of changes in asset prices and interest rates.

The distinction between trading and banking books underlies the approach of the Basel capital framework for banks to foreign exchange risk. Exposures to such risk associated with positions in the trading book attract capital requirements set in accordance with the separate rules of the framework for market risk of such exposures (BCBS, 2006: 179-182 and 191-202). Exposures to foreign exchange risk (or its absence) associated with standard commercial banking operations would normally be classified as belonging to the banking book and translated into their equivalents in domestic currency on the basis of applicable accounting rules (which may of course vary between jurisdictions). Capital requirements corresponding to these exposures are then calculated in the standard way for credit and operational risk.

More detailed attention is given to short-term foreign exchange risk in the liquidity framework of Basel III (BCBS, 2010: paras. 172-176).The inclusion of a metric on this

[4] This account makes extensive use of my article, "Finance: FSB financial reforms monitoring reports lack on EMDE problems", in the South-North Development Monitor (SUNS), June 2015.

subject “is meant to allow the bank and supervisor to track potential currency mismatch issues [between assets and liabilities in the balance sheet] that could arise in a time of stress”. The Foreign Currency Liquidity Coverage Ratio (LCR) – the metric specified –is the ratio of the stock of high quality liquid assets in each significant currency to the total net cash outflows over a 30-day time period in each significant currency. According to the metric the amount of estimated total net foreign exchange outflows should be net of foreign exchange hedges.

The metric has no internationally defined minimum threshold. Setting standards for the metric is to be the task of different jurisdictions’ supervisors based on their views as to what constitutes stress. These views should follow from an evaluation of “banks’ ability to raise funds in foreign currency markets and the ability to transfer a liquidity surplus from one currency to another and across jurisdictions and legal entities”.

How do such rules fit into what is known about actual bank practices regarding exposure to foreign exchange risk?

Large cross-border banks typically act as dealers in foreign exchange and have units which run this part of a bank’s operations. The individuals responsible may take speculative positions in different currencies within limits set by the bank. The risk of speculative positions will generally be treated as part of the management of market risk in accordance with Basel III (BCBS, 2006: 179-182 and 191-202).

Funding for the commercial banking operations of such banks, on the other hand, will be conducted in accordance with internal rules designed to avoid large open currency positions and to ensure close matching of positions in different currencies. With the implementation of Basel III these rules can be expected to include application of the metric of its Foreign Currency Liquidity Coverage Ratio as set by national supervisors.

Various arrangements are used by the banks of AEs to minimise exposure to short-term currency risk. The best known of the arrangements for controlling short-term currency risk is the Continuous Linked Settlement (CLS) Bank. However, less is known about the use of these arrangements by EDE banks.

Surveys of foreign exchange settlement have been periodically conducted by central banks for the Committee on Payments and Settlements Systems of the BIS (since renamed the Committee on Payments and Market Infrastructures). In the surveys banks and financial institutions are not classified by the country of their parents but it is reasonable to assume that the great majority are located in AEs.

Settlement through the CLS Bank is payment-versus-payment (PVP), i.e. the bought currency is paid out only when the sold currency is received, an arrangement which virtually eliminates principal risk. The CLS Bank holds accounts at the central banks of the countries whose currencies are eligible for its operations. At the time of a 2006 survey 69 per cent of the total value of foreign exchange obligations of the institutions included (obligations between CLS institutions and between CLS institutions and third parties) were settled by this method (Committee on Payment and Settlement Systems, 2008: 4-5). The importance of the CLS Bank, which is owned by 69 large financial groups with about 170 financial entities as participants in its settlement system, has increased since the 2006 survey (Scott and Gelpern, 2012: 700-702).

The other most widely used settlement method is traditional correspondent banking. Under this method each counterparty to a foreign exchange transaction transfers to the other the currency it is selling, generally using their respective correspondent banks in the currencies concerned. Since the currency transfers take place independently of one another, the method exposes the counterparties to principal and liquidity risk. Still other arrangements with lesser coverage by jurisdictions and institutions are also used to control short-term exchange settlement risk.

The proportion of short-term foreign exchange transactions of EDE banks settled through the arrangements described above is not known. It is reasonable to assume that cross-border banks with a presence in EDEs and the correspondent banks of local EDE banks use the CLS Bank and traditional correspondent banking. Moreover several EDEs have domestic payments systems through which resident banks, foreign as well as domestic, can settle mutual transactions denominated in foreign currency. But the absence of data impedes a comprehensive picture.

Longer-term foreign exchange exposures (other than in the trading book) are not covered by the arrangements for short-term foreign exchange transactions. While those responsible for funding strategies in the banks of AEs do take open positions which expose them to foreign exchange risk not associated with foreign exchange settlement, these positions are mostly accompanied by hedging strategies which reduce or control the risk. Such strategies are facilitated by the availability of hedging instruments in the financial markets to which economic actors have straightforward access (and which would reduce exposure according to the metric of the Basel liquidity framework). But the outcomes of such strategies are not covered by reporting systems like those for foreign exchange settlement.

Fragmentary information suggests that the taking of open currency positions as part of the funding of banks in EDEs and other developing countries is fairly common, especially in countries where domestic rates of inflation higher than the rates of depreciation of the currency favour the value of assets in relation to that of liabilities. Attention is drawn to such cases by two analysts of bank credit with extensive experience of Asia (Golin and Delhaise, 2013: 672-674 and 713). While such positions will be brought under tighter control when supervisors introduce as part of their monitoring the Foreign Currency Liquidity Coverage Ratio of the Basel III liquidity framework, they are still likely to feature in banking operations in many EDEs.

Open currency positions at enterprise level help to explain the continuing concern with exposure to foreign exchange risk in EDEs and other developing countries which are faced with large capital movements and unstable exchange rates. Even after the introduction by supervisors of the metric of the Basel III liquidity framework, greater vulnerability to foreign exchange risk in EDEs than in AEs is likely to prove a problem which merits more attention and monitoring in reports on the implementation of the international reform agenda.

The reasons for the persistence of greater vulnerability in EDEs are implicit in the remarks in the Basel III liquidity framework about the variation in the levels of the Foreign Currency Liquidity Ratio appropriate for different jurisdictions. Such variation will reflect differences in banks' access to foreign-currency financing and their ability to transfer liquidity surpluses between currencies and jurisdictions. Banks in EDEs will generally be less well placed to manage their exposure to foreign exchange risk under both of these headings.

Moreover the capacity of their central banks to provide foreign currencies to their countries' banks in periods of stress as an alternative to financial markets is also likely to be limited since during such periods the central banks may experience pressure on their foreign exchange reserves and their own access to borrowing foreign currencies.

One can envisage various steps to extend regulatory coverage of foreign exchange risk which would likely be especially pertinent for EDEs. Policy guidelines on exposure to foreign exchange risk in the banking book could prescribe fuller analyses of mismatches of currency exposures than that of the Foreign Currency Liquidity Coverage Ratio of the Basel III liquidity framework. This could take the form of a more comprehensive currency gap analysis, combining maturity mismatches of assets and liabilities with their currency denomination, extending beyond the short period of the Basel III liquidity framework. The difficulty of such analysis in practice should not be underestimated, especially in the case of banks with multiple cross-border operations. However, such an analysis by a bank should itself serve as a vehicle for improving its management of currency risk.

Exposure to foreign exchange risk in the banking book could also be given more explicit treatment elsewhere in the Basel capital framework. Controlling such exposure (with a cross-reference to the liquidity framework) could be explicitly included in Pillar 2 of Basel III (the Supervisory Review Process) under comprehensive assessment of risks for the purpose of sound capital assessment, whose elements are specified as including the following: policies and procedures designed to ensure that the bank identifies, measures, and reports all material risks; a process that specifies capital adequacy goals with respect to such risks; and a process of internal controls, reviews and audit to ensure the integrity of the overall management process (paras. 731-742 of BCBS, 2006). Currently the comprehensive assessment of risk has headings for credit risk, operational risk, market risk, interest rate risk in the banking book, liquidity risk, and other risks. The last of these headings could be expanded to include full, explicit coverage of foreign exchange risk not covered as part of market risk.

Indirect foreign exchange exposure and credit risk

How would a more fully developed approach to currency risk accommodate that to which a bank is exposed via the foreign-exchange-risk exposure of borrowers from it with loans in a foreign currency which has appreciated, thus making repayment obligations more onerous if the borrowers' corresponding revenues or incomes are in domestic currency?

The risk to a bank in such cases should be classified as credit rather than as foreign exchange risk since the risk to the bank is of borrowers' non-payment of their loan obligations increases due to the depreciation of its country's currency. One way of handling the indirect exposure of a bank to credit risk stemming from the foreign exchange risks incurred by its counterparties could be through a supervisors' advisory which could also be part of the comprehensive assessment of risks prescribed of Pillar 2 of Basel III. Such an advisory would be consistent with the statement of the BCBS that "While the Committee recognises that not all risks can be measured precisely, a process should be developed to estimate risks" (BCBS, 2006: para. 732), which [in accordance with the advisory suggested here] would now include not only different categories of foreign exchange risk to the bank from its own balance sheet

but also credit risk resulting from the currency denomination of the liabilities of a bank's borrowers.

A study of the FSB, IMF, and Word Bank (FSB, IMF and World Bank, 2011: 30) draws attention to the useful role which can be played by stress testing in alerting banks in EDEs under the heading of indirect foreign exchange risk. This recommendation presupposes a certain level of technical capacity of both banks and their supervisors. Arguably a bank's supervisors should recommend minimisation or avoidance of substantial indirect foreign exchange exposures for banks lacking this technical capacity.

Implications of PWF for control of foreign exchange risk

Foreign exchange risk is a central part of PWF's arguments concerning risks to financial stability in EDEs due to countries' greater financial integration partly on its own account and partly owing to its relations to other financial risks such as those due to interest rates. The previous section proposes an approach to controlling banks' foreign exchange risks which are not covered by the rules of the liquidity framework in the current regulatory agenda. But the question arises whether this approach with its reliance on advisories for supervisors would be sufficient for the purpose.

Financial regulators of AEs have not ignored the risks discussed at length in PWF. The 1986 Cross report produced by a study group established by the Central Banks of the Group of Ten Countries (and named after its chairman from the New York Federal Reserve) acknowledged the multiple ways in which financial innovation "can contribute to systemic vulnerabilities" such as underpricing of new financial instruments which does not reflect their true risks, the lack of assured liquidity for securitised assets, and the opacity of such assets based on multiple linked transactions and off-balance-sheet positions (Study Group, 1986: 127).[5] But in the observations of the Cross Report on securities financing the emphasis was on the Euro-markets whose operations were mostly located in AE financial centres or in selected offshore centres, not in EDEs.

It is the increases in the scale and the expanded sectoral character of the cross-border financial integration since the 1990s (i.e. since the Cross report) of EDEs' financial markets (including domestic markets) which are given prominence by PWF. These features have had the following consequences.

1. In half of a set of 16 EDEs in 2012 the equity market capitalisation was higher than or close to that of AEs as a proportion of GDP. In many EDEs the share of foreign investors in equity markets (of which part admittedly reflected movements in prices) exceeded that in some AEs such as United States and Japan.
2. As part of external debt, bond issues have been growing faster than international bank lending for borrowers from both the public and the private sectors. There has been a shift by international banks from cross- border lending to local lending by entities with a

[5] The Cross report characterised financial innovation as follows: "Financial innovation in its broadest sense may encompass two different phenomena. It may take the form of new instruments…or it may manifest itself in far-reaching changes in the relative importance of various channels of financial intermediation. In practice, of course, these two types of structural change will tend to be closely interrelated." (Study Group, 1986: 127)

local commercial presence. This has been accompanied in many EDEs by a shift in government policy away from incurring international debt in foreign currency to borrowing in local currency, often through issues in local debt markets. This has raised the share of such debt denominated in local currency and increased the share of locally issued debt held by non-residents.

3. There has been a continuing build-up of external debt, which has accelerated since 2009. Borrowing by the private sector has grown more rapidly so that it now accounts for a higher proportion of both international bank loans and securities issues than the public sector. Local-currency borrowing has been growing faster than that denominated in dollars and somewhat incomplete data point to an increase in several EDEs in the share of non-residents in holdings of government debt.

As PWF notes and was mentioned earlier, the changed pattern of financial integration of EDEs has added to the channels for the transmission to them of financial shocks due to global cycles. The new vulnerabilities are due to the internationalisation of domestic bond, equity and property markets and to the role which may be played by the local presence of foreign banks. These vulnerabilities can give rise to foreign exchange risks and, as already mentioned, are large and pervasive enough to raise the question of whether the measures proposed above are sufficient for the management of the foreign exchange risks posed by the substantially increased openness of financial markets now prevailing.

There does not appear to exist a magician's wand under the heading of prudential regulation for controlling risks due to these vulnerabilities. Moreover both the character and extent of the vulnerabilities and the information available to regulators concerning the risks are likely to vary among countries. There do not appear to be appropriate policy responses involving measures radically different from those already listed. However, these measures are susceptible to design which will enable them to target foreign exchange risk more effectively. For example, special liquidity requirements, supplementing those of Basel III, could be imposed with the objective of increasing banks' ability to deal with increased foreign exchange risks due to changes in sectoral developments. Such requirements, which are included in the policy tool kit of the Bank of England, are designed to discourage excessive reliance on particular sources of funding and overexposures to particular asset classes (which could provide protection against foreign exchange risks due to indirect exposures, provided that the Bank has the necessary information). Countries have also made use of restrictions on the forms of banks' funding designed to increase its sustainability beyond that targeted by Basel III's Liquidity Coverage Ratio[6].

The scope of subjects eligible for inclusion in the supervisors' advisories suggested earlier could be extended to cover all identifiable foreign exchange risks including those resulting from indirect exposures due to the positions of banks' borrowers. But to be effective such a measure presupposes adequate knowledge concerning such risks. This approach would be less effective unless the rules extend to financial institutions which engage in financing

[6] Macroprudential measures designed to strengthen banks' balance sheets beyond the levels of Basel III's Liquidity Coverage Ratio are described in Cornford, 2014: section IV.C.

leading to foreign exchange risk but are not regulated as part of the banking sector, howsoever defined in the jurisdiction in question.[7]

Concluding observations

As emphasised earlier, the extension and elaboration proposed above for the treatment of prudential rules for foreign exchange risk does not contradict the verdict of PWF that on their own such rules are not adequate for controlling the risks to financial stability posed by global financial integration. In evaluation of their potential effectiveness account should also be taken of political and administrative difficulties associated with adoption and implementation of the rules and standards of the global regulatory agenda. Agreement on the subjects of this agenda depends on a laborious process involving a large group of countries, and eventual incorporation in laws and in firms' practices takes considerable time. Eventual outcomes will almost inevitably entail compromises meaning that some issues are addressed at best inadequately. Perhaps still more important here is a key point touched on earlier in discussion of the meliorist character of the agenda for reform of prudential regulation: the resulting rules can provide protection against and mitigation of shocks but do not tackle many of the risks associated with financial globalisation at their source.

[7] The problems associated with near-banks in a similar context was recognised by the Cross Committee: "But where …near-banks are conducting similar business to banks…a case can be made for reducing the risk posed by the potential failure of large non-bank financial firms by extending bank-like regulation and supervision to them, even though they do not themselves take deposits from the public and would not fit neatly under the particular supervisory standards applicable to banks" (Study Group: 241).

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