SPECIAL REPORT

TD Economics

April 13, 2016

FEWER DEGREES OF FINANCIAL SEPARATION

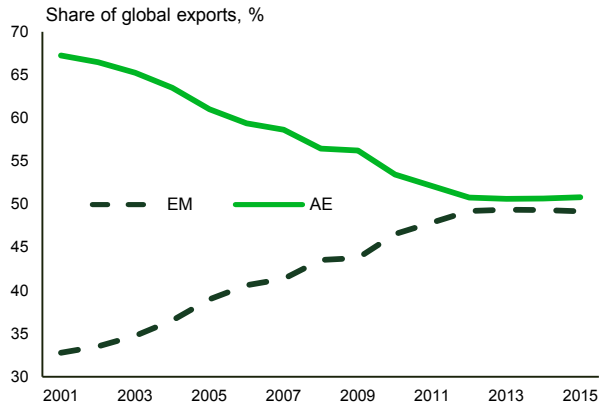
Advanced economies more exposed to emerging markets through financial linkages

Highlights

- The rapid rise in economic clout of emerging markets (EMs) has arguably been the greatest economic story of the 21st century so far. EMs now account for more than half of the world economy and roughly half of global trade volumes.
- Alongside a larger footprint come more extensive linkages with advanced economies (AEs). Financial linkages have recorded particular gains in the past decade. This translates into a potentially larger impact on AEs if risks stemming from EMs materialize.
- Not all AEs are equally exposed. Financial and trade linkages suggest that the relatively weaker performing economies of the Eurozone and Japan are more exposed, and would likely be tipped into recession in the event of an EM crisis.
- The U.S., UK, and Canada would not emerge unscathed from an EM crisis, but the impacts there would be mainly through exposure to other AEs through larger direct ties and confidence channels.
- This scenario is not our base case. In fact, many AEs have been reducing their exposures to EMs since signs of strain first emerged in 2013. However, it does illuminate where vulnerabilities lie, and how the likely impacts would propagate through the global economy.

Rapid growth in emerging markets (EMs) over the past fifteen years has raised not only their share of the global economy but also their degree of integration within the international financial system, particularly with advanced economies (AEs). This increase in interconnectedness between EMs and advanced economies has occurred through direct channels, i.e. trade and financial, as well as through indirect channels i.e. consumer and business confidence. As vulnerabilities in EMs began to surface in recent years, markets became increasingly preoccupied with fears of an EM-led financial crisis and the associated spillovers to advanced economies.

CHART 1: EMS HAVE CAPTURED A LARGER SHARE OF GLOBAL TRADE



Source: CPB Netherlands Bureau for Economic Policy Analysis, TD Economics.

While we don't believe such an unwelcome event is likely, markets do have cause for concern given recent developments in EMs. Since the global financial crisis, highly stimulative monetary policy in advanced economies and the resulting ample global liquidity led to healthy capital flows into EMs as investors sought better returns. While initially welcome as a relatively cheap source of financing, these inflows acted to increase their financial and real economy vulnerability. Evidence of this occurred when the Federal Reserve tightened monetary policy for the first time in more than a decade last December. This triggered capital outflows from EMs similar in magnitude to those observed during the taper tantrum in the spring of 2013. As a result, markets have become worried that rapid capital outflows could trigger recessions across

Derek Burleton, VP & Deputy Chief Economist 416-982-2514
Leslie Preston, Senior Economist 416-983-7053
Fotios Raptis, Senior Economist 416-982-2556
Admir Kolaj, Economic Analyst 416-944-6318

EMs, with knock-on effects to advanced economies. Of particular concern is the rapid buildup of corporate debt in many EMs. Nonfinancial corporate debt as a share of GDP in EMs overtook that of advanced economies in 2013, and this trend has only strengthened since.

Looking at the evolution of financial and trade linkages between the major advanced economies, we provide analysis on the potential impact from an EM-led crisis on these advanced economies. Model simulation results suggest that external headwinds originating from slower EM growth could deal a serious blow to the economic growth of large advanced economies. The scenario suggests that a crisis in EMs would likely result in a recession in the weakest of advanced economies – Europe and Japan – although the U.S., UK, and Canada would not escape unscathed given the strong financial and trade relationships. While this is not our base case outlook, it does give a sense that if we were to get a sizeable shock emanating from EMs, the impact on AEs would be larger than in the past.

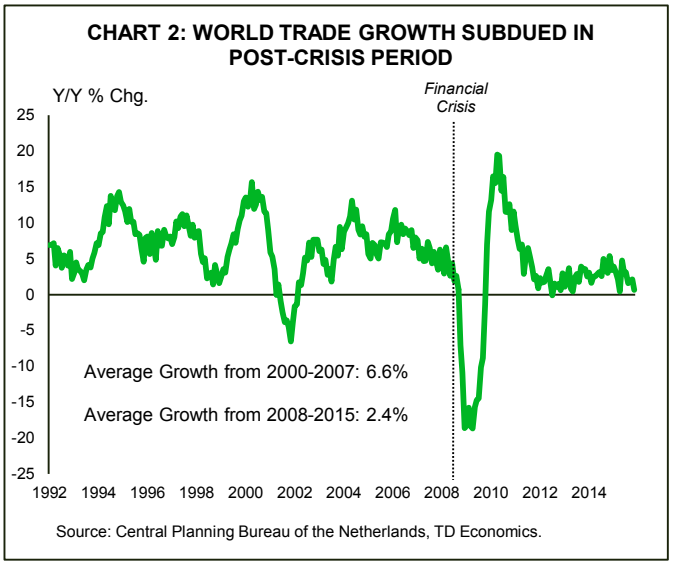
The ties that bind

The growing footprint of China and other EMs has been arguably the biggest global economic story over the past 15 years. In 2000 – the year before China became a member of the World Trade Organization – EMs accounted for 43% of world output and 24% of global exports (estimates at purchasing power parity or PPP). By 2014, these shares had surged to 57% and 38%, respectively. China alone accounted for about half of the overall increase in these shares; the rest of the gains were broadly shared across EM Asia – which enjoyed significant knock-on effects from China's ascendency – as well as the commodity-exporting EMs in the Americas and in Eastern Europe.

As EMs increased as a share of total global output over time, the importance of trade strengthened in tandem (Chart 1). That being said, trade flows have tapered off since the 2008-09 financial crisis (Chart 2).

Slower trade growth has been a global story, and has reflected a number of key culprits:

- In the Eurozone, bouts of economic crises have stifled intra-regional flows.
- More broadly, AEs have been vulnerable to serial disappointment in terms of growth and forced the hands of central banks to ramp up monetary accommodation.
- Deficient demand within AEs reduced their import of goods and services as the policy focus shifted to stimulating domestic production. Moreover, despite gains made in trade negotiations, protectionist measures have increased in the post-crisis world, as nations have erected barriers in the hope of reviving domestic industry, ignoring the beggar-thy-neighbour aspects of the trade restrictions.
- Within EMs, China's efforts to move away from low-valued added assembly and the buildup of domestic industrial capabilities have made the country less reliant on the import of foreign machinery.
- Perhaps most importantly, the structural slowdown in China's economy and the fizzling of the commodity boom has provided an additional setback to EM-bound exports since 2013.



Notwithstanding the recent slowdown in global trade, the share of AE exports to EMs remains about 5 percentage points above its level from a decade ago. At the same time, structural changes have reduced EM dependence on advanced economy exports. Keep in mind that these direct export shares understate the true exposure through supply chains and other indirect effects. To understand this, it's useful to look at a broader measure of trade, such as trade in value added data prepared by the OECD in collaboration with the World Trade Organization (WTO). Although the latest data only run until 2011, they reveal that trade linkages in value-added terms are often very different between advanced and emerging economies compared to what traditional export shares suggest. The strength of trade linkages between advanced and emerging economies are discussed in more detail within relevant sections.

Growing financial linkages are the big story

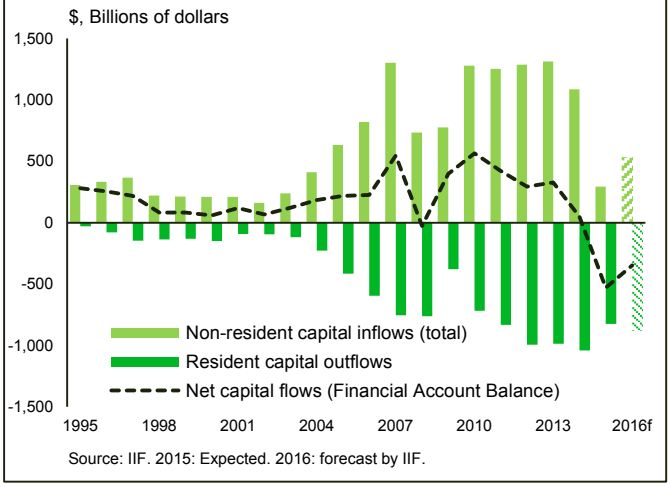
While trade linkages remain important, the bigger story in recent years has been the growing financial ties between EMs and the rest of the world. Growing trade relationships typically necessitate increased financial linkages. As such, especially in the case of EMs, the scope for greater returns on investment driven by enhanced growth opportunities proved very attractive for foreign companies and investors over the past few decades. Global financial institutions have been particularly big players, increasing their presence in emerging market economies – both physically and in terms of portfolio asset allocation.

In order to assess the evolution of financial linkages between EMs and AEs, we source data on foreign banking claims from the Bank of International Settlements (BIS) and portfolio investment from the IMF.

Unlike direct trade, net financial flows into EMs increased in the aftermath of the 2008-09 global recession. Chart 3 points to sustained non-resident gross inflows into EM portfolio assets of more than US$1 trillion annually from 2010 to 2013. During that period, inflows into EMs were bolstered by rejuvenated risk appetite, efforts by AE central banks to stimulate their economies through balance sheet expansion, and the promise of higher returns in these fast growing economies.

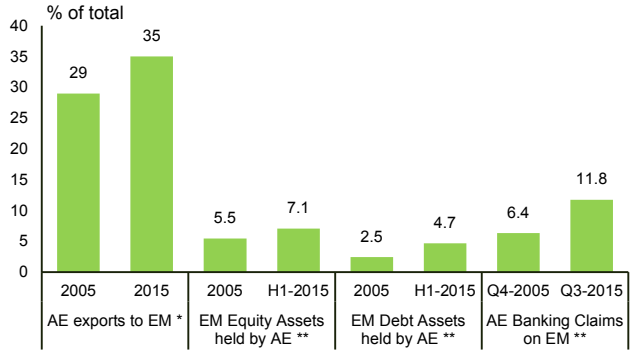
Since 2013, capital inflows into EMs have fallen to about one third of their post-financial crisis peak, dampened by concerns about rising U.S. interest rates and heightened EM growth worries. While China has been responsible for much of the deterioration, the resource-driven markets of Eastern Europe and the Americas have also suffered. The latest BIS

CHART 3: EMERGING MARKET CAPITAL FLOWS



Source: IIF. 2015: Expected. 2016: forecast by IIF.

CHART 4: EXPOSURE OF ADVANCED ECONOMIES TO EMERGING MARKETS



Source: IMF, World Bank (World Development Indicators), BIS, Nat'l Statistical Agencies, Haver Analytics, TD Economics. * AE includes: EU-28, Japan, U.S., Canada; EM includes: 14 largest EM economies by PPP.
** AE includes: U.K., Euro Area (Germany, France, Italy, Spain), Japan, U.S., Canada; EM includes: 12 countries (for details see Table 1).

data also indicate that cross-border banking flows to EMs have declined recently, suggestive of banks proactively reducing their exposures.

Meanwhile, EM resident capital outflows have also accelerated over the past few years. Leading up to 2013, EMs had recycled rising trade surpluses and growing central bank reserves into other economies, notably those of the advanced world. These sources of outflows have been under pressure over the past few years due to falling surpluses and reduced sovereign wealth, but this impact has been more than offset by more general safe haven flows.

Despite these more recent developments, the share of total AE international banking claims in EMs, as well as debt holdings remains nearly double the levels recorded a decade earlier (see Chart 4). Equity asset holdings have also grown in terms of share albeit less significantly.

Table 1 provides a deeper dive regarding how EM countries rank based on AE portfolio investment and cross-border banking ties, both over the past decade and post-crisis. As China has opened up its financial system to foreign banking and investment in recent years, the share has edged up but remains relatively small compared to the large Chinese economy. However, given its massive size, absolute AE financial linkages to China remain the highest within the EMs.

EMs that stand out with a high degree of foreign portfolio investment and cross-border banking claims are the relatively open resource-heavy economies like South Africa, Chile and Malaysia, which have attracted large amounts of capital during the resource boom. Mexico also has a relatively high degree of advanced economy financial

TABLE 1: DEGREE OF ADVANCED ECONOMY INVESTMENT IN EMERGING MARKETS

As a % of EM GDP	AE* Portfolio Investment Assets in EMs			AE* Banking Claims in EMs		
	2005	2010	H1-2015	Q4-2005	Q4-2010	Q3-2015
Brazil	13.6	17.4	10.3	11.2	20.2	13.4
China	2.1	2.8	2.7	2.5	4.6	4.1
India	6.5	8.5	9.5	7.1	12.7	10.5
Indonesia	4.5	7.0	8.3	4.7	6.5	6.9
Malaysia	15.2	20.5	19.0	28.4	30.0	23.9
Mexico	13.4	14.3	18.8	25.9	28.9	23.9
Philippines	14.2	12.6	14.4	13.7	11.1	9.8
Poland	10.7	13.7	14.8	11.3	35.1	37.7
Russia	8.3	6.4	4.3	4.5	8.8	4.9
S. Africa	21.0	29.7	35.5	26.1	33.4	27.8
Thailand	9.7	10.7	14.6	11.7	16.2	23.6
Turkey	6.7	10.4	9.0	7.2	13.2	24.7

Darker shading indicates greater degree of AE investment in EM economy.
Source: BIS, IMF, Haver Analytics, World Bank (World Development Indicators).
*AE includes: U.K., Euro Area (Germany, France, Italy, Spain), Japan, U.S. and Canada.

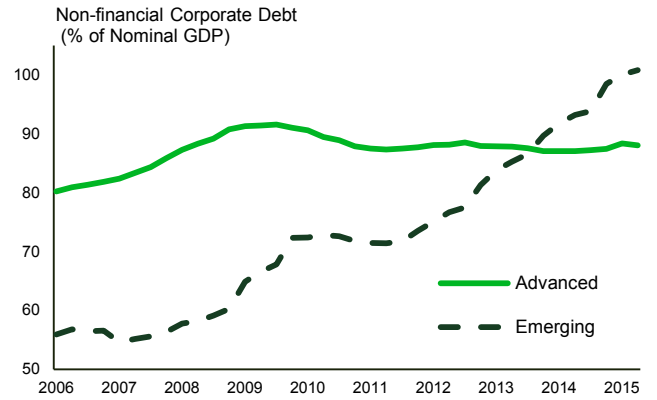
ties, likely reflecting close trade ties with the U.S., as well as Spanish bank subsidiaries. Emerging European countries like Poland and Turkey have also experienced a notable increase in advanced economy banking claims, as western European banks have expanded into these regions.

Corporate debt the focus of EM vulnerability

Over the past year, EM investor angst increased as the magnitude of the slowdown in Chinese growth crystallized, contributing to the weakness in global growth. As a result of the aforementioned deepening of financial linkages between advanced and emerging market economies, global financial institutions and investors have responded to concerns that have flowed from massive credit expansion in EMs, especially since the 08-09 financial crisis. Worries about the sustainability of high debt levels have been heightened as weaker revenues raise the risk of default. Moreover, historically EM financial crises have often been preceded by a rise in leverage, whether at the corporate or sovereign level.

The increase in EM debt since the financial crisis has been concentrated in the corporate sector (Chart 5). The bulk of this debt is made up of loans (largely domestic bank lending), but the share of bonds, which are held both by domestic and external parties, has grown rapidly, from 9% of total debt in 2004 to 17% in 2014[1]. Most of the growth in bond issuance has occurred post financial crisis. However, an increase in corporate leverage alone doesn't justify an increased risky outlook for EMs. Other coincident factors

CHART 5: EM CORPORATE DEBT BURDEN SURPASSES AE'S

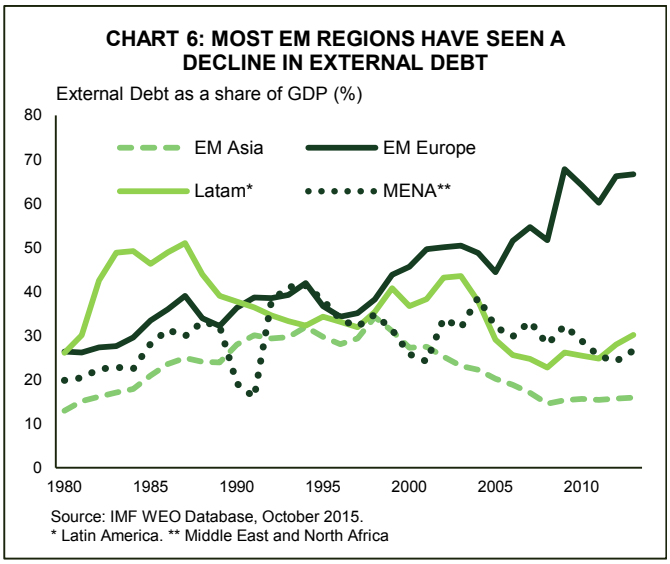


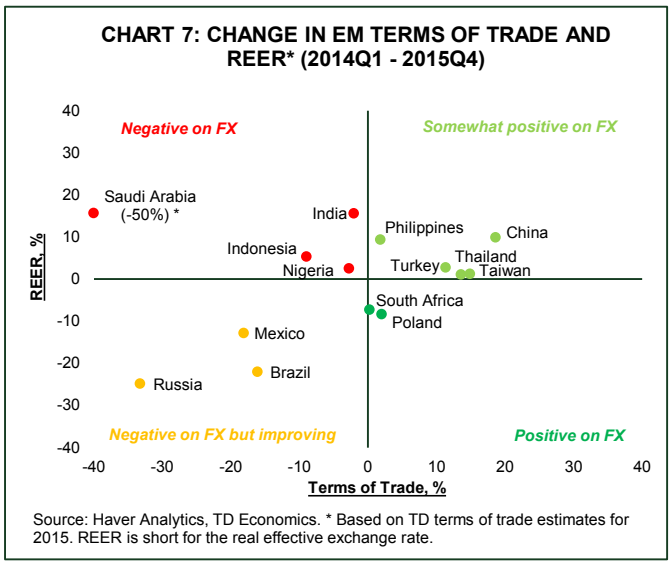
Source: BIS. AE includes: Australia, Canada, Eurozone, Japan, Sweden, Switzerland, U.K. and U.S. EM includes: Argentia, Bazil, China, India, Indonesia, S. Korea, Mexico, Poland, Russia, Saudi Arabia, South Africa and Turkey.

act to raise the risk around the EM outlook, such as the depreciation in many EM currencies arising from capital outflows and weaker commodity prices, which effectively increases the burden of foreign-denominated bonds for EM issuers. However, it is encouraging to note that the issuance of foreign currency denominated corporate bonds by EMs as a share of total bonds issued has declined by more than 10 percentage points relative to the pre-crisis period[2]. This downward trend is largely driven by Asian EMs – China in particular – where local currency denominated debt is much more common. Foreign currency denominated debt issuance is more prevalent in Latin America and EM Europe.

When assessing the degree of risk on the EM outlook from rising debt levels, it is common to liken recent debt dynamics in EMs to the Asian financial crisis from the late 1990s. While convenient, there have been a lot of changes in EMs since the Asian financial crisis that have made EMs structurally more resilient to capital flight. Generally speaking, EMs are in better shape than in 1997, with lower public debt burdens, significantly higher foreign exchange reserves, and for the most part, lower levels of external debt-to-GDP ratios. The main EM region to see a significant rise in external debt-to-GDP is Emerging Europe (see Chart 6), which includes most Eastern European countries (Poland, Hungary, etc.) and Turkey. As Table 2 shows, Turkey and Poland have seen a significant increase in their external debt levels. Latin America has seen a mild increase more recently (Chart 6), with Chile standing out as having a relatively high degree of external debt.

A growing challenge for some EMs is their ability to service foreign liabilities given the rapid deterioration in





their ability to generate foreign exchange. This is especially a concern if the EM in question also has a lot of corporate or sovereign debt that is denominated in a foreign currency. Trade is an important means of generating foreign currency that helps a country pay for foreign liabilities. Chart 7 shows the adjustment of EM terms of trade and real effective exchange rates since commodity prices have declined. The chart is separated into four quadrants, each quadrant specifying what the likely impact has been on a nation's ability to generate foreign exchange. Of the EMs considered, only Poland has been able to generate more foreign exchange due to an improvement in both its terms of trade and a depreciation in its exchange rate, of which the latter helps make Polish exports more competitive. Countries in the two left quadrants depend heavily on commodity exports and as a result have seen a very large deterioration in their ability to generate foreign exchange, although nations in the bottom left quadrant have floating exchange rates which are aiding the adjustment to the negative terms of trade shock. Brazil is one EM nation that has a relatively elevated private external debt-to-GDP ratio, and its decline in terms of trade has reduced its ability to generate foreign exchange to service these external debts, elevating the riskiness of this debt. However, the depreciation in its exchange rate has acted to reduce imports and boost demand for its exports, facilitating its ability to generate foreign exchange.

TABLE 2. EMERGING MARKET ECONOMY INDICATORS

As a % of GDP	FX Reserves		Private External Debt		Public** External Debt	
	1997	2015*	1997	2014	1997	2014
Brazil	5.8	19.4	8.6	13.6	9.4	7.4
China	14.7	30.9	0.3	1.8	11.8	0.8
India	5.7	15.5	2.2	10.2	18.7	8.0
Indonesia	6.0	11.7	20.6	11.4	26.0	16.1
Malaysia	18.4	30.7	15.5	11.5	16.8	19.6
Mexico	5.9	14.7	5.7	7.6	17.3	18.4
Philippines	7.8	24.8	14.2	7.8	32.1	13.3
Poland	12.7	18.9	-	-	-	-
Russia	3.2	17.3	-	-	-	-
S. Africa	3.1	12.4	1.6	13.9	10.7	16.5
Thailand	16.4	37.7	31.4	11.0	14.8	8.3
Turkey	7.1	11.6	9.8	21.2	25.0	13.1

Note: Green highlighting indicates countries where the situation has *improved* since 1997.
Source: IMF, Haver Analytics, World Bank (World Development Indicators). *or latest available. **Public includes publically guaranteed debt.

Financial spillovers are key risk, but opaque in nature

While it is difficult to determine solely by looking at debt-to-GDP ratios in EMs whether corporate debt levels are at any kind of critical level, it is reasonable to characterize them as an elevated risk, particularly given a weaker growth backdrop in EMs. Notwithstanding the discussion above about improvements in some of the key risk criteria relative to the late 1990s, if these risks were to materialize they would likely have a more notable impact on the current outlook for advanced economies than in the past.

The challenge for analysts is coming to grips with not only the triggers of a crisis but the transmission of the contagion. Direct trade linkages are often most easily understood as follows: if EM growth slows drastically, countries import less, and exports from many advanced economies would weaken as will total global trade volume. Unfortunately, financial linkages are much more opaque and clearly pose the greater risk.

TABLE 3. EMERGING MARKET EXPOSURE OF KEY ADVANCED ECONOMIES

As a % of AE GDP	U.K.		Euro Area*		Japan		U.S.		Canada	
	Portfolio invest.	International banking claims	Portfolio invest.	International banking claims	Portfolio invest.	International banking claims	Portfolio invest.	International banking claims	Portfolio invest.	International banking claims
Brazil	1.9	1.9	0.2	0.4	0.4	0.8	0.9	0.41	0.6	0.5
China	1.8	5.9	0.2	0.8	0.5	1.7	0.9	0.48	1.7	0.8
India	1.0	2.4	0.1	0.4	0.2	0.8	0.8	0.42	0.5	0.1
Indonesia	0.4	0.6	0.1	0.1	0.2	0.6	0.3	0.07	0.1	0.0
Malaysia	0.4	1.3	0.1	0.1	0.2	0.6	0.2	0.08	0.1	-
Mexico	0.9	1.1	0.4	0.1	0.4	0.4	0.9	0.52	0.4	-
Philippines	0.2	0.3	0.0	0.0	0.1	0.2	0.2	0.04	0.1	0.0
Poland	0.4	0.2	0.4	1.5	0.2	0.1	0.1	0.14	0.1	0.0
Russia	0.5	0.3	0.1	0.6	0.0	0.3	0.3	0.08	0.2	0.0
S. Africa	0.6	2.4	0.1	0.1	0.2	0.2	0.5	0.07	0.3	0.0
Thailand	0.3	0.4	0.0	0.0	0.2	1.7	0.2	0.05	0.1	0.0
Turkey	0.4	0.9	0.1	0.7	0.1	0.3	0.2	0.11	0.1	0.1
EM Sum	8.9	17.7	1.7	4.9	2.7	7.6	5.4	2.5	4.4	1.6

Darker shading indicates relatively higher degree of exposure.

Source: Source: IMF, BIS, Haver Analytics. *Euro area for portfolio assets includes Germany, France, Italy and Spain. Data for portfolio investment assets are H1-2015 divided by 2015 GDP; International banking claims are Q3-2015 divided by 2015 GDP (total claims).

Financial spillovers related to a slowdown in EMs could take place through a variety of channels: cross-border banking linkages, portfolio holdings of EM assets and through portfolio asset holdings of advanced economy corporations with significant EM revenues. Each of these channels are inter-related, creating potentially dramatic negative feedback effects across economic performance, global investor confidence and back to further bouts of financial market stress. Increased financial regulation over the past several years may help to mitigate some of the risks on the global banking sector, but to what extent remains unclear.

Eurozone and Japan most directly vulnerable

What is clearer is that certain regions have achieved much greater trade and financial linkages over the past couple of decades. In this section, we explore these linkages, which could shed some light on how a potential EM debt crisis may unfold.

Tables 3-4 summarize EM financial and trade ties across the key AEs. One takeaway from Table 4 is that despite the widespread increase in EM trade reliance across key AEs, exposure through the trade channel remains reasonably small on the whole (by share of world output at purchasing power parity). The trade share between any single major EM and advanced economy is typically below 10%, with some exceptions (Mexico for the U.S., China for Japan), but on aggregate these fourteen EMs account for less than a tenth (Canada) up to two-fifths (Japan) of advanced economy exports.

Having said that, as we've already noted, direct trade alone is likely just part of the total spillover channel to advanced economies from slower EM growth. An alternative measure shown in Table 5 uses value-add data provided by the OECD to capture impacts on supply chains and other indirect effects. These data reinforce the view that Japan and Europe are more likely to suffer from an EM slowdown in growth, with Europe linked closely to developments in EM Europe and Asia, while Japan is most dependent on its Emerging Asian neighbours. More broadly speaking, the Eurozone and Japan are more exposed in terms of financial and trade linkages to an EM slowdown; United States and Canada are impacted mainly through secondary channels.

Financial system key source of UK Exposure to EMs

When it comes to financial linkages, the UK stands out as having the greatest exposure. London is a global financial hub, and the UK's large exposure in terms of cross-border banking linkages is due to a couple of large international

TABLE 4: AE EXPORTS TO EMS				
as a % of AE's exports	U.S.	Canada	EU-28	Japan
Brazil	3.0	0.5	2.3	0.7
China	7.1	4.0	8.9	18.3
India	1.6	0.7	2.1	1.2
Indonesia	0.4	0.4	0.6	2.1
Mexico	11.5	1.1	1.6	1.5
Nigeria	0.2	0.1	0.7	0.1
Philippines	0.0	0.1	0.3	1.4
Poland	0.2	0.1	-	-
Russia	0.4	0.2	6.8	1.3
Saudi Arabia	1.2	0.2	1.9	1.1
South Africa	0.3	0.1	1.4	0.5
Taiwan	1.1	0.3	1.0	5.8
Thailand	0.5	0.2	0.8	4.5
Turkey	0.5	0.2	4.4	0.3
Total	28.1	8.1	32.9	38.9

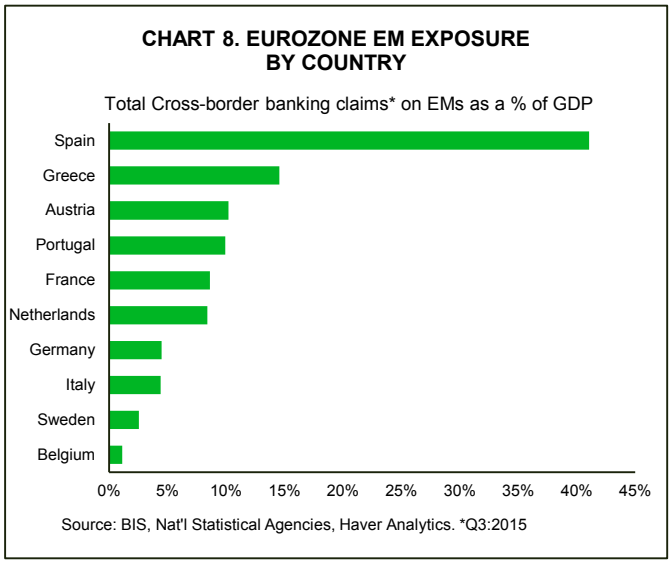
Source: Haver Analytics, Nat'l Statistical Agencies, TD Economics.
Example of table usage: About 11% of U.S. exports go to Mexico.

banks, which are headquartered in the UK, but don't have significant domestic banking activities. It is perhaps reassuring that the largest UK banks have gone through two rounds of regulatory stress testing exercises since the financial crisis. The Bank of England judges that UK banks are now significantly more resilient than before the global financial crisis[3], and that lending to the real economy could continue even if severe stresses materialize. This means that UK banks would be less likely to suffer through a Lehman-style meltdown. However, that does not preclude periods of EM stress which hurt Banks' equity valuations, and hence lead to liquidity issues for affected institutions.

The direct trade exposure of the UK to EMs, on the other hand, is almost trivial. The UK's largest trade exposure is with China. However, the UK does not export much high-value added goods to EM markets, suggesting that the UK export industry is relatively isolated from a slowdown in EM growth.

Eurozone and Japan have similar linkages

The Eurozone is the next most exposed to EMs on the financial side. It has seen a greater expansion in cross-border banking linkages to EMs over the past ten years, although more recently they've been actively reducing their exposure to EMs. This is not surprising given the troubles associated with the European sovereign debt crises and more stringent



regulatory requirements in recent years. Drilling down into Eurozone countries, Spanish banks stand out as having significant claims on EMs (Chart 8), largely in Mexico and Brazil.

The direct trade exposure of the Eurozone to EMs is small. However, looking at the block's indirect trade linkages as measure by value-added export share of EM trade, it is much more exposed to a slowdown in EM growth via indirect trade channels. This is likely due to the fact that the block's major EM trading partners are importing a lot of capital goods from the Eurozone as they too strive to move up the value chain. Emerging Europe (Russia and Poland) and Emerging Asia are a significant source of demand for high-value added goods exported by Europe. A slowdown in these regions would have a larger drag on European output than the direct trade links otherwise suggest.

Japan has a similar exposure to EMs as the Eurozone, and the exposure is also concentrated in cross-border banking claims, which have advanced quite significantly over the past ten years. Its direct trade linkages to EMs, particularly those of Emerging Asia, are the largest of all advanced economies. Its indirect trade links with Emerging Asian economies are also important, as these neighbouring markets provide a substantial source of demand for Japanese exports.

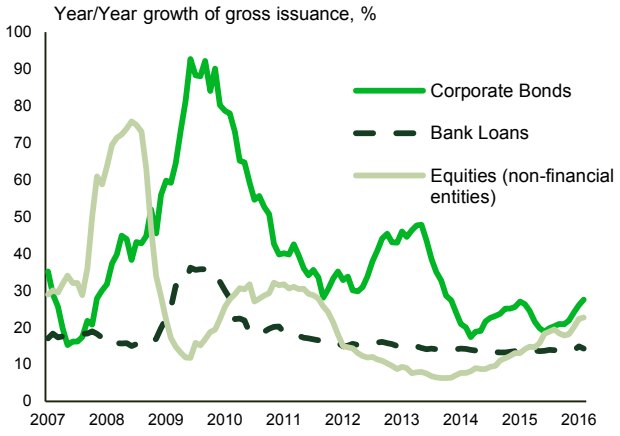
U.S. and Canada exposure is primarily indirect

As for the U.S., export shares in value-added terms point to less of an impact from a slowdown in Chinese growth on the U.S. than the direct trade data would otherwise suggest. In fact, the most important EM for the U.S. is Mexico, followed by Taiwan. U.S. banks also have much smaller cross-border claims than the Eurozone or Japan. The bulk

China's High Level of Indebtedness

China is the most indebted EM of all. And in many ways it is a special case. China has the largest debt to GDP amongst EMs, although in many cases these debts are concentrated in state-owned-enterprises, and could arguably be characterized as sovereign debt given the implicit state backing. China's external debt is much smaller than Brazil or Turkey. Furthermore, most of the debt in China is yuan denominated, which lessens the debt burden if the yuan were to depreciate substantially, resulting in higher inflation. As a result, the risks associated with China's outstanding debt perhaps pose less of a concern for the global growth outlook through financial channels. With relatively low central government debt levels, the Chinese government has the capacity to bail out banks or state-owned enterprises if required. But, that is not to say that a resulting yuan devaluation, however unlikely, resulting from the pressures of capital outflows will not exacerbate a slowdown in Chinese growth that create risks to the global economy.

CHART B-1: BONDS AND EQUITIES SMALL BUT FAST GROWING SOURCE OF FINANCING



Source: Peoples Bank of China via Haver Analytics, TD Economics

China's debt is concentrated in State-owned enterprises with very high leverage ratios, and in the real estate, construction, mining and utilities industrial sectors. Given China's goals of rebalancing the economy while maintaining annual economic growth at about 6.5% through 2020, domestic debt is likely to climb higher for a number of reasons. First, the securitization of local government financing vehicles and debt swaps is essentially freeing up space on Chinese bank and local government balance sheets to be able to increase lending and undertake further infrastructure programs that should help support growth. However, these debt swaps do not alter the total stock of debt. Secondly, China requires additional infrastructure particularly in its Tier 1 cities in order to accommodate the expected increase in urbanization related to the reform of its Hukou system. Infrastructure has traditionally been financed at the local government level, and this will likely result in further yuan denominated bond issuance. Lastly, Chinese enterprises are being encouraged to expand operations abroad, implying the need to raise more capital for foreign acquisitions. Given Chinese authorities' goal of liberalizing capital flows by the end of this decade, it's likely that Chinese firms will choose a mix of financing to achieve their expansion, namely share issuance, and corporate bond issuance both in domestic and foreign currencies.

of their financial exposure to EMs is through investment in EM portfolio assets (Table 3). However, relative to the size of the U.S. economy, even significant losses on these portfolio assets would not cause a significant wealth effect on U.S. consumption.

That being said, U.S. banks may have more exposure to EMs than meets the eye, primarily through linkages to other advanced economies such as those in the Eurozone or Japan. Cross-border banking linkages are much larger between advanced economies than with EMs. The U.S. has particularly large cross-border claims with the UK (Chart 9), and Japan, which suggests that weakness in these banking systems, particularly the UK as a result of EM weakness would be the main direct transmission channel for weakness in EMs to the United States.

Canada does not trade much with EMs, neither in direct or value added terms. As with other advanced economies, the reduced importance of China via the indirect trade channel is likely a reflection of China's achievement in moving up the value chain in terms of its domestic industry. China now can satisfy much of the domestic demand and often external demand for high-value added capital goods from domestic industry, while in the past it relied more on imports from advanced economies. For Canada in particular, China is a source of demand for raw commodities for which the value added is often achieved during processing by Chinese firms. Canada is similar to the US in that its financial linkages are concentrated in portfolio assets, with minimal cross-border

TABLE 5: AE VALUE-ADDED CONTRIBUTION TO EM EXPORTS				
as a % of EM's exports*	U.S.	Canada	EU-28	Japan
Brazil	2.1	0.3	2.5	0.3
China	4.4	0.8	8.0	7.0
India	2.9	0.3	4.5	0.8
Indonesia	0.8	0.2	1.3	1.1
Mexico	17.1	1.8	6.9	3.4
Nigeria	-	-	-	-
Philippines	3.1	0.3	7.8	3.3
Poland	2.2	0.2	25.6	1.2
Russia	1.2	0.1	6.9	0.9
Saudi Arabia	0.3	0.1	1.0	0.1
South Africa	1.8	0.3	5.3	0.6
Taiwan	6.8	1.0	7.5	12.9
Thailand	4.4	0.6	7.4	9.8
Turkey	2.5	0.5	12.6	0.8

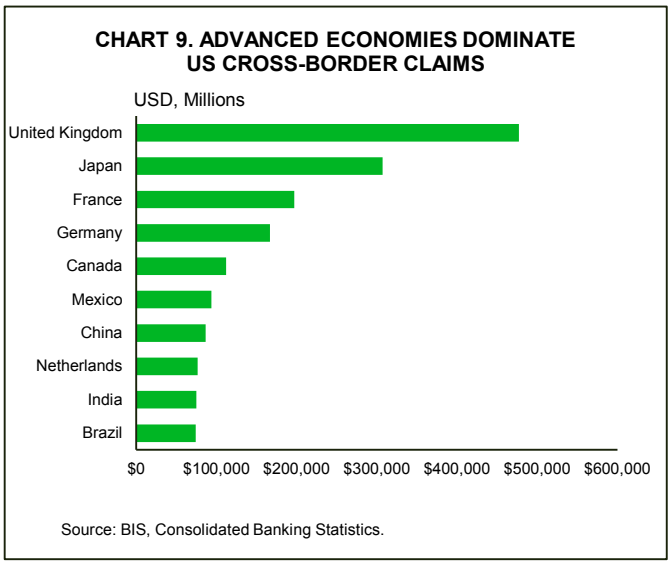
Source: OECD, TD Economics. *In value-added terms.
Example of table usage: About 17% of the value added in Mexican exports is generated in the U.S.

banking linkages. Portfolio investments amount to 4.4% of GDP, which is higher than the Eurozone and Japan, but well below the UK or U.S.

Quantifying the impact on AEs from an EM crisis

Our baseline outlook for global growth assumes that slower EM growth does not pose major immediate risks to advanced economies. Additionally, despite the increase in financial integration between EM and advanced economies, lower EM asset values would not impact AEs severely through financial channels. Having said that, risks surrounding EM debt and the potential for contagion are clearly top of mind, and an EM crisis would not occur without contagion to advanced economies. If a shock were to severely dampen EM growth prospects, what would the repercussions be on advanced economy output?

In order to help quantify the impact of a substantial downturn in EM markets on advanced economies, we use the simulation results the IMF completed late last year on the consequences of a disruptive interest normalization scenario that ultimately triggers an EM crisis.[4] The results of this scenario suggest that the impact from an EM-led crisis through trade and financial linkages would impose a significant but not devastating impact on AEs (Chart 10). More specifically, a crisis could result in a recession in the weakest of advanced economies – Europe and Japan – although the



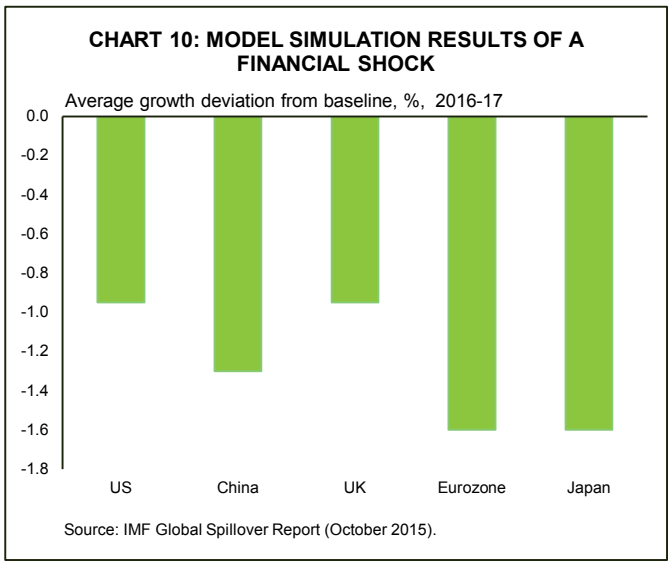
U.S., UK and Canada would not escape unscathed given strong financial and trade relationships between advanced economies (Table 6). The crisis itself would last about a year, assuming that an EM driven crisis would spur a coordinated policy response by global policymakers similar in scope to that done in response to the financial crisis, limiting the long-term damage to the global economy.

While the IMF did not discuss the impact on Canada in its scenario, the economy would also likely suffer a significant hit not unlike that of other AEs. Canada is less directly exposed to EMs, but indirect effects would quickly mount through indirect channels. Chief among them would be weaker U.S. exports. Crudely, a 1 percentage point negative shock to U.S. growth shaves about 0.5 percentage points off Canadian economic growth. Other indirect channels include lower commodity prices, indirect financial linkages with other AEs, and weaker confidence. In addition, the Canadian economy would also face an elevated risk of triggering a deleveraging by households given the high level of household indebtedness. To the extent that a deleveraging generates a negative feedback loop with the broader economy, the effects of an EM-led crisis would significantly deepen.

We caution that as with all model simulations, these results serve to provide guidance rather than be taken as absolute truth.

Bottom line

EM economies have expanded their global footprint rapidly over the past decade. This has resulted in a significant increase in both financial and trade linkages between EMs and advanced economies. As such, the combination of



slowing EM growth and private sector debt has become the #1 risk to the global economy.

In light of this risk, given the process of interest rate normalization underway in the U.S. – even a gradual one – there are fears that a reversal of these capital flows could result in another EM led financial crisis with repercussions for the global economy similar to that of the Asian financial crisis of the late 1990s. Although our analysis suggests that these fears are unfounded given the substantial improvement in the resiliency of EMs with respect to capital flight, it's still worth noting the potential negative implications for advanced economies of an EM crisis.

An EM crisis would impact some advanced economies more than others. In particular, given the strong financial and trade linkages between the Eurozone and Japan with emerging markets, a substantial slowdown in EM growth could very well create a recession in both of these advanced economies. Unfortunately, the U.S. and Canada would not escape an EM crisis unscathed. Although both have much less exposure to EMs relative to Europe and Japan, an EM crisis would impact them through their trade and financial links with Europe and Japan as well as through confidence channels.

TABLE 6: SHARE OF EXPORTS, AND GROSS VALUE ADDED EXPORTS BETWEEN MAJOR AES

as a % of exports	U.S.	Canada	EU-28	Japan
U.S.	-	76.4% (12.2%)	17.4% (3.1%)	18.6% (1.8%)
Canada	15.8% (2.6%)	-	1.8% (0.4%)	1.2% (0.3%)
EU-28	21.1% (3.5%)	7.2% (4.7%)	-	10.4% (2.2%)
Japan	5.0% (1.2%)	2.1% (1.4%)	3.2% (0.8%)	-

Source: Nat'l Statistical Agencies, Haver Analytics, OECD, TD Economics. Gross valued added exports shares in parentheses.
Example of table usage: 76.4% of Canadian exports go to U.S. About 12% of the value added in Canadian exports is generated in the U.S.

Finally, we must emphasize that an EM led financial crisis is a low probability event at this time, and is not our baseline assumption. Nevertheless, our findings serve to illuminate the pockets of EM vulnerabilities as well as to help describe the propagation of an EM crisis onto advanced economies.

Derek Burleton
VP & Deputy Chief Economist, 416-982-2514

Leslie Preston
Senior Economist, 416-983-7053

Fotios Raptis
Senior Economist, 416-982-2556

Admir Kolaj
Economic Analyst, 416-944-6318

Endnotes

1. IMF (Oct. 2015) Global Financial Stability Report.
2. IMF (Oct. 2015) Global Financial Stability Report. Chapter 3.
3. The Telegraph (Dec. 2015) http://www.telegraph.co.uk/finance/newsbysector/banksandfinance/12026277/boe-bank-of-england-stress-tests-on-banks.html
4. For scenario details, please see the IMF's October 2015 Global Financial Stability Report, pages 39 - 47. http://www.imf.org/External/Pubs/FT/GFSR/2015/02/pdf/text.pdf