



Global market structures and the high price of protectionism

Overview panel remarks by Agustín Carstens
General Manager, Bank for International Settlements

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It's an honour to be here today for the closing panel of this event. Thanks to the organisers for such an impressively wide range of topics and papers. One dimension that deserves emphasis in the discussion is the impact of economic openness on market structures. Low barriers to trade and investment let prices reflect availability and steer resources towards more productive industries and firms. This generates widespread economic benefits. International competition is a powerful force in disciplining prices and keeping firms nimble. If we worry about oligopolies and the margins of dominant firms, then we should think twice about undermining the discipline of openness. In my remarks, I will look more closely at trade and protectionism. On the way, we will see how real globalisation and the financial variety are joined at the hip.

Recent measures to reverse globalisation and to retreat into protectionism alarm me, as they no doubt alarm many of you. After decades of setting rules to liberalise trade, we are seeing moves to rip up that rulebook. After decades of striving to open markets, we are seeing attempts to close them. After decades of increasing international cooperation, we are seeing increasing international confrontation. This is reflected in the United Kingdom's vote for Brexit, nationalist movements in Europe, the shift in US trade policy and the current tariff tit-for-tat. But even before this change in the political winds, in part as a fall-out from the post-crisis recessions, non-tariff trade barriers had been on the rise, as the red line shows on the right of Graph 1.

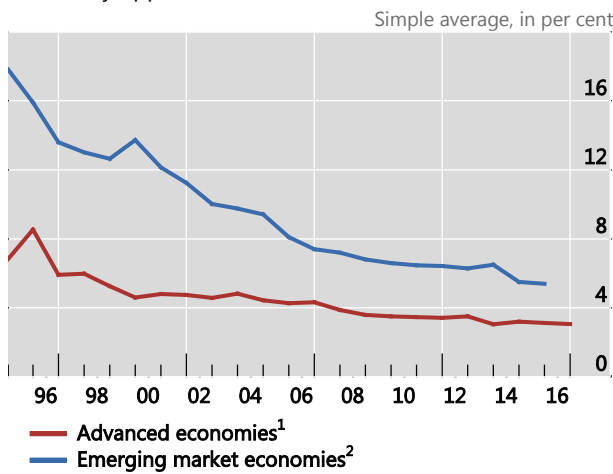
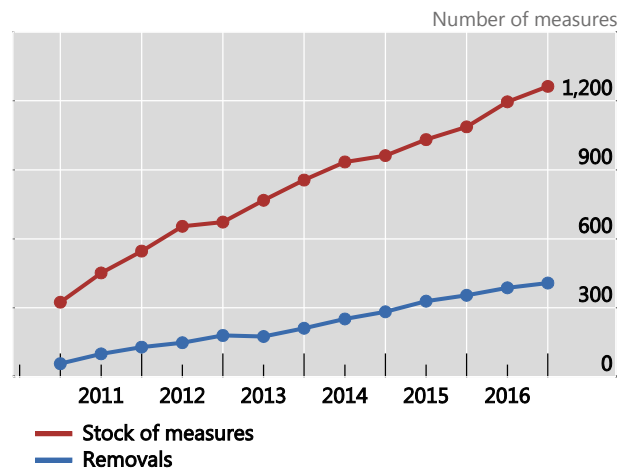
Reversing globalisation puts at risk the real economic gains that have come about through closer trade and investment links. This could increase prices, raise unemployment and crimp growth. Retreating into protectionism also risks unravelling the financial interdependencies that enable and encourage trade and investment links. This threatens to unsettle financial markets and put a drag on firms' capital spending, as investors take fright and financial conditions tighten. Finally, these real and financial risks could amplify each other, creating a perfect storm and exacting an even higher price.



Tariffs have stopped falling while non-tariff barriers are rising

Graph 1

Effectively applied tariffs

Non-tariff measures³

¹ Australia, Canada, Japan, New Zealand, Norway, Switzerland and the United States. ² Brazil, Chile, China, Colombia, India, Indonesia, Korea, Malaysia, Mexico, Peru, the Philippines, Russia, Saudi Arabia, Singapore, South Africa, Thailand and Turkey. ³ Total number of G20-imposed non-tariff measures from 2008. The monitoring of the accumulation of restrictions and the removals started at the end of 2010.

Sources: World Bank; World Trade Organization.

Economic gains at risk

Let's take inflation first: a subject dear to central bankers' hearts. The globalisation of firms and markets has no doubt contributed to the persistently low level of inflation in recent years. Low inflation has been driven by two long-term forces: trade and technology. Fostered by liberalisation, increased trade openness and, in particular, competition from imports produced in countries with lower wages, drove down prices in advanced economies,¹ but also reduced workers' bargaining power. And technological advances, especially automation in manufacturing, have brought down global production costs. These two forces go hand in hand. Innovation and more open markets have radically reshaped global production, replacing locally segmented manufacturing with global value chains (GVCs). These depend on financial openness.

Global trade in *intermediate* goods and services is now almost twice as large as trade in *final* goods and services, as shown in the left-hand panel of Graph 2. GVCs are particularly important in advanced manufacturing, such as cars, as illustrated in the right-hand panel. They have put downward pressure on firms' production costs and market power, keeping in check both prices and, ultimately, aggregate inflation.²

Seeking to turn back the clock and to retreat to a simpler world of local production may undermine the market discipline that helped curb inflation. As shown in the left-hand panel of Graph 3, US steel price futures jumped after the announcement of tariffs on imported steel and aluminium.³ Since

¹ For example, R Auer and A Fischer, "The effect of low-wage import competition on U.S. inflationary pressure", *Journal of Monetary Economics*, vol 57, no 4, 2010, show that low wage import competition lowered US producer price inflation by about half a percent in 1996–2006.

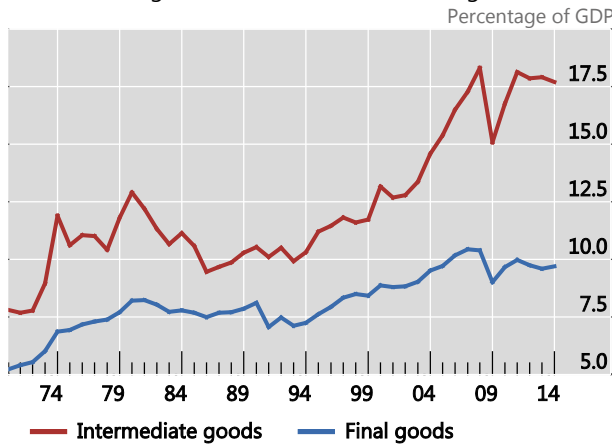
² See R Auer, C Borio and A Filardo, "The globalisation of inflation: the growing importance of global value chains", *BIS Working Papers*, no 602, January 2017.

³ See D Trump, "Remarks by President Trump in listening session with representatives from the steel and aluminum industry", White House, March 2018, www.whitehouse.gov/briefings-statements/remarks-president-trump-listening-session-representatives-steel-aluminum-industry/.

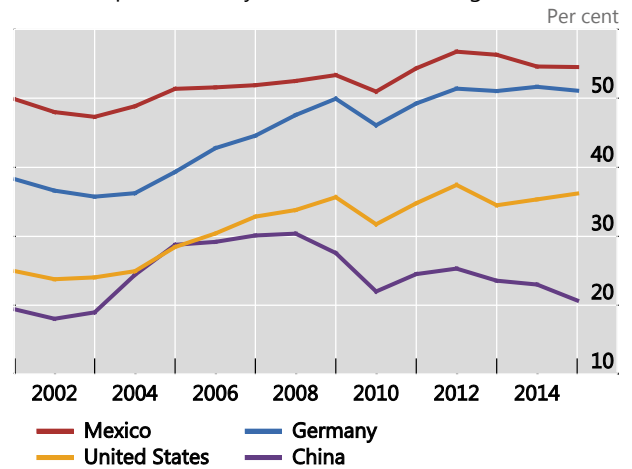
Global value chains evident in global trade and car manufacturing

Graph 2

Intermediate goods and services dominate global trade



Global import intensity of car manufacturing¹



¹ Imports used in all stages of production of final output in the manufacture of motor vehicles, trailers and semi-trailers industry.

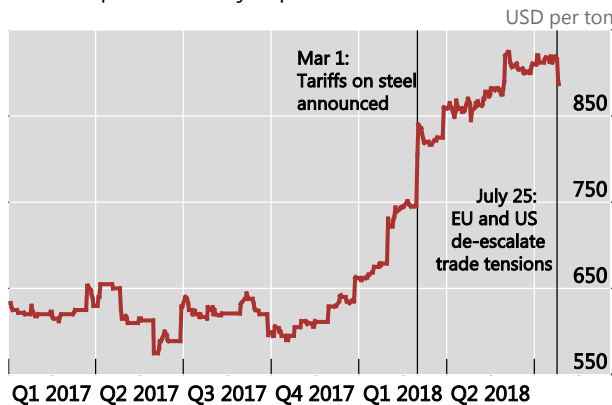
Sources: R Johnson and G Noguera "A portrait of trade in value added over four decades", *The Review of Economics and Statistics*, vol 99, no 5, 2017; M Timmer, B Los, R Stehrer and G de Vries, "An anatomy of the global trade slowdown based on the WIOD 2016 Release", *GGDC Research Memorandum*, no 162, University of Groningen, 2016; IMF, *Direction of Trade Statistics* and *World Economic Outlook*; World Input-Output Database; BIS calculations.

steel remains a key input for construction and manufacturing, these increases will feed into prices. Industries built around GVCs cannot switch from imported to local inputs overnight. Indeed, as shown in the right-hand panel for the examples of China and Mexico, US production costs, especially in cars, would rise with tariffs on imported inputs. Tariffs could inflate prices, hurting both US consumers and US exports.

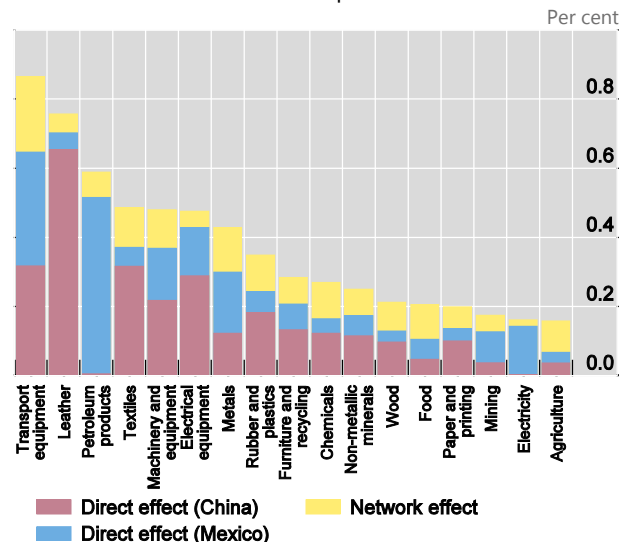
Tariffs on inputs raise production costs

Graph 3

US steel price futures jump on tariff announcement¹



US costs from 10% tariff on imports from China, Mexico²



¹ US Midwest domestic hot-rolled coil steel index futures. ² Direct impact and higher-order effects on US sectoral production costs of a 10% import tariff on imports from China and Mexico.

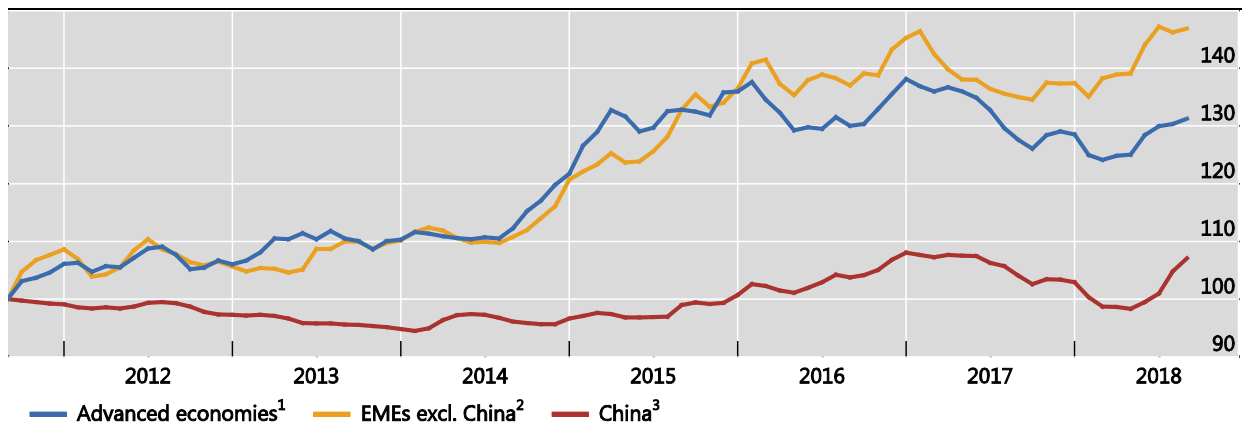
Sources: Bank for International Settlements, *87th Annual Report*, June 2017, Chapter 3; Datastream; NYMEX; World Input-Output Database, Socio-economic Accounts; BIS calculations.



US nominal effective exchange rates

Aug 2011 = 100; rise in index or rate indicates dollar appreciation

Graph 4



¹ A weighted average of the foreign exchange values of the US dollar against G10 currencies plus the Australian dollar. The US dollar's weight for the broad index is about 43%, as of 2018. ² A weighted average of the foreign exchange values of the US dollar against the other currencies in the broad index, with a weight of about 35%, as of 2018. ³ The renminbi's weight for the broad index is about 22%, as of 2018. Sources: Board of Governors of the Federal Reserve System; BIS calculations.

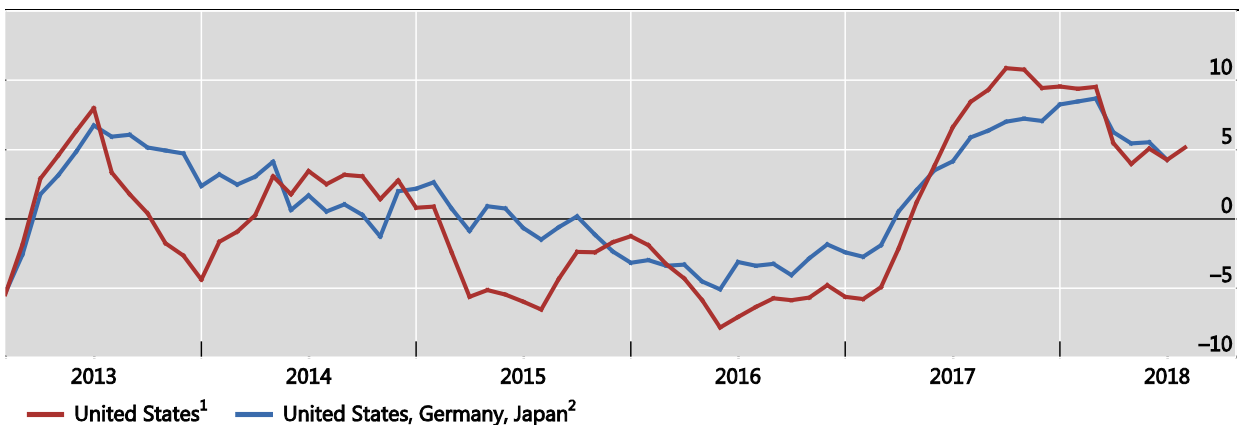
Tariffs could therefore push up US prices, possibly requiring monetary policy to react through more rapid increases in interest rates. Such a response would widen the interest rate premium to the rest of the world and could drive the dollar higher. This would hit US exporters with a double whammy, and emerging market economies with a triple whammy. For emerging markets, a stronger dollar tightens financial conditions, triggers capital outflows and slows growth. As you can see in Graph 4, the dollar is already much stronger against emerging market currencies, other than the renminbi, than it is against those of other advanced economies. An additional twist is that US dollar strength could tempt authorities to impose even higher tariffs or even additional protectionist policies. Can the first salvoes in a currency war be long in coming?

The uncertainties of turning back the clock imperil investment in advanced economies too, as companies put on hold plans for new or expanded production. Orders for capital goods, although volatile, are showing signs of a distinct deceleration this year from last year's brisk growth in the United States, Germany and Japan, as you can see in Graph 5.

Capital goods orders

Per cent; six month-on-six month changes; seasonally adjusted annual rate

Graph 5



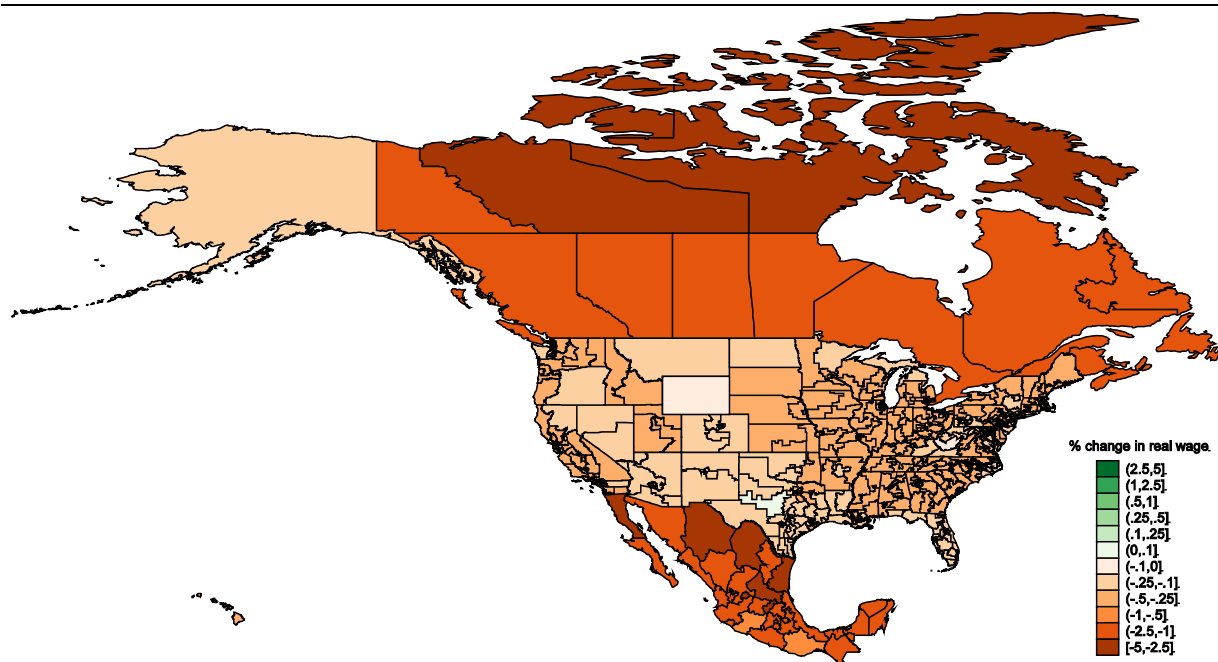
¹ Non-defence capital goods excluding aircraft. ² Weighted averages based on GDP and PPP exchange rates. For Japan, private machinery orders, except for volatile ones. Sources: Datastream; BIS calculations.

To be sure, the distribution of gains from globalisation should be more even. It has left some members of our communities behind. But domestic policies can and should encourage and assist those workers and employers to adjust to the shifting economy. Future trade negotiations could even include commitments to such an effect. This would require advanced economies to counter some of the economic inequality stemming from lower trade barriers with increased spending on education, training and infrastructure.⁴

One thing is certain. Retreating into protectionism, by raising tariffs and ripping up trade agreements, will not fix inequality. For example, as a just-released BIS working paper finds,⁵ revoking the North American Free Trade Agreement (NAFTA) would create only losers, certainly at the national level in Canada, Mexico and the United States, but also generally across North American regions. While higher trade barriers would shield some domestic industries from import competition, the resulting wage gains would be more than offset by the damaging effects of reduced export opportunities and the increased cost of imported inputs for manufacturing firms. This is evident in Graph 6, which displays the percentage change in the average real wage in regions across North America once all three effects are taken into account. Regions that would lose from revoking NAFTA are coloured in red, with darker shading signalling larger wage losses. In fact, there are only three US House districts, out of 435, in which these effects nearly offset each other, shaded white on the map, and we happen to be meeting in one of them: Wyoming.

Regional real wage impact of revoking NAFTA

Graph 6



Note: The graph displays the short-run impact of revoking the North American Free Trade Agreement (NAFTA) – ie reverting to WTO most-favoured-nation tariff rates as well as pre-NAFTA levels of non-tariff trade barriers – on the real wage (percentage changes) for the average worker across US congressional districts, Mexican states, or Canadian provinces. Calculations assume that, in the short run, factors of production cannot move across sectors.

Source: R Auer, B Bonadio and A Levchenko, "The economics of revoking NAFTA", *BIS Working Papers*, no 739, August 2018.

⁴ See T Meyer, "Saving the political consensus in favor of free trade", *Vanderbilt Law and Economics Research Paper* no 16-26, October 2016, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2853689.

⁵ The regional short-term wage changes at the US congressional district level shown in Graph 6 are from R Auer, B Bonadio and A Levchenko, "The economics of revoking NAFTA", *BIS Working Papers*, no 739, August 2018, who quantify general equilibrium changes in output and prices under the assumption that factors of production cannot move across sectors, ie that lower revenues in an industry lead to lower wages.

Compounding financial risks

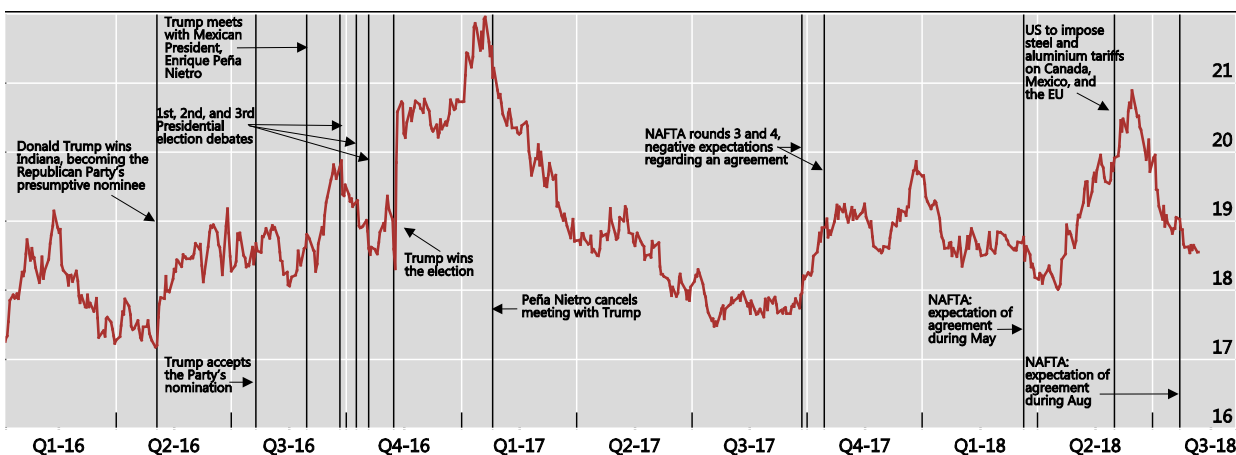
Another source of vulnerability lies in the financial links that have increased with new trading relationships and production chains. Trade in commodities and finished goods requires only simple financial services, such as cross-border payments and foreign exchange. But complex trading relationships like GVCs need complex financial services to glue production processes together.⁶ The far-flung operations of multinational firms, which account for an increasing share of trade, require lots of working capital and entail lots of exposure to foreign currency risk.⁷ More complexity is added by the financial transactions needed to manage these positions, including derivatives and hedging strategies to offset currency risk.

All these links rely on the dollar, which remains dominant in trade transactions or bank loans for working capital, and in international banking or securities markets more generally.⁸ Indeed, in currency markets, the dollar prevails even more in the swap and forward markets than in the spot market.

Recent events highlight the close connections between the real and the financial, and the way financial market participants think about tomorrow in trading today. Graph 7 shows how the Mexican peso/dollar rate responds to news about its major trading relationship. The peso weakened – shown as an upward move – late last year as expectations for a NAFTA deal soured. It strengthened in March amid optimism about a deal, and fell sharply after steel and aluminium tariffs were imposed on 1 June.

How the Mexican peso/dollar rate reacts to news

Graph 7



Note: More pesos per dollar indicates peso depreciation.

Source: Datastream.

⁶ See V Bruno, S-J Kim and H S Shin, "Exchange rates and the working capital channel of trade fluctuations", *BIS Working Papers*, no 694, January 2018; Bank for International Settlements, *87th Annual Report*, June 2017, Chapter VI, "Understanding globalisation".

⁷ See H S Shin, "Globalisation: real and financial", June 2018, presentation on the occasion of the Bank's Annual General Meeting, Basel, 25 June 2017, www.bis.org/speeches/sp170625b.htm (video).

⁸ See G Gopinath, "The international price system", proceedings of the Federal Reserve Bank of Kansas City Jackson Hole symposium, August 2015; G Gopinath and J Stein, "Banking, trade, and the making of a dominant currency", *NBER Working Papers*, no 24485, April 2018; S Bahaj and R Reis, "Central bank swap lines", *Discussion Papers*, no 1816, Centre for Macroeconomics, London School of Economics, 2018.

Equity investors weigh costs of protection

Cumulative percentage changes from 9.30 am, Eastern Time, on 25 July 2018

Graph 8



Source: Bloomberg.

And the nexus between the financial markets and the threat of protectionism extends to advanced economies. For example, Graph 8 shows US-based carmakers' share prices on July 25. Early on, they fell sharply as General Motors⁹ (in red) cut its profit guidance, citing higher commodity prices. Later that day, after a meeting between US President Donald Trump and European Commission President Jean-Claude Juncker ended in a surprise de-escalation of trade tensions,¹⁰ the shares rose again. European carmakers' stocks also rose, while the euro appreciated against the dollar.

These examples show how trade tensions can weaken currencies, with knock-on effects for the real economy. This occurs not only through the standard channel of making imports more expensive, but through financial channels too. In emerging markets, if dollar debts do not match dollar cash flows, a stronger greenback makes borrowers more risky in the eyes of lenders. This leads them to restrict the supply of credit. Graph 9 shows how the dollar's broad exchange rate is negatively correlated with the growth of dollar bank lending to borrowers outside the United States. Dollar appreciation can reduce credit supply and demand and tighten financial conditions for many emerging market firms, hurting employment and investment.¹¹ Reducing dollar credit may also undermine GVCs. Among those with a particular vulnerability to dollar appreciation are exporters who rely on banks that in turn depend on wholesale dollar funding.

⁹ See General Motors, "Q2 2018 Results", July 2018, <https://media.gm.com/content/dam/Media/gmcom/investor/2018/jul/GM-2018-Q2-Earnings-Deck.pdf>.

¹⁰ See D Trump and J-C Juncker, "Remarks by President Trump and President Juncker of the European Commission in Joint Press Statements", White House, July 2018, www.whitehouse.gov/briefings-statements/remarks-president-trump-president-juncker-european-commission-joint-press-statements/.

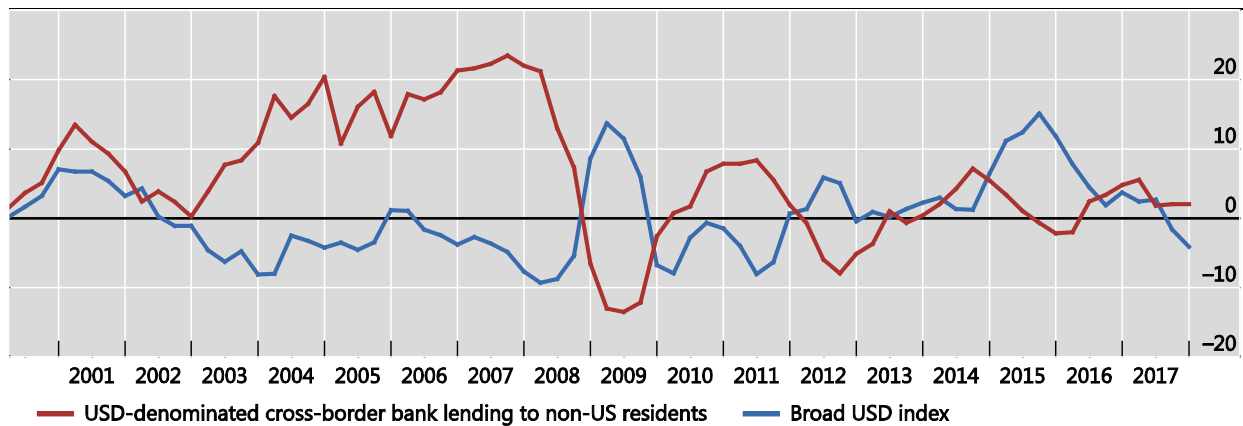
¹¹ See S Avdjiev, V Bruno, C Koch and H S Shin, "The dollar exchange rate as a global risk factor: evidence from investment", *BIS Working Papers*, no 695, January 2018.



Growth of USD-denominated cross-border bank lending and the broad USD index

Annual change, in per cent; rise in dollar index indicates dollar appreciation

Graph 9



Sources: BIS locational banking statistics and nominal effective exchange rate indices.

A perfect storm?

Today, we must recognise the potential for real and financial risks to interact, to intensify and to amplify each other. Protectionism could set off a succession of negative consequences. If all the elements were to combine, we could face a perfect storm.

Consider that non-US banks provide the bulk of dollar-denominated letters of credit, which in turn account for more than 80% of this source of trade finance.¹² The Great Financial Crisis highlighted the fragility of this setup, since non-US banks depend on wholesale markets to obtain dollars.¹³ Ten years on, we should not forget how the dramatic fall in trade finance in late 2008 played a key part in globalising the crisis. Any dollar shortage among non-US banks could cripple international trade.¹⁴

On top of that, trade skirmishes can easily escalate into currency wars, although I hope that they will not. As we saw earlier with Mexico, imposing tariffs on imports tends to weaken the target country's currency. The depreciation could then be construed as a currency "manipulation" that seemingly justifies further protectionist measures. If currency wars break out, countries may put financial markets off-limits to foreign investors or, on the other side, deliberately cut back foreign investment, politicising capital flows.

In addition, we must be mindful of long-observed knock-on effects from tighter US monetary conditions, given the large stock of dollar borrowing by non-banks outside the United States, which has now reached \$11.5 trillion.¹⁵ Policymakers in advanced economies should not shrug off the growing evidence that abrupt exchange rate depreciations reduce investment and economic growth in emerging

¹² See International Chamber of Commerce, *ICC Global Survey 2018: Securing future growth*, May 2018, <https://iccwbo.org/publication/global-survey-2018-securing-future-growth/>.

¹³ See Committee on the Global Financial System, "Trade finance: developments and issues", *CGFS Papers*, no 50, January 2014; Gopinath (2015) op cit.

¹⁴ See I Aldosoro, E Ehlers and R McCauley, "Non-US banks' global dollar funding grows despite US money market reform", *BIS Quarterly Review*, March 2017, pp 22–3: the authors show that foreign banks were able to replace hundreds of billions of dollar funding, but some of the adaptations were one-off.

¹⁵ Bank for International Settlements, *BIS global liquidity indicators at end-March 2018*, July 2018, www.bis.org/statistics/gli1807.htm.



market economies. This has implications for everybody, in that weaker economic activity reduces demand for exports from advanced economies. That would close the circle of trade tensions affecting the real economy via the financial channel of exchange rates.

Pain not gain

To wrap up, in analysing market structures, we need to take the international dimension seriously. We also need to pay closer attention to the intersection of real and financial factors. Reversing globalisation and retreating into protectionism will endanger the gains of several decades, by weakening the discipline that international competition exerts on powerful domestic players. When assessing these risks, we should not underestimate the potential for real and financial risks to amplify each other in unexpected ways. The vulnerabilities introduced by interconnected market structures make the topic of protectionism a core concern for central banks. To reverse and to retreat is to barricade the bridges between us.

It's paradoxical that the United States is starting to put obstacles in the road at a time when its economy is firing on all cylinders. Even looking through the short-term boost to GDP in the latest quarter¹⁶ – ironically enough, partly owing to companies bringing forward cross-border shipments to skirt tariffs – its short-term prospects are promising. But in the long term, protectionism will bring not gain, but only pain. Not just for the United States, but for us all.

¹⁶ Bureau of Economic Analysis, "Gross Domestic Product: Second Quarter 2018 (Advance Estimate), and Comprehensive Update", *National Income and Product Accounts*, July 2018, www.bea.gov/newsreleases/national/gdp/gdpnewsrelease.htm.