



FOR BETTER OR WORSE, HAS GLOBALIZATION PEAKED?

Understanding Global Integration

Citi GPS: Global Perspectives & Solutions

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FOR BETTER OR WORSE, HAS GLOBALIZATION PEAKED?

Understanding Global Integration

Kathleen Boyle, CFA
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The average person's fundamental understanding of the economy is usually closely tied to their personal experience. If they're working and able to pay their bills then the economy is doing okay. If they're able to get an extra vacation in during the year and plan to take the kids to a theme park or have saved up enough money to buy a new car, then the economy is doing better than okay. And when bad times hit and jobs become scarce, paychecks become stretched, and rainy day funds are dipped into to cover basic expenses, the economy is bad.

Without identifying it by name, the average person actually has a good understanding of the economic cycle — peaks and troughs, expansions and contractions. Since the 1980s, an added piece to the economic narrative was that globalization would help drive the economy and make the transition between economic ups and downs a bit smoother as global corporations would have a bigger marketplace for their goods and services. Consumers would benefit from a larger variety of imported goods at their local stores and, as corporates set up global value chains, they would also benefit from lower prices on the goods they purchased. In the end, the selling point was the world would be a wealthier place as the rising tide of globalization would lift all boats.

However, not everyone believes globalization actually delivered on its promise. Manufacturing companies in advanced economies were able to create global supply chains utilizing lower cost workers in different parts of the world. And yes, those products came back to the consumer at a lower price, but that didn't matter if you were the one who lost your job when the factory moved overseas. A decline in manufacturing jobs, an increase in inequality, and lower productivity growth entered the economy and fingers were pointed at globalization.

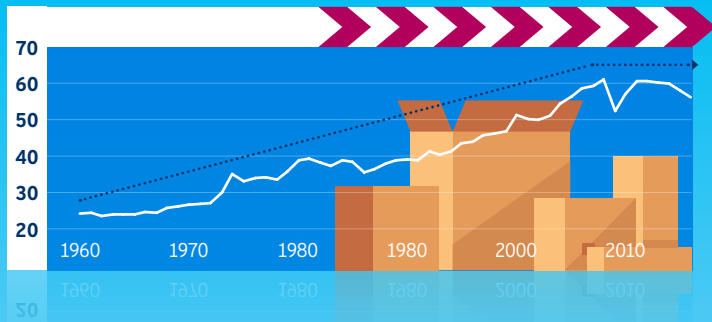
But was globalization really to blame? Should the fact that many measures show globalization peaked around 2008 be welcomed? In the report that follows, Catherine Mann, Citi's Global Chief Economist reviews the advantages of globalization in its many guises but also takes a step back to place globalization against the backdrop of rising disparities in outcomes including income and wealth, and across generations, firms, and regions.

Instead of blaming globalization for the ills of the economy, Ms. Mann believes the concern should be reinterpreted as a domestic policy question. Peak globalization means the pie is no longer getting bigger and portends fewer resources to address inequalities, regardless of their cause. From this perspective, the problem is not too much globalization, but too little. To address the adjustment and distributional challenges facing the economy, we need both to reinvigorate and to deploy domestic policies to ensure the gains are widely shared.

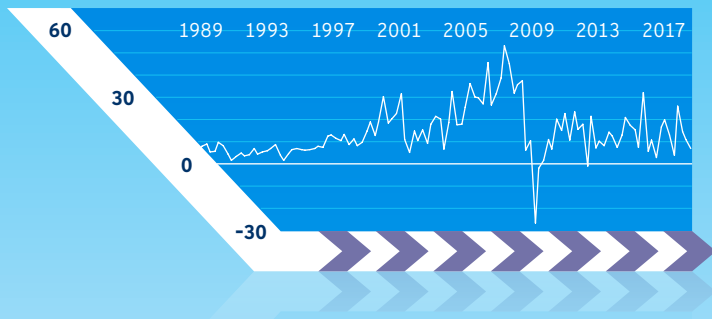
GLOBALIZATION: NOT TOO MUCH, BUT TOO LITTLE

MULTIPLE METRICS SHOW GLOBALIZATION PEAKED IN THE EARLY 2000s

World Trade intensity (exports + imports as % of GDP) has stalled at 60% after rising at an increasing rates during the 1980s

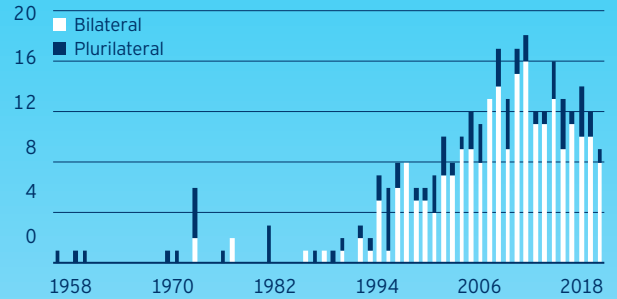


Cross-asset financial flows (sum of assets and liabilities as share of GDP) peaked in 2007

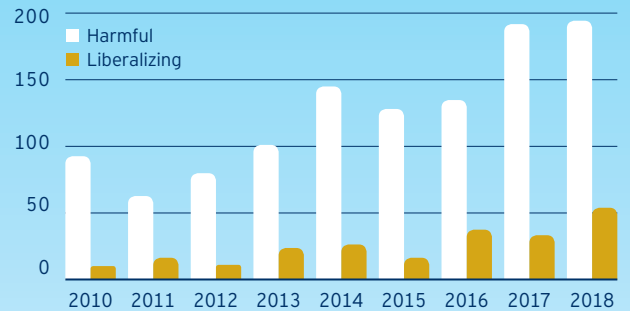


Source: World Bank, IMF, WTO, Global Trade Alert

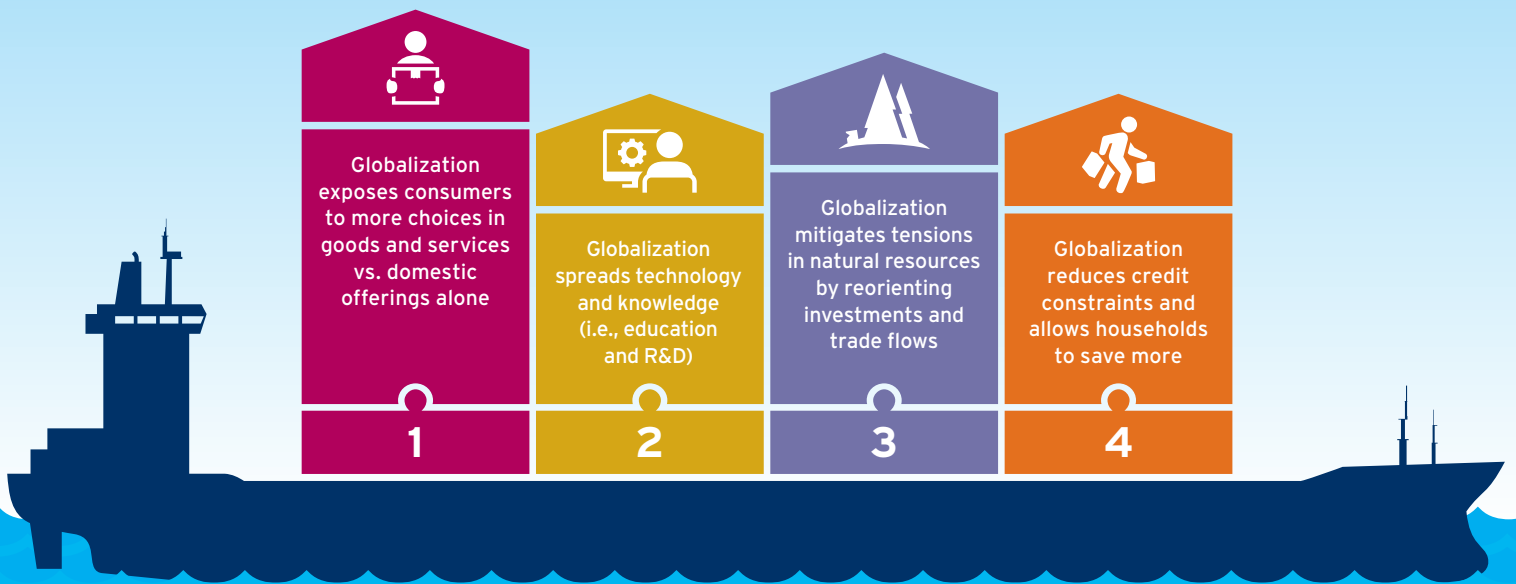
The number of new Regional Trade Agreements peaked in 2006



The number of harmful trade interventions have outpaced liberalizing trade interventions since 2010



DOES IT MATTER THAT GLOBALIZATION HAS PEAKED? YES, WE LOSE OPPORTUNITY

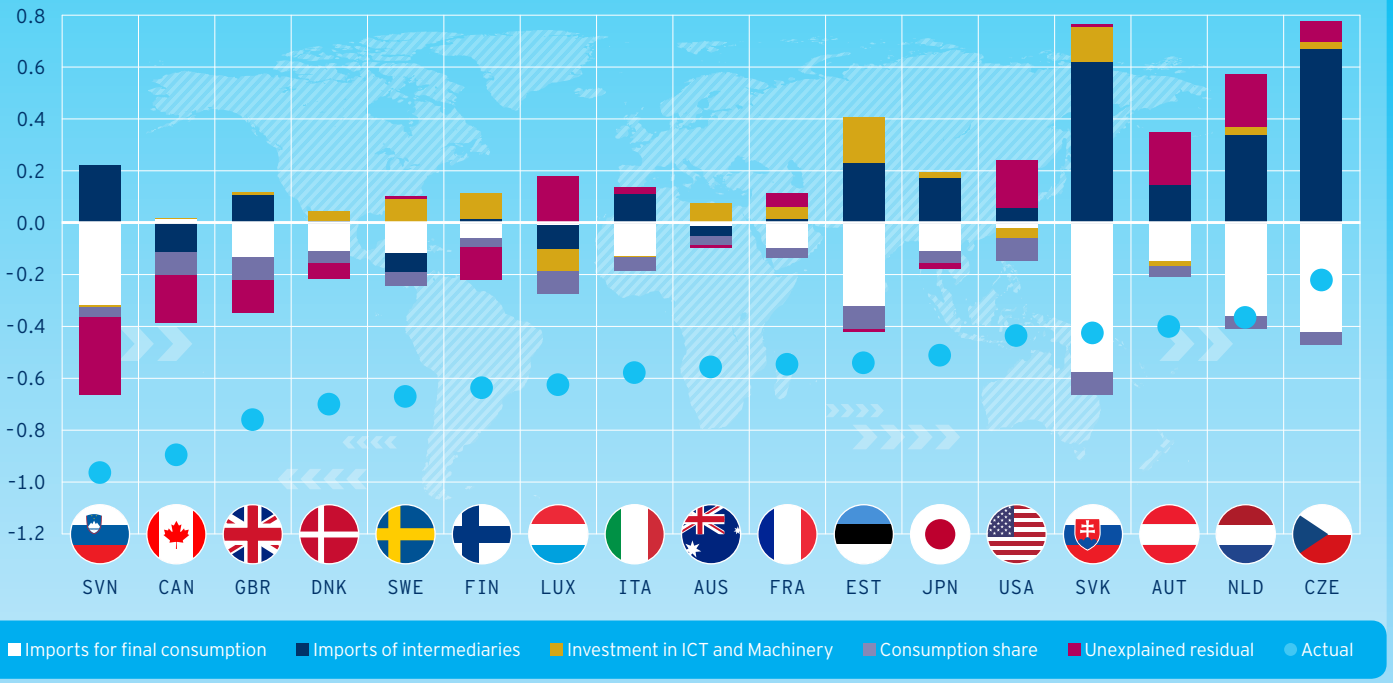


GLOBAL REAL GDP HAS GROWN TO ALMOST \$20 TRN WITHOUT A RECOVERY IN GLOBALIZATION BUT THE ECONOMIC ILLS OF JOB LOSSES AND INEQUALITY REMAIN




SO MAYBE TRADE ISN'T TO BLAME?

Globalization is blamed for the loss in manufacturing jobs in advanced economies but investment in technology and a shift in preferences towards services vs. goods are larger contributors



Source: OECD, STAN database

THE WAY FORWARD IS INCREASED GLOBALIZATION

- 1  There is a direct relationship between trade openness and productivity
- 2  Improve strategies to avoid crises i.e. adopting the OECD's Vulnerability Indicators
- 3  Deploy domestic policies to mitigate adjustment costs and disperse gains



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Executive Summary

If globalization has peaked, is this to be welcomed or countered?

By many metrics, global integration has peaked. Is this a natural evolution — there is a maximum desired share of foreign products in the consumption basket, a maximum fragmentation of production into global value chains, a maximum diversification of financial portfolios? Is this globalization realism — global integration has gone too far anyway, with jobs lost, regions hurt, and finances in disarray? The question really is: If globalization has peaked, is this to be welcomed or countered?

Trade flows have stalled and some linkages and measures of globalization actually are in retreat.

This Citi GPS report starts by examining multiple measures of globalization (trade, financial flows, human movement, etc.), ultimately concluding that globalization by many metrics seems to have peaked during the past decade. Whereas globalization through trade flows receives much of the emphasis, other linkages and measures of globalization also have stalled and some are in retreat. Based on this assessment, we move next to, “So what?” Here, we review the advantages of globalization in its many guises, and conclude with some numerical references on the aggregate benefits of globalization.

Synergies between trade and technology, plus a shift towards services consumption, together yield winners, losers, and inequalities.

We then take a step back to place globalization against a backdrop of rising disparities in outcomes including income and wealth, and across generations, firms, and regions. Regardless of the aggregate benefits of trade, the gains have not been widely shared. But, this also begs the question: How much is trade to blame for the disparities? Synergies between trade and technology, as well as trends toward services consumption as economies get richer (e.g. changes in ‘tastes’ as people age and economies develop) can make it difficult to identify just a globalization effect.

The three forces – trade, technologies, and tastes – yield similar patterns of winners, losers, and inequalities. So, the globalization concern should be reinterpreted as a domestic policy question — have we failed to deploy policies to address disparities, or are policies simply less effective in the face of the three forces at work?

‘Peak globalization’ portends fewer resources to address inequalities, regardless of their proximate cause. From this vantage point, the problem is not too much globalization, but too little.

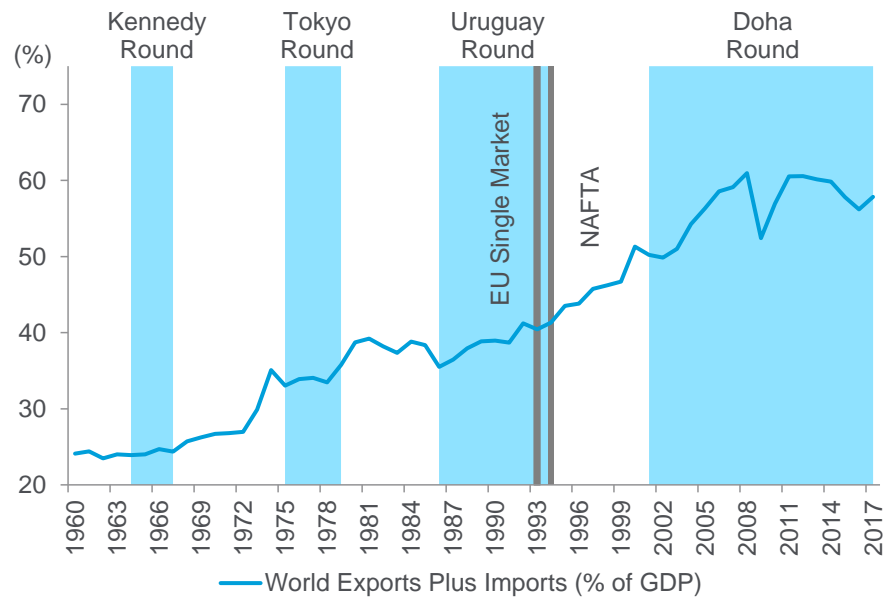
Globalization does ‘expand the pie’ and is not unique in generating distributional challenges. So, if globalization has peaked, this portends fewer resources to address inequalities regardless of their proximate cause. From this perspective, the problem is not too much globalization, but too little. To address the adjustment and distributional challenges, we need both to reinvigorate globalization and to deploy domestic policies to ensure that the gains are widely shared.

Trade Integration in Retreat

World trade intensity has stalled since the financial crisis.

World trade intensity, measured in several ways, rose until around the time of the financial crisis, at which point it stalled. One metric, exports plus imports as a share of global GDP, rose fairly steadily, and then at an increasing rate from the 1980s, almost doubling from the 1970s to stall at about 60% of world GDP in the late 2000s. Since then, this measure of integration has retreated (Figure 1). Similarly, the elasticity of GDP with respect to trade, i.e., how much an increase GDP growth is associated with an increase in trade growth, peaked in the latter part of the 1990s before slowing down. By these metrics, globalization has peaked.

Figure 1. Global Trade Volume as a Percent of GDP, (%) 1960-2017



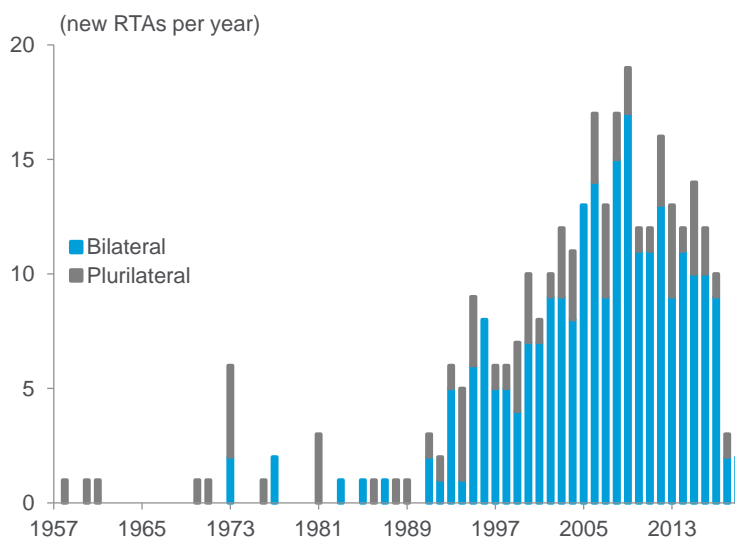
Source: World Bank, Citi Research

Stalled progress on trade liberalization, with trade negotiations peaking in the mid-2000s, is a factor in declining trade intensity.

Stalled progress on trade liberalization is one reason for the decline in trade intensity, which in turn is related to the coverage of trade negotiations and participants. Trade liberalization is the removal or reduction of restrictions or barriers on the free exchange of goods and services between nations. One way to increase trade liberalization is through trade agreements, which can take three primary forms: (1) multilateral – an agreement with many nations; (2) bilateral – an agreement between two nations; and (3) plurilateral – an agreement between a number of nations. Following World War II, the General Agreement on Tariffs and Trade (GATT) was created with the purpose of promoting international trade through a reduction in trade barriers, which addressed barriers to trade in goods. Agreements were devised through a series of rounds of talks over the subsequent years with the last successful round, the Uruguay Round, ending in 1994 after 8 years of discussions. This was the last successful multilateral trade negotiation as the Doha Round, the ninth round which started in 2001, ended with negotiations breaking down in 2008.

The Uruguay Round ushered in the World Trade Organization (WTO) (successor to the GATT) and the General Agreement on Trade in Services (GATS). Since that time, as multilateral negotiations stalled, bilateral agreements skyrocketed, from one or two per year in the early 1990s to about 15 per year in the mid-2000s; plurilateral agreements also flourished. Bilateral and plurilateral agreements have been described as either stepping stones or stumbling blocks to more extensive liberalization. Either way, they stick to sectors where deals can be reached, avoiding deeper reforms which would generate the greatest gains (but also adjustment challenges).¹ In any case, the mid 2000s saw the peak of trade negotiations of all types (Figure 2).

¹ Baldwin, Richard and Elena Seghezza (2007) Are Trade Blocs Building or Stumbling Blocks? New Evidence, C.E.P.R. Discussion Papers, CEPR Discussion Papers.

Figure 2. Evolution of New Bilateral and Plurilateral Regional Trade Agreements, 1957- 1Q 2019

Note: Regional Trade Agreements include Free Trade Agreements (FTAs), Economic Integration Agreements (EIAs), Customs Unions (CUs), and Partial Scope Agreements (PSAs)
 Source: WTO Regional Trade Agreements Information System, Citi Research

Services trade is growing more rapidly than trade in goods, is more locally-tied so more globally dispersed, and is more consumer-oriented so more trade-cycle resilient. But, it has been liberalized less than manufactures.

An important feature of trade over the last few decades is the rising importance of international trade in services, including activities such as financial & insurance services, information & communication technologies, engineering, marketing, and tourism and transportation services. While accounting for only about 25% of global trade, cross-border services trade has been growing more rapidly than trade in goods, is more locally-tied so is more globally dispersed across many markets (as compared with production concentration into 'factory' North America, Asia, and Europe for goods), and is more consumer-oriented so is more trade-cycle resilient (e.g. is less tightly correlated with and is dampened relative to the business cycle). The latter two characteristics come from the fact that many services are domestically anchored by consumer preferences. Even with increased trade integration, services are less prone to creating winners and losers.

The WTO General Agreement on Trade in Services (GATS), created as part of the Uruguay Round, was an important step towards deepening global integration in services, but the WTO needs to institutionalize the presumption of openness for services similar to that which is the presumption for trade in goods under the GATT. E.g. the presumption should be that services can be traded on a most-favored-nation basis by countries unbound by restriction, unless a country has specifically derogated a service from the list.

Services account for 50% of value added in manufacturing exports, so more efficient services through liberalization improves competitiveness.

What is the incentive to liberalize services? Services account for about 50% of the value added in manufacturing exports. Liberalization that enhances the competitiveness of services increases the competitiveness of manufacturing through two channels: (1) by reducing the cost of services inputs and (2) by enhancing inter-firm competition in the sector.² Therefore, to deepen global trade intensity, further liberalization by all countries in the services sector will be needed.³

² OECD (2017) Services Trade Policies and the Global Economy, OECD.

³ Hoekman, Bernard M. and Aaditya Mattoo, (2013) Liberalizing Trade in Services: Lessons from Regional and WTO Negotiations, European University Institute, Robert Schuman Center for Advanced Studies, RCSCAS 2013/34.

Trade intensity has also been hurt by the unraveling of GVCs.

If GVCs unravel and protectionist pressures increase, it will be more difficult for poorer economies to achieve higher living standards.

Another facet of the decline in trade intensity in recent years is the unraveling of global production networks; so-called global value chains (GVCs).⁴ Global production networks, as well as managerial and contractual relationships among firms are a source of technology transfer, economies of scale, and cluster economics, all of which support productivity growth. The most productive firms are those that are part of global families, linked through hub-and-spoke networks. Exporting to a multinational corporation (MNC) is associated with a greater productivity gain than importing from one, which suggests the importance of domestic reforms to get the most from global integration.

The limits of GVCs might have been reached within some sectors and economies given enhanced concern for supply chain vulnerability and desire for supply chain transparency. For example, a variety of disasters exposed supply chain vulnerabilities in the auto, IT, and apparel supply chains and firms are reassessing time-to-market and brand value of far-flung and opaque supply chains. Changing technology of 3D printing may also affect supply-chains.

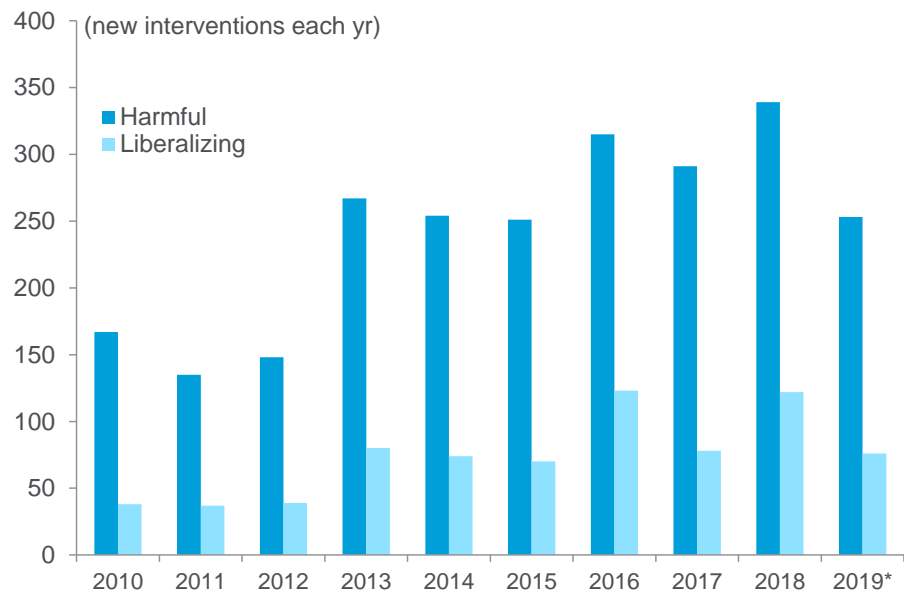
However, limiting or unraveling supply chains before poorer countries have yet to gain a foothold in global trade undermines their prospects for economic integration, which both constrains their own economic growth to higher living standards and limits the expansion of their market to purchase complex products from advanced economies.⁵ Global production networks that disintegrate on account of protectionist policies, such as tariff measures, subsidies for domestic companies, and government-imposed technology transfer from foreign companies sacrifice productivity improvements and competitiveness gains for all economies touched by protection. By various metrics, trade liberalizing efforts have weakened and in some countries harmful trade practices have worsened.⁶ (Figure 3)

⁴ Haugh, David, Alexandre Kopoin, Elena Rusticelli, David Turner, Richard Dutu, (2016) "Cardiac Arrest or Dizzy Spell: Why is World Trade So Weak and What Can Policy Do About It? OECD 2016 Economic Policy Paper. This estimation follows the same pattern as the University of International Business and Economics GVC index presented in Figure 2.7 of the Global Value Chain Report 2017.

⁵ World Bank (2017) Measuring and analyzing the impact of GVCs on economic development. Washington DC: World Bank Group.

⁶ Criscuolo, Chiara and Johnathan Timmis (2017) The Relationship Between Global Value Chains and Productivity, International Productivity Monitor, no 32, Spring.

Figure 3. New Trade Interventions per Year by All Countries: Harmful vs. Liberalizing



*Through May 21, 2019. Note: harmful measures include contingent trade-protective measures, subsidies, enacting tariff measures, etc. Liberalizing measures include lowering tariff measures, lowering export subsidies, etc. Source: Global Trade Alert

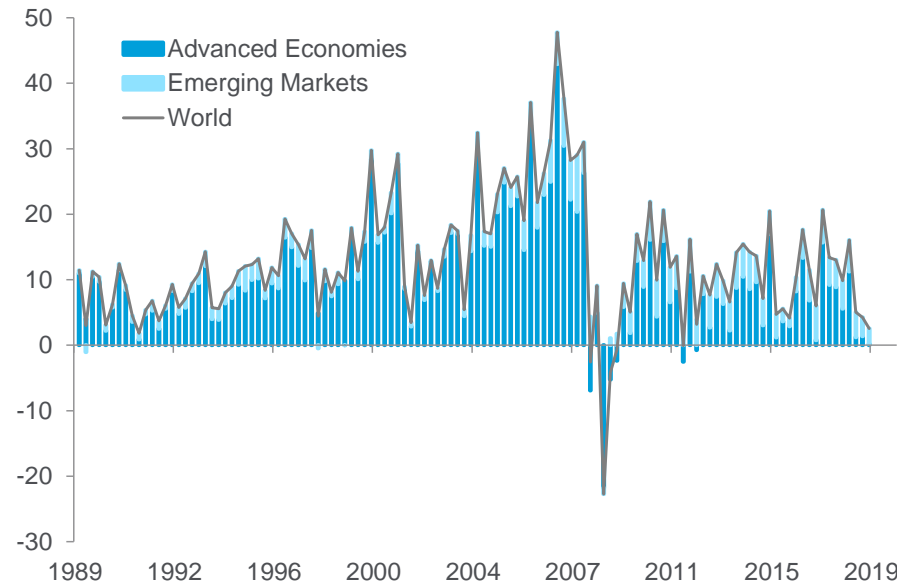
Overall cross-border financial flows peaked in 2007 and have retreated since. This is not completely a negative outcome, given the costs of financial crises.

Financial Integration in Retreat

Cross-border financial flows, as measured by the sum of assets and liabilities as a share of GDP, peaked in 2007. The retreat was mostly by advanced economies with stabilized exposures in emerging markets other than China. An overall retreat is not completely a negative outcome in that less financial integration could moderate what has been an important transmission channel for economic crisis. On the other hand, global financial integration supports trade and investment, enables borrowing and lending to smooth consumption and savings, as well as provides diversification gains in the financial portfolio of assets.⁷

⁷ Caldera, Aida and Alain de Serres, Phillip Gori, Oliver Rohn (2017) Economic Resilience: Trade-offs between growth and financial fragility, VOX CEPR Policy Portal.

Figure 4. Total Assets and Liabilities as a Percentage of GDP, 1990-2018



Source: IMF Balance of Payments Statistics, Citi Research

The types of financial integration have changed and data suggest the non-bank private sector may now be the dominant channel for financial turbulence.

The types of financial integration have changed, which may help tip the balance of gains versus vulnerabilities. Bank foreign claims and bonds issued in international markets peaked in 2007 and have decreased ever since. Other types of global international claims, including non-bank financial flows, peaked in 2007 and have been steady ever since. Lower global connectivity through banks could make contagion and tax-payer consequences of financial crisis less severe by reducing government responsibility for 'too-big-to-fail' institutions.

But the data suggest that the non-bank private sector may now be the dominant channel for transmission of financial turbulence, and the nature of networks and implicit support are less well known in this area.⁸ Currency, maturity, and liquidity mismatches can be present in non-bank finance. Certain types of macro-prudential policies (attention to portfolio debt flows and real estate exposures) could moderate the risks while not limiting the upside gains from financial integration.⁹

International reserves — an insurance policy against financial crisis, but also a drag on growth — appear to have peaked

Another type of financial integration which appears to have peaked is International reserves. International reserves are an 'insurance policy' against unstable financial flows, although countries, to different degrees, use this insurance policy to offset movements in foreign capital. Excess reserves can be viewed as a drag on global demand and on a country's potential growth, in that they represent savings that are invested in low-return financial investments rather than productivity-enhancing real investments.¹⁰ Policies to support financial integration with less fear of crisis could reduce the holding of excess reserves and deliver a potential benefit of real investment to support potential output and growth.

⁸ BIS (2018) Global Shadow Banking Monitoring Report 2017.

⁹ OECD (2015) How to restore a healthy financial sector that supports long-lasting, inclusive growth? OECD Economics Department Policy Note no. 27.

¹⁰ IMF, Assessing Reserve Adequacy <https://www.imf.org/external/np/spr/ara/> accessed November 20, 2018.

People Flows, Remittance Flows, and Digital Flows Have Not Peaked

Over the last 20 years, flows of people and remittances have risen with the bulk of the increase in the migrant population within advanced economies.

Increased migration and global tourism mean that, unlike products or finance, global people flows and associated expenditures and remittances are rising. Documented migration more than doubled over about the last 20 years to reach about 3% of the global population. In the last decade, the bulk of the increase in the migrant population is within the advanced economies.

Increased migration is beneficial to economies over the long run and is conducive to native-born and overall prosperity. In Germany and the U.K., for example, if immigration had been frozen in 1990, real GDP in those economies would have been around €155 billion and £175 billion lower respectively in 2014.¹¹ Financial flows associated with migration rose dramatically throughout the 2000s and even after the financial crisis. Remittance flows have followed growth cycles since the financial crisis, and currently amount to about \$700 billion. Remittances and associated migrants contribute to production and consumption in the host country support consumption in the home country, but also can have the downside of undermining productivity at home.

International tourism has increased in the same period...

Temporary flows of people — i.e., international tourists — have boomed; more than doubling over the last 20 years to about 1.2 billion people. Tourism arrivals in Asia-Pacific had the most growth, while the bulk of tourist arrivals were within the European Union. Financial flows associated with tourism are also increasing. In 2017, the direct contribution of tourism to global GDP was about 3%, increasing at rate of about 4% per year in real terms. Indirect contribution to GDP (via local services such as restaurants and hotels) is more than double the direct contribution.

...and digital flows continue to rise; at least for now.

Digital flows also continue to rise, with the world becoming more and more interconnected through digital platforms. Global IP traffic — the amount of data flowing across the Internet in measured in exabytes per month — normalized by global GDP, has been accelerating. So too, however, have concerns regarding privacy and security of platforms and data, as well as cyber intrusions for commercial gain. As these concerns heighten, deeper digital integration may be at risk.

U.S. Global Integration Has Peaked, but the Aggregates Mask Dynamism

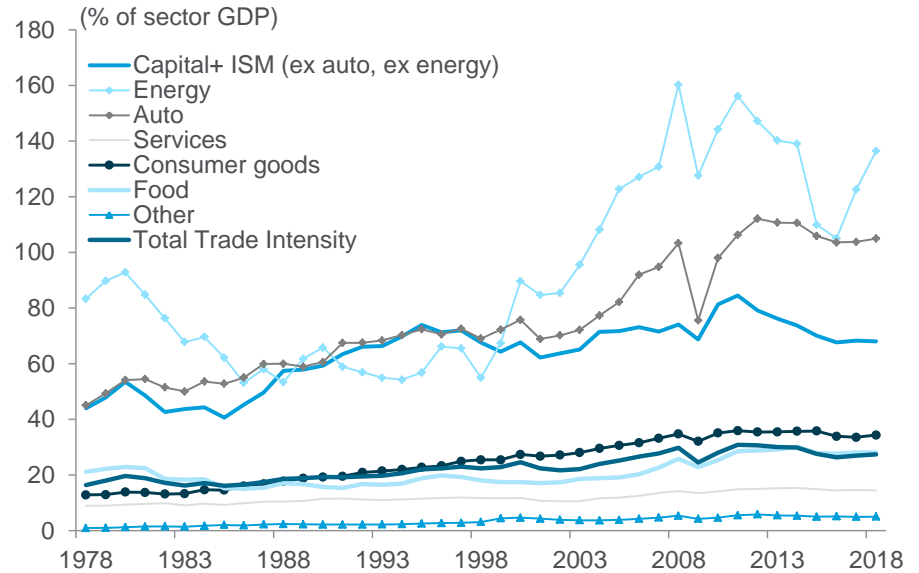
U.S. data look similar to global averages in both trade and finance.

Just as metrics of global integration have peaked, so too have many metrics of U.S. trade and finance. But the U.S. has a more dynamic pattern of trade intensity driven by cyclical peaks and valleys in the intensity of energy and of industrial products, i.e., capital goods and non-energy industrial supplies & materials. These peaks and valleys are driven by fragmentation, technology, and macroeconomic cycles.

On the whole, longer GVCs for more complex products such as capital goods and autos are reflected in higher intensity of trade as compared to less complex products, such as consumer goods and food, because the former products cross borders many times before they reach their final use. Although services trade has increased rapidly, services trade intensity remains very low: Overall U.S. trade intensity is about 27% (in 2017). Services trade intensity is about 7%.

¹¹ Citi GPS (2018) Migration and the Economy.

Figure 5. U.S. Trade Intensity by Important Sector (Exports + Imports as % of Sector GDP), 1978-2018

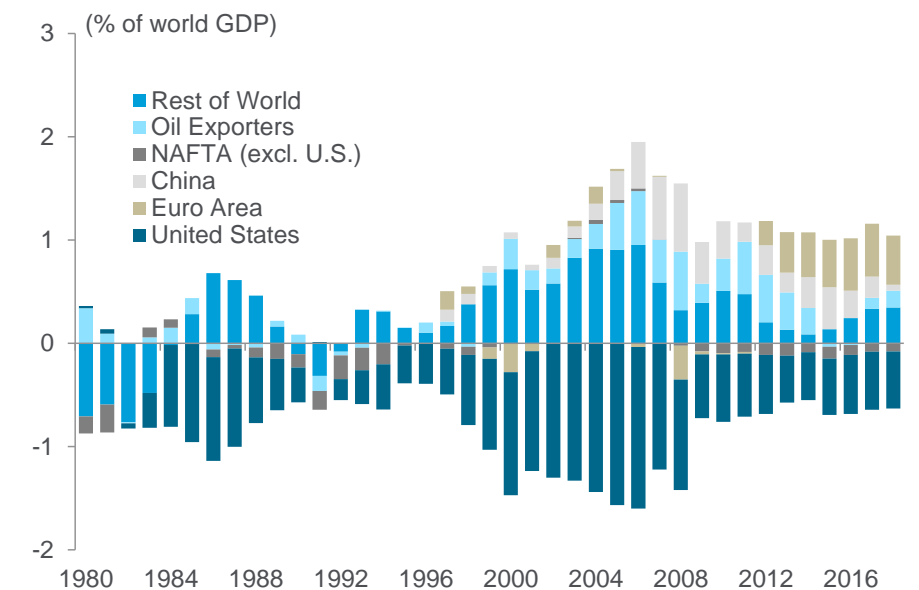


Source: Bureau of Economic Analysis, Citi Research

Although persistent, the U.S. current account deficit measured as a ratio to U.S. GDP has retreated since the early 2000s.

An important feature of the U.S. in global trade has been the persistent current account deficit, the main component of which is the trade deficit, since the U.S. imports more goods and services than it exports. But even by this metric, the U.S. economy's imbalances vis-à-vis its global partners (as measured by the deficit to global GDP) were greatest in the early 2000s, and have retreated since then. In fact, all other major regions have had more dynamism in their shares of global GDP: Europe running a balance, then a deficit, then a surplus; China's surplus shrinking; and oil producers' surplus quite variable (Figure 6).

Figure 6. Current Account Balance: Top Economies as Percentage of World GDP, 1980-2018



Source: IMF, Citi Research

U.S. financial integration has peaked, but not the dependence on foreign financial flows to finance both the current account and the fiscal budget deficit.

U.S. financial integration has peaked by several, but not all, metrics. Because the U.S. runs a current account deficit, it depends on sales of US assets to foreign buyers. These current account deficits accumulate to the net international investment position for the country, which is increasingly negative, although the trajectory has bottomed. Foreign holdings of U.S. assets continue to rise even as U.S. holdings of foreign assets have plateaued. Because the composition of the holdings by U.S. investors is skewed toward equities vs. a skew towards U.S. Treasuries by foreign investors, even though the U.S. is 'in debt' to the rest of the world, the rest of the world still paid the U.S. interest of some \$246 billion in 2018, or 1.2% of US GDP.

Within the foreign portfolio, foreign holdings of U.S. Treasuries peaked at 42% at the onset of the financial crisis as the Federal Reserve shifted its monetary policy strategy and started purchasing U.S. Treasuries; about 29% of U.S. Treasuries were owned by foreigners at the end of 2018. Going forward, if global financial integration has peaked and international reserves have peaked there may be reduced appetite for foreigners to buy U.S. Treasury securities. Once the Federal Reserve is no longer an important buyer, and if there is less demand from abroad, U.S. private domestic investors (pension funds, mutual funds, hedge funds, financial intermediaries, etc.) would be needed to finance the U.S. budget deficit.

Globalization, Productivity, and Inequality: Not Too Much Globalization, but Too Little?

The global financial crisis exposed and exacerbated macroeconomic, societal, and geographic troubles but a retreat from globalization will not remedy them.

Data on trade and financial flows are not sufficient to either cheer or bemoan globalization in retreat. The global financial crisis exposed and exacerbated brewing macroeconomic, societal, and geographic troubles: Increasing public debt burdens — and a shifting support for progressive policies; Rising inequalities — within generations, across generations, and across regions within countries; Slowing productivity growth — the only durable way for economies to meet commitments to their citizens.

Were these troubles caused by globalization such that a retreat will remedy them? Not likely. Global growth has regained its pre-financial crisis trend, despite stalled globalization: Yet, debt burdens have increased, inequalities have worsened, and productivity growth has not improved. So the problem could be not too much globalization, but too little globalization (that would expand the pie) and too few supportive domestic policies (that would distribute the pie). What is the evidence on the relationships between globalization, productivity growth, and inequalities?

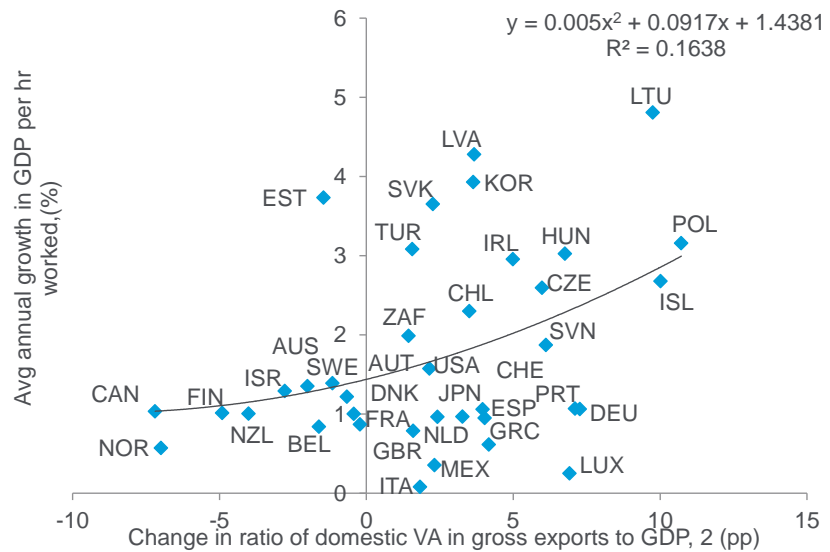
The retreat from globalization is both a cause and an outcome of the loss in output and the divergence in growth prospects in terms of GDP per capita.

Global growth has returned to trend, but with some 6% of global GDP lost — apparently permanently — because policies never supported a strong enough boom to recover the lost output. The rate of growth of GDP per capita has slowed: Between 1990 and 2007, global per capita growth averaged 4.7% year-over-year but fell from 2008 to 2018 to an average of 2.3%. This fall has been most pronounced in high and upper-middle income countries, whereas lower-middle income and low income countries have experienced higher GDP per capita growth. The period of rapid globalization and rapid GDP per capita growth from 1990 to 2007 set expectations and the difference between those expectations and the last decade has been profound, both for upper and lower income groups. Upper income citizens have been disappointed and lower income citizens have been positively surprised. The retreat from globalization is both a cause and an outcome of the loss in output and the divergence in growth prospects in terms of GDP per capita.

Labor productivity has been weak since the financial crisis but given GVCs, globalization and productivity are all linked, it's not surprising they are in retreat together.

An important correlate of the retreat of globalization is the evolution of labor productivity, which has been weak since the financial crisis, although it was already sluggish. Labor productivity in the OECD has grown at about half the rate of the pre-crisis period. Productivity growth has also slowed across most industries, particularly manufacturing, even if productivity growth in manufacturing has outpaced that in services. GVCs, globalization, and productivity are all linked; therefore it is not surprising they retreat together. A recommitment to the policies that support deeper global integration — widening the participation by all countries in trade liberalization efforts including in services, getting more countries into multilateral rather than bilateral trade agreements, etc. — is an important part of the recipe to improve productivity growth too.

Figure 7. Change in Value Added in Exports to GDP Ratio and Growth in Labor Productivity, 2000-2014



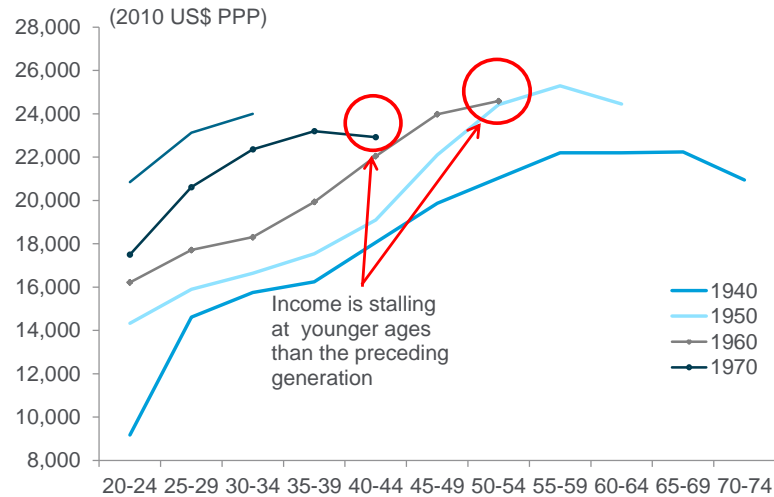
Source: OECD Compendium or Productivity Indicators 2018, Citi Research

Peak earnings have been reached at a younger age—well before retirement age—for the most recent working generations vs. older generations; this is a very worrisome situation.

Younger generations are bearing the brunt of the output loss and the drop in labor productivity. For the 1960s birth cohort, income growth slowed in their peak earning years (when they were in their 50s). The situation for the 1970s cohort is worse: their income growth has fallen in their formative earning years (late 30s). For the 1980s cohort, it is still too early to tell, but prospects are not favorable. Because earnings are flattening earlier in life, these generations will find it challenging to both support their own dreams and meet the fiscal commitments relating to the health and pensions of their parents.

When members of the 1940s and 1950s cohorts who were parents were asked: “Will your children live better than you?” and they answer, “We fear that our children will not be better off”, the data bear them out. These parents lived in generations characterized by rising globalization, rising income, and rising productivity, whereas their children live in a period where all are in retreat.

Figure 8. Slowed Income Gains Across Generations: Earnings vs. Age for Generations Born in a Given Year



Note: Data cover 24 OECD countries. The series shown are derived for each cohort from a specification controlling for country and age fixed effects.
 Source: OECD (2017), Preventing Ageing Unequally, OECD Publishing, Paris

There are many reasons behind the loss of manufacturing employment, with globalization being just one.

Globalization is often cited as a cause of lost manufacturing employment, a factor relating to income and regional inequalities within economies. A closer look at changes in manufacturing employment highlights that certain kinds of trade do have an effect, but also that there are other factors at work. Trade with long GVCs (such as for industrial products) promotes manufacturing employment to complement the intermediate inputs. But, trade with short GVCs (such as consumer products) substitute imports for domestic sales, resulting in a loss of domestic jobs. Capital investment in technology is GVC intensive and tends to support manufacturing employment in advanced economies. On the other hand, a general trend in consumer buying habits towards services rather than goods weighs on manufacturing employment even without considering trade.

Clustering and changing patterns of trade and technology increase regional inequality and need to be addressed by sub-national policy.

Increased regional inequality within economies is a concern. A successful manufacturing production cluster often crowds out other sectors by attracting resources and paying them well. But, if the core of the cluster falters, the whole region can falter too. Changing patterns of trade and technology put clusters in advanced economies' regions at risk.¹² Clustering leads to regional concentrations of firms and employment and disproportionate exposure to technology and globalization shocks. National policy is ill-designed to respond to the regional heterogeneity. Place- and person-based initiatives at the sub-national level in education, production diversification, and mobility services are needed. A retreat from globalization is not part of that recipe and will not solve a region's exposure to technology or trade.

¹² Rusticelli, Elena, David Haugh, Axelle Arquie, and Lilas Demmou (2018) Going Local: A Regional Perspective on How Trade Affects Labour Markets and Inequality", OECD Economics Department WP_18.

Conclusion

Global integration — whether trade and production networks, financial flows, or migration and tourism — is a process. Consumers, firms, and workers are part of that process. The process benefit is productivity growth, the durable economic benefit which protects an economy in the face of financial volatility and generates the where-with-all to make good on the dreams of younger people and the commitments to older people. The process challenge is adjustments that face workers and firms.

Policy choices and business decisions — regional, national, multinational — determine whether firms and workers have the resources, skills, and mobility to be resilient and turn the process to their benefit. Ultimately, policies and decisions determine both the size and the distribution of the economic pie. The retreat in globalization coincides with stagnant productivity growth and widening inequalities — a smaller pie, more poorly distributed. A renewed commitment to globalization, married with the distributional objectives of domestic policies and business decisions, is needed to revive prospects for workers, firms, and the global economy.

Has Globalization Peaked?

One way to measure the health and dynamism of trade is through global trade intensity, which is the sum of global imports and exports as a percent of gross domestic product (GDP). The higher the value, the higher the indication is that trade is a large, important part of global economic activity. Looking at this metric, we find trade volume as a share of GDP increased dramatically until the financial crisis and has stalled ever since.

Another factor that can indicate trade dynamism is being held back is a reduced commitment to trade liberalization. Multilateral trade rounds at the World Trade Organization (WTO), such as the Doha Round, foundered and have been replaced by fewer and fewer bilateral and plurilateral trade deals between nations. The number of new Regional Trade Agreements (RTAs) notified to the WTO skyrocketed in the early 2000s as bilateral agreements especially proliferated. However, even these more limited trade agreements have peaked.

Another major headwind for global trade is protectionism, which results in barriers to trade between nations. The number of new, harmful trade measures implemented (which include but are not limited to, tariffs) has increased in many countries. Because of global value chains, assessing the level of protectionism needs to be viewed at the product and sector level, not just at the aggregated country level.

During the 1990s, supply chains became more and more global with increased cross-border interdependence. However, this also is in retreat. The OECD Global Value Chain (GVC) Structural Indicator, which provides a measure of interdependencies, has fallen in recent years. This unraveling of GVCs has implications for productivity and countries' convergence to higher living standards.

The cross-border flow of goods and services isn't the only thing that has peaked; financial integration has as well. The sum of total assets and liabilities as a share of GDP hit its peak prior to the financial crisis and has not returned to pre-crisis levels. This isn't entirely bad as reduced cross-border finance could moderate the spread of financial turbulence. However, it could also result in fewer financing opportunities for projects around the world. The international banking system is also less integrated than before the global financial crisis. Foreign claims by banks, as well as bonds issued in international markets by a non-resident bank, both peaked prior to the financial crisis and have fallen ever since. Likewise, international claims by banks have fallen, although international claims by the non-bank private sector has become a relatively larger share of global international claims.

Another sign that financial markets are less globally integrated can be seen in foreign direct investment (FDI) and portfolio equity, which both increased dramatically from 1980 to 2000, but in the 21st century have been more volatile and have failed to maintain previous peaks. And after tremendous growth beginning in the early 2000s, remittances stalled 2013-2015, but have since picked up. This could be both good and bad: remittances help increase private incomes of recipients without involving debt, although they imply more opportunities abroad than at home.

The global current account balance as a share of GDP shifted from deficit to surplus in the early 2000s and remains high. A global surplus implies an imbalance at the global level between production and spending, and is reflected in a net build-up of international reserves. This build-up in savings, unless invested wisely, could be a drag on global demand and potential growth.

While many indicators are showing globalization has decreased, both migration and international tourist arrivals continue to increase rapidly, indicating that the flow of people between countries has not stalled. Immigration is an important topic, but one that has already been covered in the Citi GPS report [Migration and the Economy](#) in September 2018.

Likewise, the world is becoming more interconnected through digital platforms. Global Internet protocol (IP) traffic (exabytes per month) normalized by global GDP, has increased at faster and faster rates. Digital globalization is an important topic that warrants further discussion, but is beyond the scope of this report. Tensions regarding data security and privacy risk fragmenting digital globalization.

Trade Integration Has Peaked

One way to measure the health and dynamism of trade is global trade intensity, which is the sum of global imports and exports as a percent of gross domestic product (GDP). High values indicate that trade is a large, important part of the global economic activity. Trade volume as a share of GDP increased dramatically until the financial crisis and has stalled ever since. The average rate of increase of trade intensity during 4-year periods has fallen from its peak in 1996-2000.

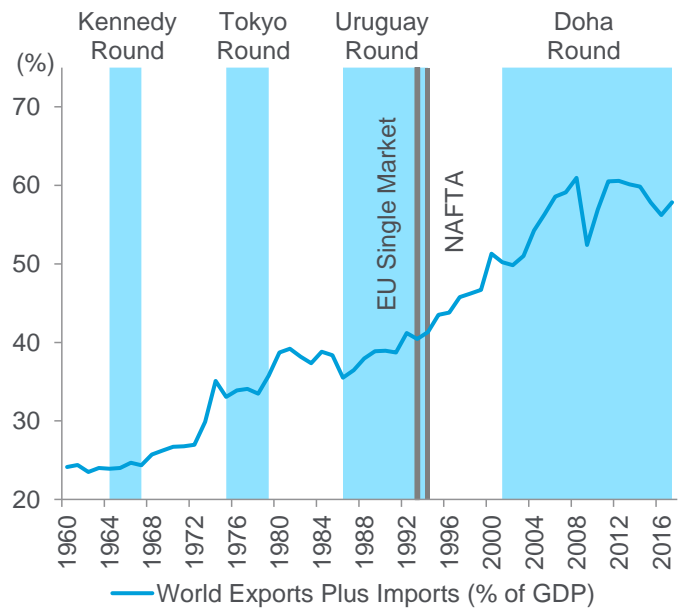
World trade integration rose dramatically in the second half of the 20th century but has stalled in the 21st century partly due to faster growth in emerging markets and in services, both of which are relatively less liberalized.

- In the early 2000s, stalled multilateral trade negotiations were replaced by bilateral and plurilateral agreements.
- These agreements focused less on opening markets for growing categories of consumption and trade such as services, and many did not include emerging markets, or did not make strong multilateral commitments.

Trade intensity has increased at a slower rate since 2000.

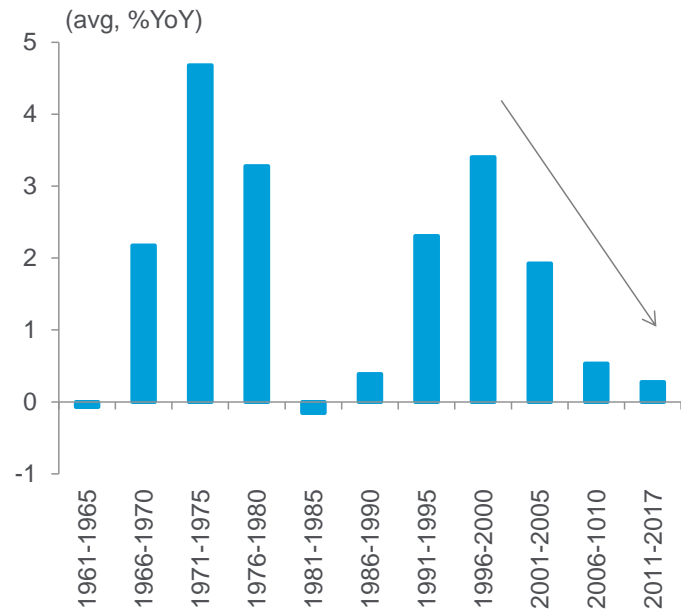
- Even as economies have recovered, trade intensity has struggled to return to previous levels.
- The post financial crisis period has been characterized by sluggish business capital investment. Capital goods have long, trade-intensive GVCs so sluggish investment has dampened trade intensity.
- Intensification of protectionist policies has dampened integration further.

Figure 9. Global Trade Volume as a Percent of GDP, (%), 1960-2017



Source: World Bank

Figure 10. Rate of Increase in Trade Intensity as a Percentage of GDP (% YoY), 1960-2017



Source: World Bank

Trade Agreements Have Peaked

Another factor holding back trade dynamism is reduced commitment to trade liberalization. Multilateral Trade rounds at the WTO, such as the Doha Round, foundered, and have been replaced by fewer and fewer bilateral and plurilateral trade deals between nations. The number of new Regional Trade Agreements (RTAs) notified to the WTO skyrocketed in the early 2000s as bilateral agreements especially proliferated. However, even these more limited trade agreements have peaked.

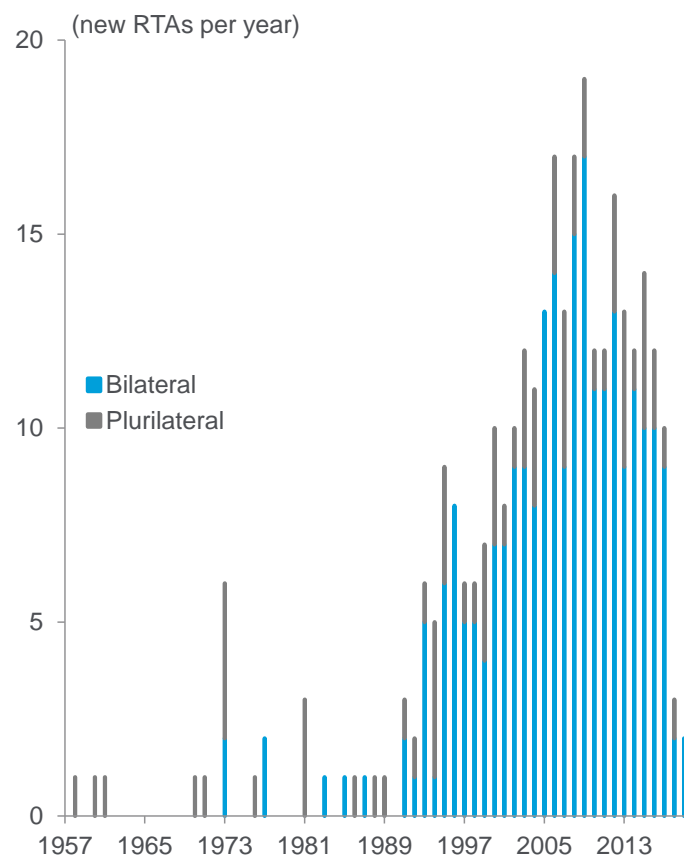
Why have trade agreements peaked?

- Most of the low-hanging fruit has already been taken, and remaining agreements to integrate sectors are more difficult.
- Multilateral agreements at the WTO stagnated. The Doha Round of multilateral negotiations at the WTO, which began in 2001, has effectively collapsed, bogged down with too many countries and too many issues being addressed at once.

A proliferation of new bilateral trade agreements began in the early 1990s, but peaked in 2009.

- New plurilateral agreements remained steady, averaging about two new agreements per year during that period.
- New trade agreements take longer to negotiate and can collapse.
 - The Trans-Pacific Partnership (TPP) and the Transatlantic Trade and Investment Partnership (T-TIP) collapsed (albeit the former replaced by the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, or CPTPP), and the Regional Comprehensive Economic Partnership (RCEP) stalled.

Figure 11. Evolution of New Bilateral and Plurilateral Regional Trade Agreements, 1957 - 1Q 2019



Note: Regional Trade Agreements include Free Trade Agreements (FTAs), Economic Integration Agreements (EIAs), Customs Unions (CUs), and Partial Scope Agreements (PSAs) for goods

Source: WTO Regional Trade Agreements Information System, Citi Research

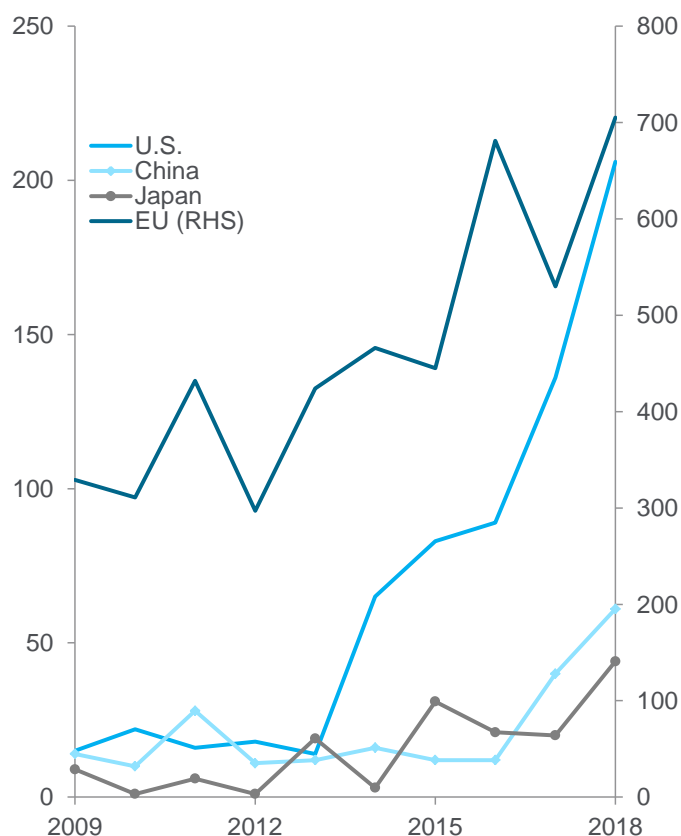
Protectionism Has Not Peaked

A major headwind for global trade is protectionism, which results in barriers to trade between nations. The number of new, harmful trade measures implemented (which include but are not limited to, tariffs) has increased in many countries. Because of global value chains, assessing the level of protectionism needs to be at the product and sector level, not just at the aggregated country level.

Not only have trade liberalizing agreements stalled, but trade protections have increased.

- Contingent trade protections and subsidies (not including export subsidies) account for nearly 50% of the harmful policy instruments.
- Tariffs are not the instrument most frequently deployed, accounting for only about 15% of the instruments chosen.
- Export-oriented measures, including subsidies account for just less than 15%.
- The top five sectors accounting for increased protection are: iron and steel, other fabricated metal products, the motor vehicle complex, basic organic chemicals, and machinery for mining and construction.
- The U.S. accounts for 17% of the protective measures for iron and steel and 22% of the measures for fabricated metals; Russia and India are top users of protections on the motor vehicle complex while India and Brazil are top protectors of basic chemicals. Russia, India, and Brazil are top protectors of the mining complex.

Figure 12. Select Economies: Number of New Harmful Trade Measures Implemented, 2009-2018



Note: All new measures taken each year. The EU is the sum of interventions from all 28 EU countries.

Source: Global Trade Alert, Citi Research

Source: USTR 2018 FactSheet: Key Barriers to Digital Trade

Trade Fragmentation (GVCs) Has Retreated

During the 1990s, supply chains became more and more global with increased cross-border interdependence. However, this also is in retreat. The OECD Global Value Chain (GVC) Structural Indicator, which provides a measure of interdependencies, has fallen in recent years. This unraveling of GVCs has implications for productivity and countries' convergence to higher living standards.

Global integration via GVCs has peaked...

- GVCs have been a source of technology transfer, economies of scale, and cluster economics — all supporting productivity growth.*
- Firms that are part of GVCs are more productive and gain from trade interdependencies and the transfer of management know-how.
- The limits of GVCs might have been reached within some sectors and economies, given enhanced concerns for supply chain vulnerability and the desire for supply chain transparency.**

...but, the unraveling of GVCs is a major concern

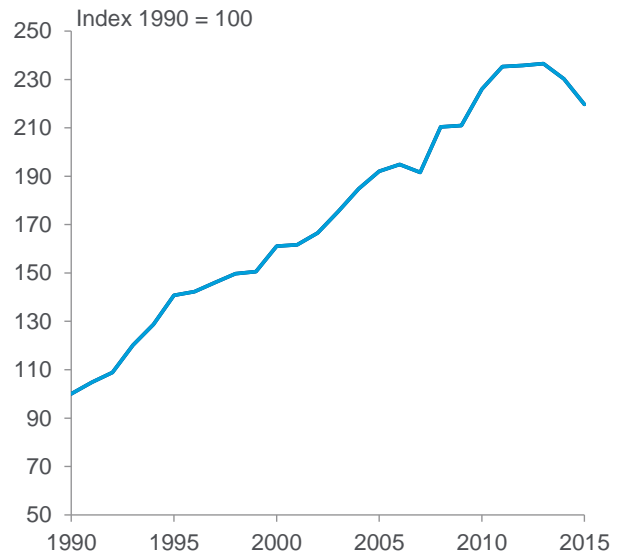
- The unraveling of supply chains, before poorer countries have yet to gain a foothold in global trade, undermines their economic integration and convergence to higher living standards.
- In particular, GVCs that unravel in the face of protectionist pressures imply that firms, workers, and countries forego productivity improvements and competitiveness gains.

Note: Structural GVC Indicator adjusts for the economic cycle and changes in commodity prices.

* Criscuolo, Chiara, Jonathan Timmis, and Nicholas Johnstone (2015), "The Relationship Between GVCs and Productivity", OECD WP_15.

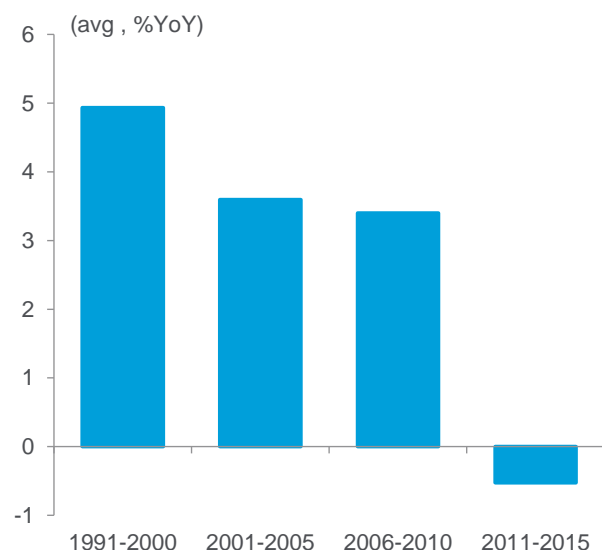
** For example, floods in Thailand in 2011 disrupted global electronics supply chains, while the collapse of the Rana Plaza garment factory building in Bangladesh in 2013 heightened concerns about safety standards along textile supply chains.

Figure 13. Structural GVC Indicator, 1990-2015



Source: World Bank

Figure 14. Average Annual Percentage Change in the Structural GVC Indicator (%YoY), 1991-2015



Source: OECD June 2017 Economic Outlook database; OECD STAN Bilateral Trade database; and OECD calculations. For further detail see OECD 2016 Economic Policy Paper "Cardiac Arrest or Dizzy Spell: Why is World Trade so Weak and What Can Policy Do About it?"

Financial Integration Has Peaked: External Assets

Cross-border flow of goods and services isn't the only thing that has peaked; financial integration has as well. The sum of total assets and liabilities as a share of GDP hit its peak prior to the financial crisis and has not returned to pre-crisis levels. This isn't entirely bad as reduced cross-border finance could moderate the spread of financial turbulence. However, it could also result in fewer financing opportunities for projects around the world.

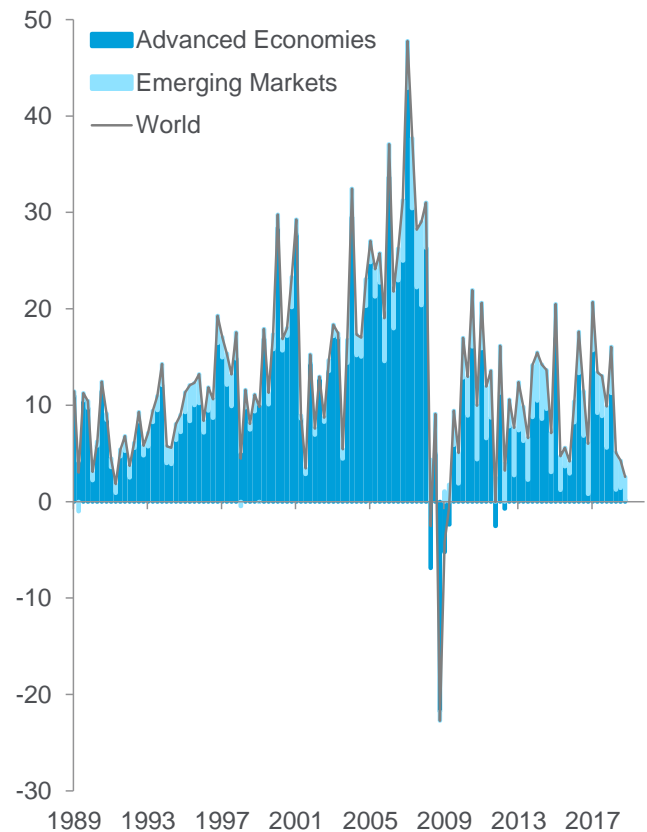
Cross-border financing — as measured by the sum of assets and liabilities as a share of GDP — peaked in 2007.

- The level of total assets and liabilities has failed to return to pre-crisis levels.
- This retreat has mostly taken place in advanced economies rather than emerging markets.
- But, as overall flows have fallen, it appears that volatility of those flows has increased. Volatility can also pose challenges.

The consequences of this retreat aren't completely negative.

- On the positive side, reduced cross-border finance might be welcome, as this has been a transmission channel for economic crisis.
- On the negative side, a retreat in global financial markets reduces the potential gains from diversification, investment financing, and intertemporal consumption, savings, and growth smoothing.

Figure 15. Total Assets & Liabilities as a Percentage of GDP, 1990-2018



Note: the sum of capital flows (portfolio and other) and FDI. Source: IMF Balance of Payments Statistics, Citi Research

Financial Integration Has Peaked: Cross-border Financial Flows

The international banking system is less integrated than before the global financial crisis. Foreign claims by banks, as well as bonds issued in international markets by a non-resident bank, both peaked prior to the financial crisis and have fallen ever since. Likewise, international claims by banks have fallen, although international claims by the non-bank private sector has become a relatively larger share of global international claims.

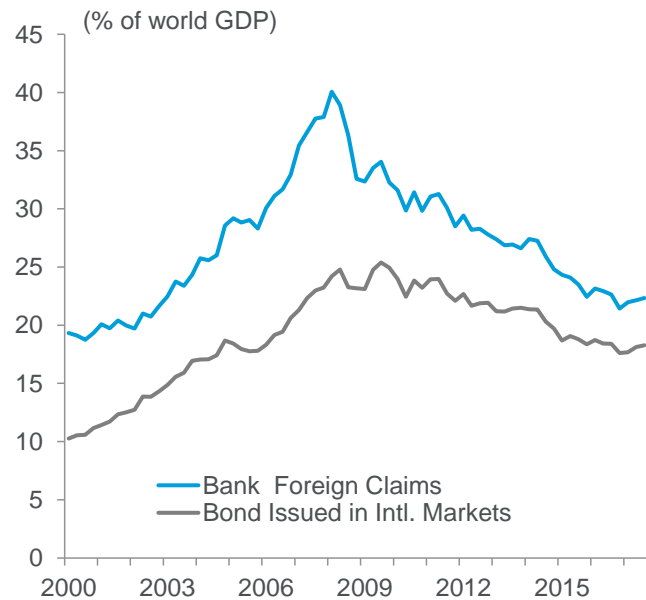
Many measures of financial integration have not returned to their pre-crisis experience.

- Bank foreign claims and bonds issued in international markets peaked in 2007 and have decreased ever since.
- Global international claims peaked in 2007 and have been steady since.
 - International claims on the non-bank private sector and governments have remained steady or slightly increased, while claims on banks have decreased.

Decreased financial integration limits cross-border investment, but could also temper the transmission mechanisms of financial crises.

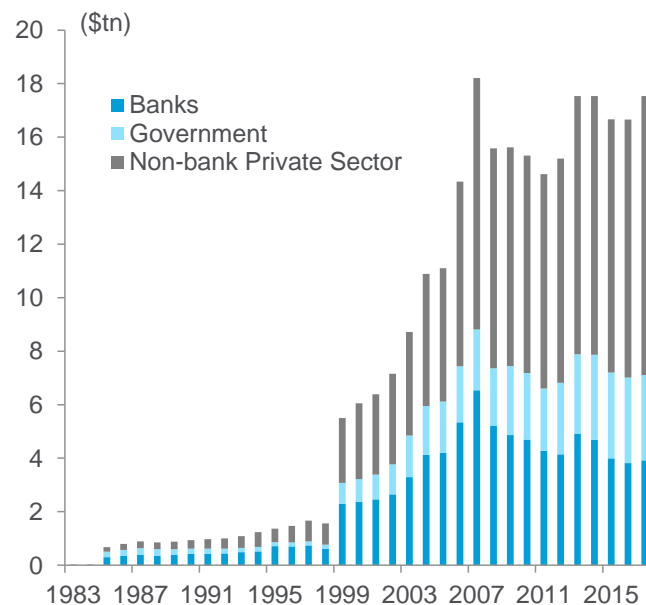
- Lower global connectivity could make contagion of financial crisis less severe.
- However, the data suggest that the non-bank private sector may be the dominant channel for transmission going forward.

Figure 16. Foreign Bank Integration (% of World GDP), 2000-2017



Note: 1) Total foreign claims for all BIS reporting countries. (2) Bonds issued in international markets are debt securities issued in any market by a non-resident. Source: BIS, OECD Economic Outlook, Volume 2018 Issue 1 - © OECD 2018

Figure 17. Global International Claims by Sector, 1983-2018



Source: BIS, Citi Research

Financial Integration Has Peaked: FDI and Equity

Another sign that financial markets are less globally integrated can be seen in foreign direct investment (FDI) and portfolio equity, which both increased dramatically from 1980 to 2000, but in the 21st century have been more volatile and have failed to maintain previous peaks.

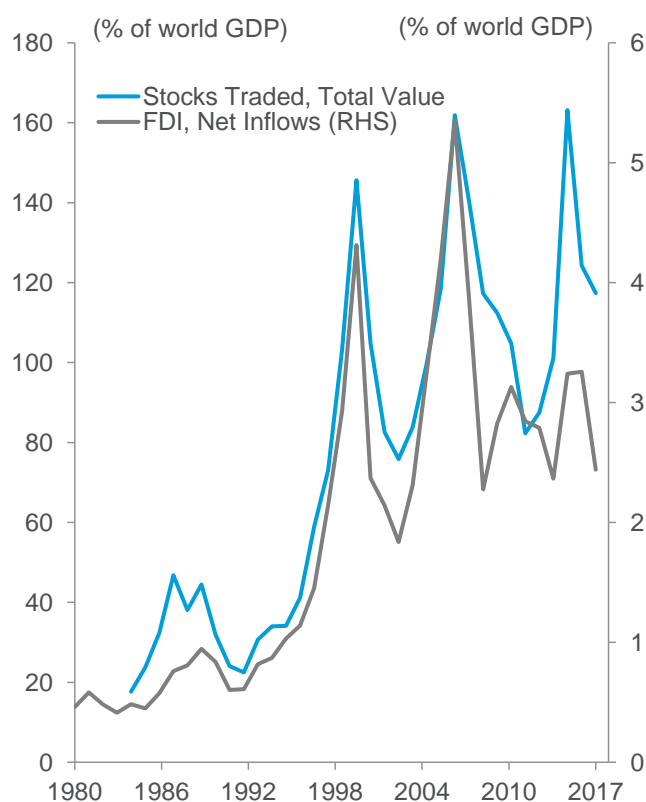
Cross-border FDI and stocks diverged after the financial crisis, and are now more volatile.

- Foreign direct investment and total stocks traded as a share of world GDP moved in lock-step from the 1980s through 2012.
 - Both increased dramatically before 2000, but since then have experienced more volatile increases and decreases.
- Since 2012, stocks traded as a share of world GDP reached another temporary peak, while FDI has stagnated.

The type of FDI affects both measurement and economic benefits.

- Mergers and acquisitions (M&A) affect economies differently than greenfield investments (i.e., investments where a company constructs a subsidiary in a foreign country).
- Greenfield investment is more employment-intensive, both in construction and in new jobs.
- M&A can benefit an economy through transfer of new technology and managerial methods.
- In measuring cross-border FDI flows, M&A tends to exacerbate the cyclical behavior in the FDI data.

Figure 18. FDI and Stocks Traded as a Percentage of World GDP, 1980-2017



Source: World Bank, IMF, Citi Research

Financial Integration Has Peaked: Remittances

After tremendous growth beginning in the early 2000s, remittances stalled 2013-2015, but have since picked up. This could be both good and bad: remittances help increase private incomes of recipients without involving debt, although they imply more opportunities abroad than at home.

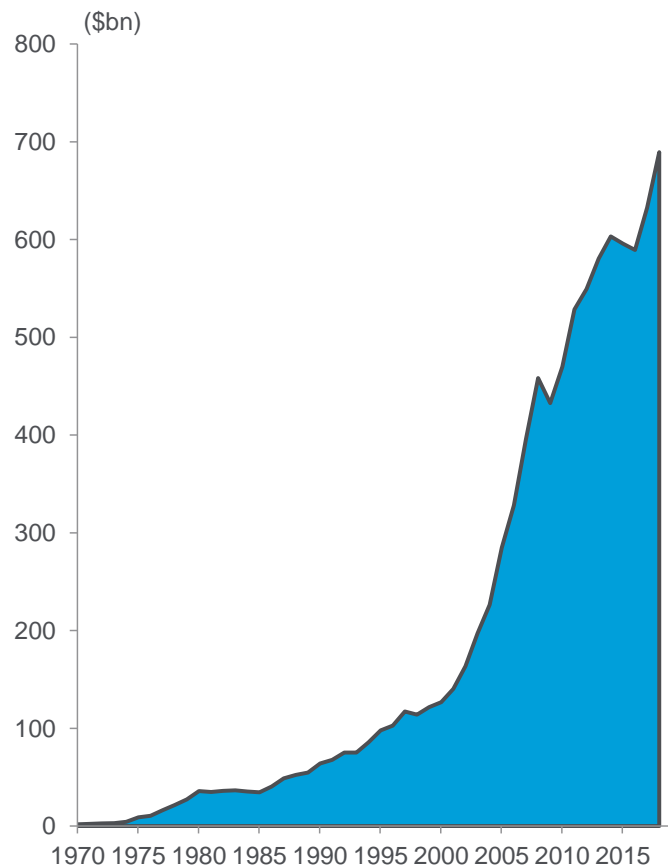
Remittance flows involve the movement of both people and financial capital.

- Remittance flows have experienced years of tremendous growth, particularly after 2000.
- But remittances stalled and declined in the 2013-2015 period, then rebounded in 2017 and 2018. Globally, remittances have reached about \$700 billion.

There are pros and cons to remittances as opposed to foreign direct investment.

- Pros: Remittances increase the private incomes of recipients and can be used to finance education or entrepreneurship without involving debt.
- Cons: Remittances might undermine incentives for economic activity among recipients, harm fiscal balances (by avoiding taxes), and limit capacity to fund investment in large-scale public projects.
- Remittance transfers imply more opportunities abroad than at home, whereas foreign direct investment implies more opportunities created at home.

Figure 19. Migrant Remittance Inflows (US\$), 1970-2018



Source: World Bank KNOMAD Group, Migration and Development Brief 29

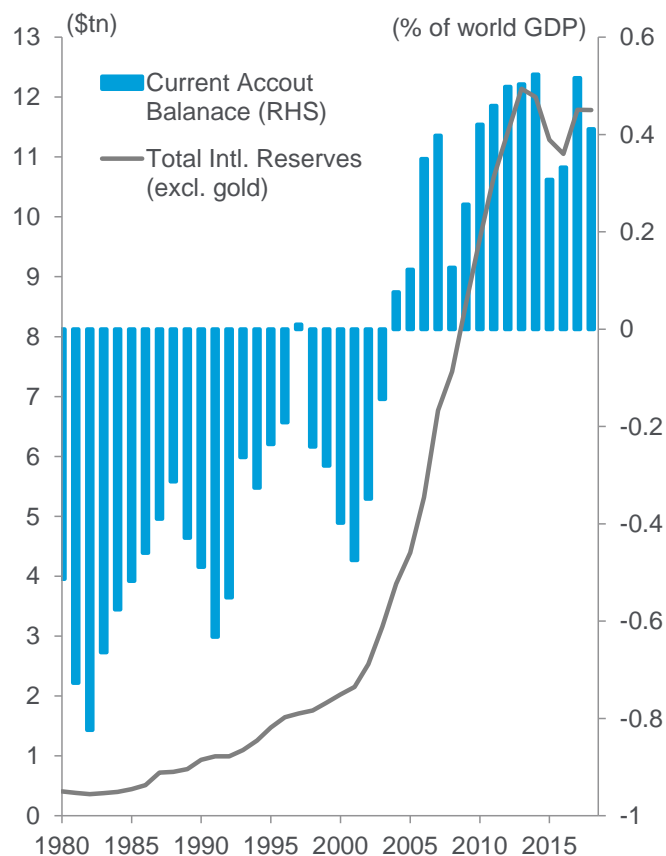
Global Imbalances & International Reserves May Have Peaked

The global current account balance as a share of GDP shifted from deficit to surplus in the early 2000s and remains high. A global surplus implies an imbalance at the global level between production and spending, and is reflected in a net build-up of international reserves. This build-up in savings, unless invested wisely, could be a drag on global demand and potential growth.

The global current account surplus, as well as international reserves, may have peaked

- After decades of global net deficit, the global current account balance moved into surplus in the early 2000s.
- According to the IMF, the switch from deficit to surplus was due partly to a mismeasurement of services; in particular, transportation-related lags in the recording of imports compared with exports.¹³
- The accumulation of global current account surpluses yields the stock of international reserves, which appears to have peaked.
 - International reserves are an ‘insurance policy’ against unstable financial flows, although countries often do not ‘use’ the insurance policy to offset movements in foreign capital.
 - Excess reserves are a drag on global demand and on potential growth, in that they represent savings rather than investment.

Figure 20. Global current Account Balance as a Percentage of GDP (%) and International Reserves, (\$ trn), 1980-2018



Source: IMF World Economic Outlook, IMF IFS, Citi Research

¹³ IMF World Economic Outlook: Sustaining the Recovery, 2009, pg 35-39.

However, Some Flows are Expanding: People

Both migration and international tourist arrivals continue to increase rapidly, indicating that the flow of people between countries has not stalled. Immigration is an important topic, but one that has already been covered in a recent Citi GPS report on Migration and the Economy.¹⁴

Increased migration is beneficial to an economy over the long run.

- International migrants are increasing in number, especially from high-income countries.
 - However, this stock of migrants only accounts for about 3% of the global population.
- Migration is conducive to native and aggregate prosperity.
 - In Germany and the U.K., for example, if immigration had been frozen in 1990, real GDP would have been around €155 billion and £175 billion lower, respectively, in 2014.¹⁴

International tourists are increasing, especially from Asia Pacific countries.

- Tourists from North America and the European Union remain steady.
- International travel and tourism accounts for some 10% of all global activity, about 10% of global employment, and is responsible for 20% of all jobs created in the world in the last 5 years.¹⁵

Figure 21. International Migrant Stock (Millions of People), 1990-2017

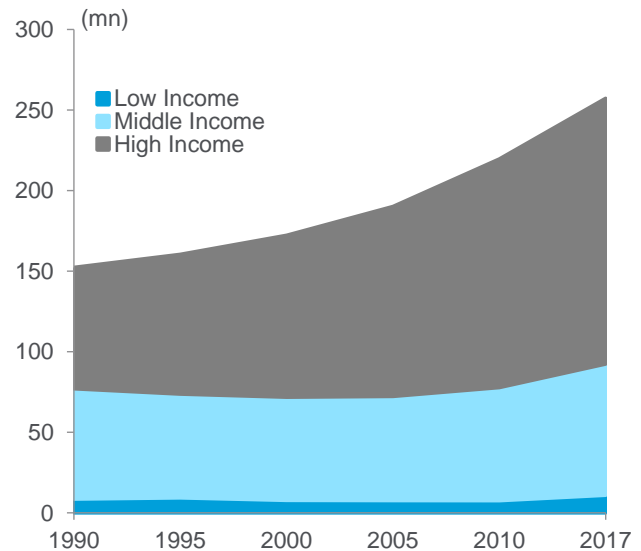
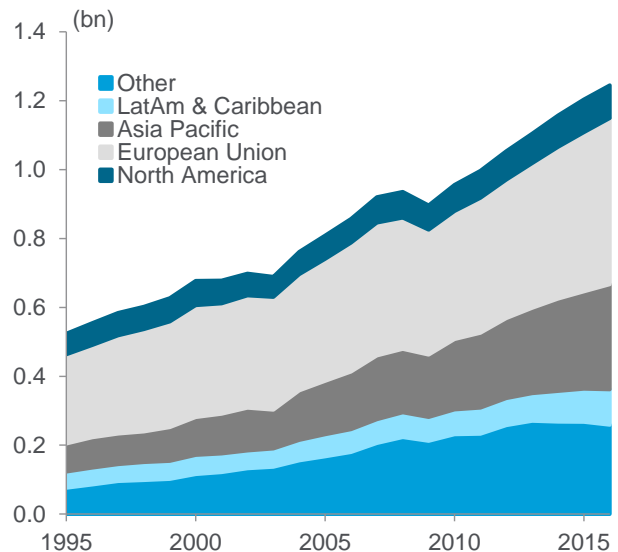


Figure 22. International Tourist Arrivals (Billions of People), 1995-2016



Source: OECD: Economic Outlook Volume 1, United Nations, World Bank: World Development Indicators, Cisco, OECD (2015): Digital Economy Outlook; OECD calculations

¹⁴ Citi GPS (2018) Migration and the Economy.

¹⁵ World Travel & Tourism Council, "Travel & Tourism continues strong growth above global GDP", Press Release, 27 February 2019.

However, Some Flows are Expanding: Digital

Likewise, the world is becoming more interconnected through digital platforms. Global Internet protocol (IP) traffic (exabytes per month) normalized by global GDP, has increased at faster and faster rates. Digital globalization is an important topic that warrants further discussion, but is beyond the scope of this report. Tensions regarding data security and privacy risk fragmenting digital globalization.

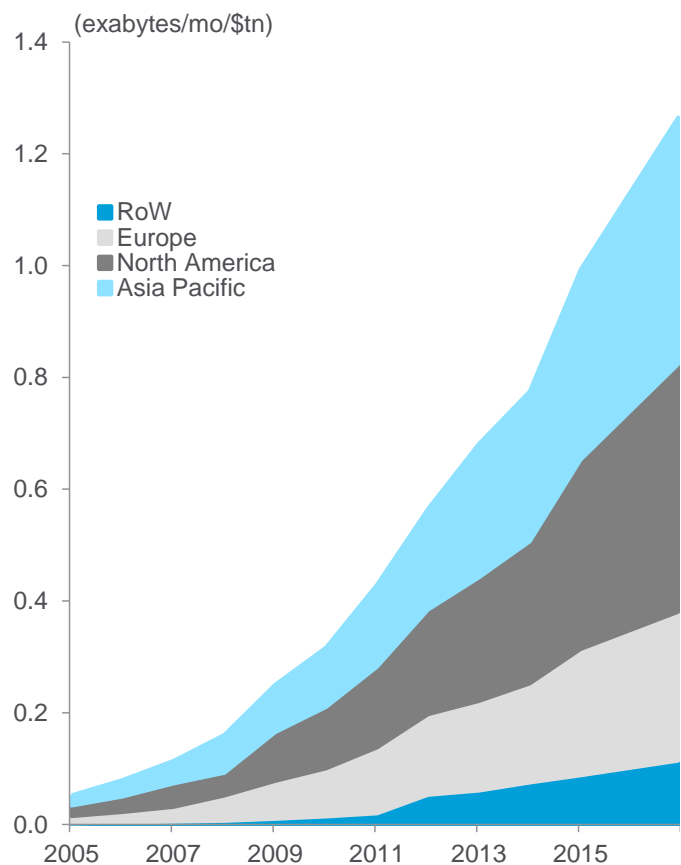
Another way to quantify globalization is through the flow of digital traffic.

- As a share of GDP, global IP traffic has skyrocketed since 2005 and continues to increase at tremendous rates.
 - This growth is broad-based, although Africa is less connected.
- According to the USTR, global e-commerce is now worth \$28 trillion, an increase of 44 percent over the past five years.
 - 70% of global Internet traffic went through cloud data centers.

Barriers to digital trade could threaten this expansion.

- Barriers to digital trade have been enacted by countries including China and the EU.
 - These include data localization requirements, web filtering, news aggregation fees, etc.
- Policy consideration of privacy and security issues is appropriate. But balkanizing data flows creates arbitrage opportunities (to get around regulations) both enhancing risks and foregoing benefits.

Figure 23. Normalized Global IP Traffic (Exabytes/Mo./\$trn Global GDP), 2005-2016



Source: United Nations; World Bank: World Development Indicators; Cisco; OECD (2015): Digital Economy Outlook; OECD calculations; Citi Research

Has Global Integration of the U.S. Peaked?

After increasing for most of the previous few decades, U.S. trade intensity fell during the financial crisis and has failed to date to recover to previous levels. Trade volume by sector as a share of sector GDP shows that services trade intensity still lags, and global integration of investment goods has retreated.

The U.S. accounts for the majority of the global current account balance (exports minus imports) as a share of global GDP, while oil exporters, the Eurozone, and China account for the majority of the surplus. However, these imbalances have shifted. China, for example, has become a smaller contributor to the global surplus. The main driver of the current account balance is the balance between exports and imports (income on investment and remittances are other components).

The U.S. current account balance is now a greater share of U.S. GDP than it was 70 years ago. However, in the past decade, the deficit as a share of GDP has shrunk, after peaking in 2005. The persistent U.S. current account deficit masks some persistent and some evolving bilateral imbalances. A decomposition of the U.S. current account deficit by trading partner shows that the U.S. primarily runs a deficit with Asia (particularly China) and Europe while recently running a surplus with Latin America.

The U.S. also doesn't have a deficit in all product types. In particular, the U.S. runs a growing surplus in services, where it exports more than it imports. A decomposition of U.S. trade by category shines more light on the U.S. current account imbalance, changing competitiveness, and the roles for technology and aggregate demand.

With regard to foreign assets, foreign investors hold more U.S. assets than what U.S. investors hold of foreign assets. However, the U.S. earns more on its investments abroad than vice versa, which makes the U.S. portfolio overall akin to a risk-loving investor, willing to take more risk to earn higher returns. In contrast, foreign investors buy low-risk, low-return U.S. Treasury securities. U.S. primary income (the financial flows from transactions between residents and non-residents through labor, investment, loans, deposits, etc.) is positive, i.e., U.S. receipts are greater than payments. Likewise, U.S. investors earn more in direct investments abroad than vice versa. This could be due to a variety of factors, including managerial differences and differences in tax treatment.

The world has viewed the U.S. as a haven of prosperity and safety with foreign holdings of U.S. Treasury securities sky-rocketing through the 2000s. This trend peaked with the onset of Quantitative Easing (QE) as the U.S. Federal Reserve became a key buyer. The rise in purchases of U.S. official assets coincides with the dramatic increase in international reserves, and the global current account surplus.

Global foreign exchange reserves, or reserves held by a central bank in foreign currencies, have also peaked. Nevertheless, the U.S. dollar has experienced a recent resurgence and remains the largest share of currencies held. The relative strength of the U.S. economy, as well as the importance of the U.S. dollar in global transactions, supports the dollar dominance.

Dollar strength reflects a strong U.S. economy, although it can hurt U.S. exporters by making their products relatively more expensive. The U.S. dollar has appreciated since the financial crisis, although less dramatically than in prior periods and with less divergence between industrial and emerging market currencies. In principle, a stronger U.S. dollar translates into cheaper U.S. import prices (lower cost of foreign goods for U.S. consumers). However, profit margins and currency invoicing affect the extent of the pass-through. Sometimes, foreign firms adjust their profit margins rather than changing their export prices to the U.S.

Although trade with the U.S. makes up a relatively small part of a lot of countries' overall trade, the U.S. dollar plays an outsized role as most trade contracts are invoiced in U.S. dollars. This makes fluctuations in the dollar particularly important. For example, a 1% U.S. dollar appreciation against all other currencies in the world, which makes traded goods more expensive, is associated with a 0.6-0.8% decline within a year in the volume of total trade between countries in the rest of the world.

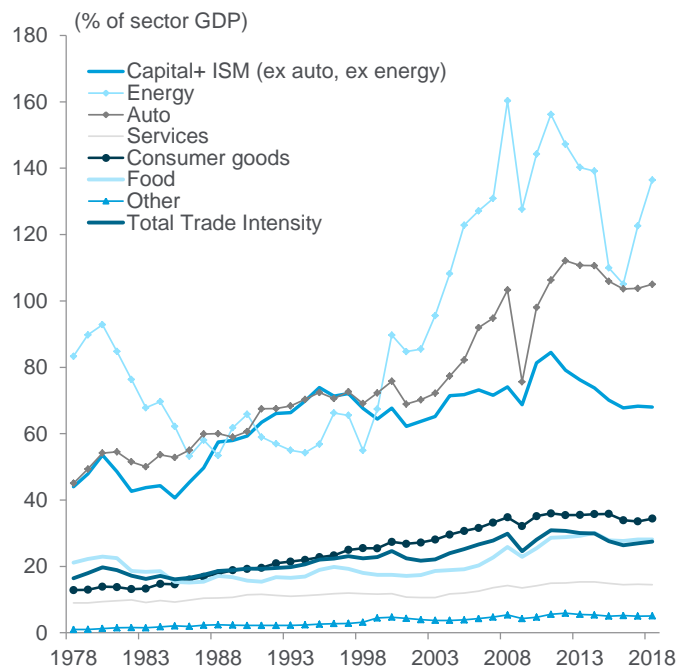
U.S. Trade Intensity May Have Peaked

After increasing for most of the previous few decades, U.S. trade intensity fell during the financial crisis and has failed to date to recover to previous levels. Trade volume by sector as a share of sector GDP shows that services trade intensity still lags, and global integration of investment goods has retreated.

U.S. trade intensity has stalled since the financial crisis, although the trends by important sector have varied.

- Energy, Capital goods plus Industrial Supplies and Materials (ISM), and Autos are the most trade intensive sectors.
 - Since 2008, trade integration of investment goods has fallen.
- Although Services is an increasingly important part of the U.S. economy, Services trade intensity as a share of its own GDP remains low.
- Trade intensity of energy products has been the most volatile sector: after falling for most of the 1980s and 1990s, it picked up in the 2000s up until the financial crisis and has fallen since.
 - This could partially reflect the success of the U.S. shale industry, which has decreased U.S. dependence on foreign energy.

Figure 24. U.S. Trade Intensity by Important Sector, (Exports + Imports as Share of Sector GDP), 1978-2018



Source: Bureau of Economic Analysis, Citi Research

U.S. Imbalance is Large Within Overall Global Imbalance

The U.S. accounts for the majority of the global current account balance (exports minus imports) as a share of global GDP, while oil exporters, the Eurozone, and China account for the majority of the surplus. However, these imbalances have shifted. China, for example, has become a smaller contributor to the global surplus. The main driver of the current account balance is the balance between exports and imports (income on investment and remittances are other components).

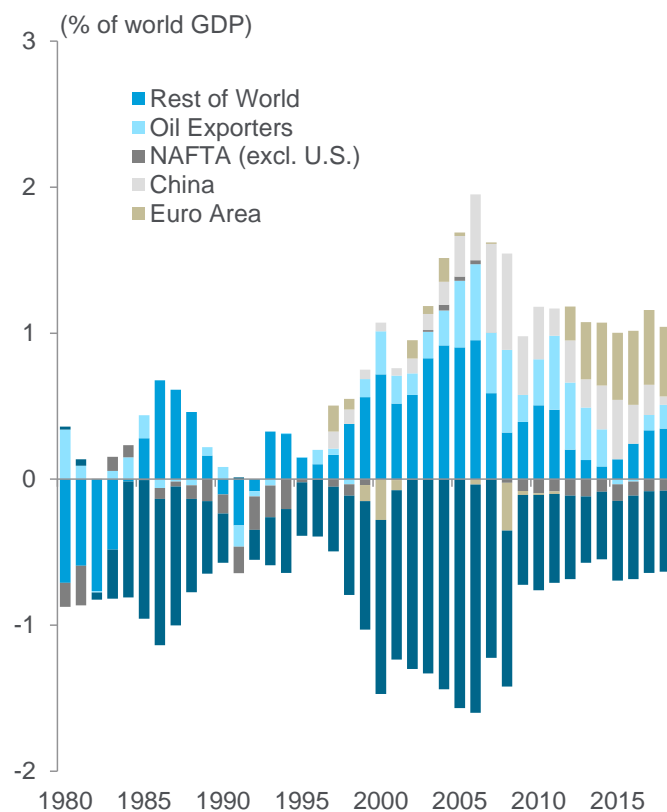
The U.S. current account deficit remains large, but has decreased.

- The increase in the U.S. fiscal deficit and robust growth in the U.S. economy tend to increase the external deficit as robust demand increases imports.

Contributions to global imbalances have shifted.

- The Chinese surplus has narrowed substantially: from a peak of 0.7% of global GDP in 2008, the surplus fell to 0.2% by 2017.
- In addition to the U.S., the other NAFTA nations of Canada and Mexico have also run deficits.
- The once-large surplus of the rest of the world has shrunk.
- The growing surplus of the Eurozone is a key ingredient in the global net surplus.

Figure 25. Current Account Balance: Top Economies as Share of World GDP, 1980-2018



Source: IMF, Citi Research

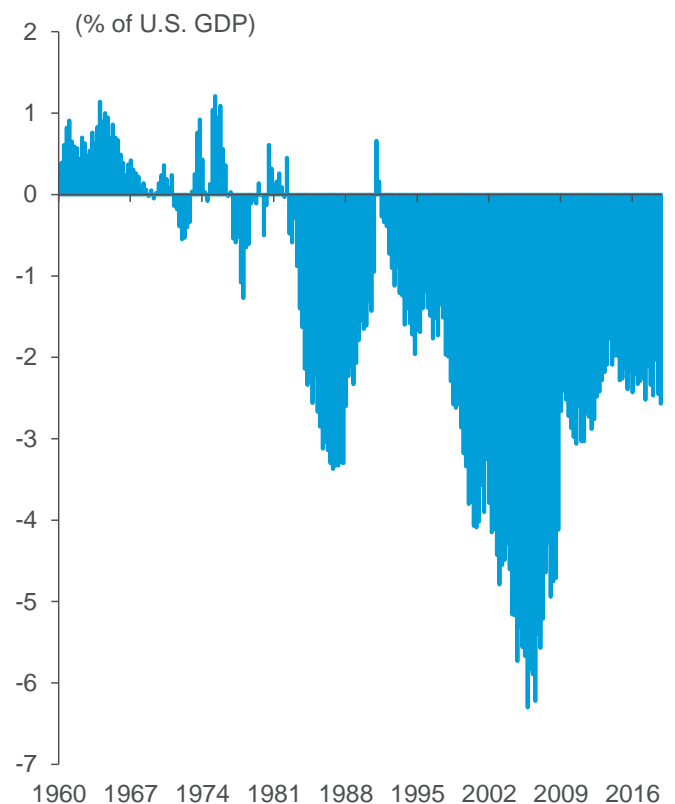
A Narrowing U.S. Current Account Imbalance as Share of GDP

The U.S. current account balance is now a greater share of U.S. GDP than it was 70 years ago. However, in the past decade, the deficit as a share of GDP has shrunk, after peaking in 2005. The current account balance can be interpreted multiple ways.

A current account deficit can be interpreted in multiple ways.

- It can mean the country is “living beyond its means” (i.e., the country has to borrow in order to consume more than it produces) because overall consumption and investment exceed national savings.
- It can also mean that a country is an “oasis of prosperity”, attracting investment from the rest of the world because the economy delivers high investment returns.*
- Indeed, the U.S. has a negative net financial account, indicating that foreign investors hold more U.S. assets than vice versa.
 - However, the U.S. earns more on its foreign asset portfolio than foreigners earn on their larger portfolio of U.S. assets.
- Over the long run, sustained foreign growth could narrow the trade deficit, but in the short run, booming consumption abroad does little to improve the trade account.

Figure 26. U.S. Current Account Balance as a % of U.S. GDP, (%), 1960-2018



Source: Bureau of Economic Analysis, Citi Research

* Mann, Catherine, 2002, Perspectives on the U.S. Current Account Deficit and Sustainability. *The Journal of Economic Perspective*, Volume 16, Number 3, pages 131-152.

** Mann, C., Pluck, K., G7 Current Account Imbalances: Sustainability and Adjustment, NBER, 2007

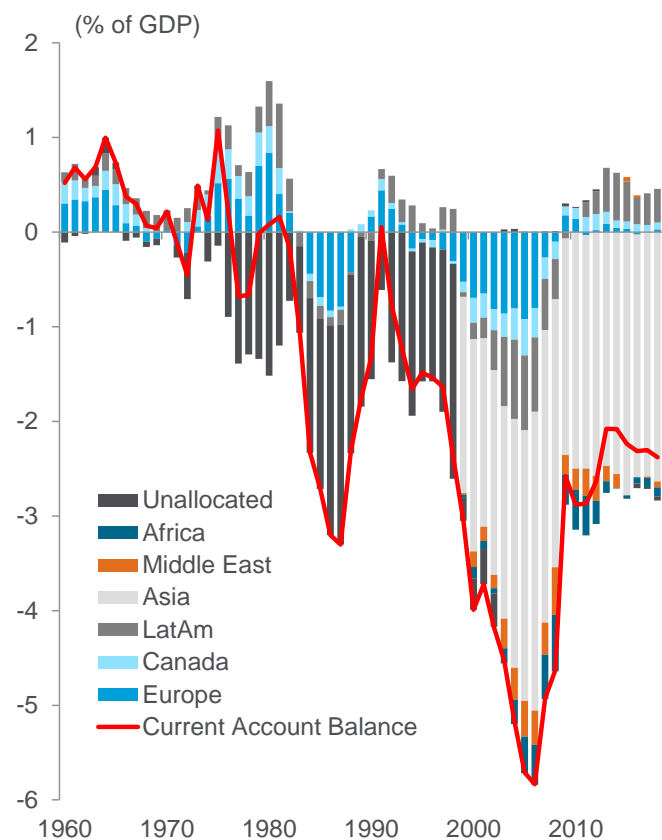
Evolving Bilateral Imbalances

The persistent U.S. current account deficit masks some persistent and some evolving bilateral imbalances. A decomposition of the U.S. current account deficit by trading partner shows that the U.S. primarily runs a deficit with Asia (particularly China) and Europe while recently running a surplus with Latin America.

Income growth, technology, and changing comparative advantage underpin evolving bilateral trade imbalances.

- Technology can affect bilateral deficits.
 - In energy products, the technological advances behind shale production shifted the regional imbalance in the Middle East away from deficit.
- Foreign direct investment and the fragmentation of production through GVCs affect bilateral deficits.
 - The increased deficit with Asia/Unallocated in Figure 27 is partly a result of China entering the global trading system, partly a result of technology allowing the fragmentation of production and foreign direct investment to locate production abroad, and partly the result of robust U.S. growth.
- The difference in savings versus investment is a key driver of bilateral deficit.
 - In Europe, the balance of savings and investment switched dramatically pre and post the financial crisis period, shifting the U.S. bilateral relationship from deficit to near zero.
- Decreasing the deficit has been a priority of the Trump administration, engendering bilateral trade negotiations, but the composition of surplus economies has changed over time.

Figure 27. U.S. Current Account Balance by Region as a Share of U.S. GDP (%), 1960-2018



Source: Bureau of Economic Analysis, Citi Research

U.S. Competitiveness: Surplus in Services, Deficit in Goods

The U.S. doesn't have a deficit in all product types. In particular, the U.S. runs a growing surplus in services, where it exports more than it imports. A decomposition of U.S. trade by category shines more light on the U.S. current account imbalance, changing competitiveness, and the roles for technology and aggregate demand.

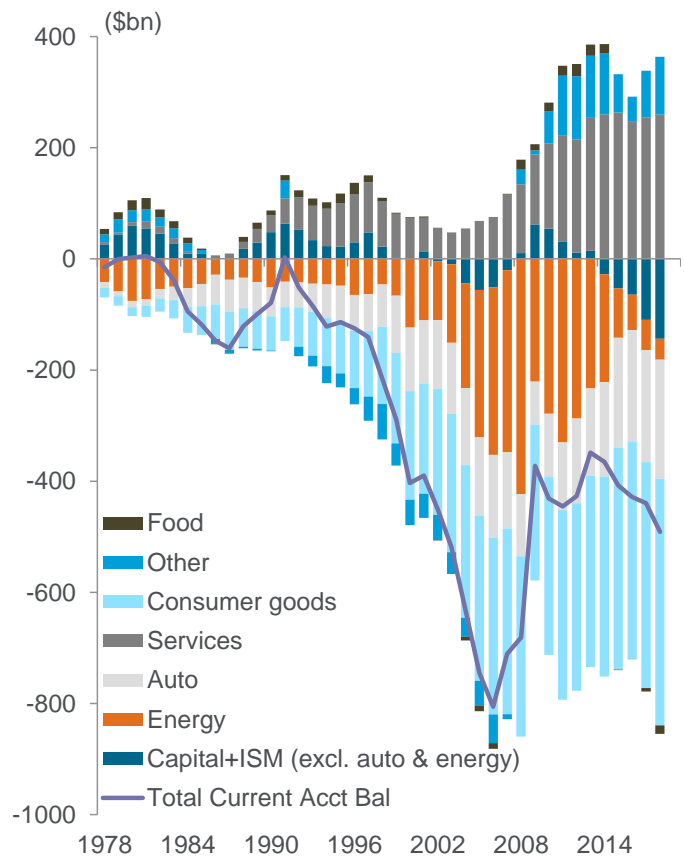
Over the last four decades, U.S. trade has been characterized by a deficit in goods and a surplus in services.

- The trade balance in capital goods and non-energy industrial supplies, which are closely associated with changes in business demand for investment goods, fluctuates with the business cycle.
 - After the financial crisis, the U.S. was a net importer as the U.S. recovery was more robust than in the rest of the world.
- A persistent deficit in energy has been transformed into near balance with the evolution of shale technology.
- The persistent deficits in consumer goods and autos are consistent with the U.S.'s consumer-driven, low-savings economy.

Incomplete global integration in services limits the overall U.S. current account surplus.

- The increasingly large surplus in service is consistent with efficiencies gained from a large domestic market.
- Global liberalization of services would contribute to a narrowing of the overall U.S. external deficit.

Figure 28. U.S. Trade Balance by Important Sector, 1978-2018



Source: Bureau of Economic Analysis, Citi Research

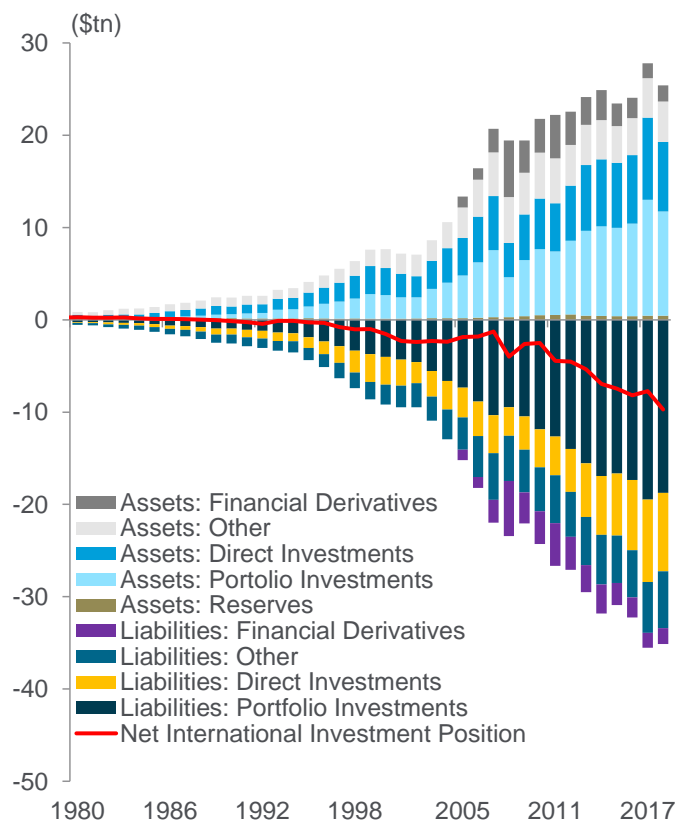
Has U.S. Financial Integration Peaked?

Foreign investors hold more U.S. assets than what U.S. investors hold of foreign assets. However, as seen on the next page, the U.S. earns more on its investments abroad than vice versa, which makes the U.S. portfolio overall akin to a risk-loving investor, willing to take more risk to earn higher returns. In contrast, foreign investors buy low-risk, low-return U.S. Treasury securities.

Foreign investors hold more U.S. assets than what U.S. investors hold of foreign assets

- The long-time current account deficit, which foreign investors finance, is reflected in a negative net international investment position.
- The U.S.'s negative net international investment position is composed of relatively more portfolio investments and direct market investments from abroad.
- The foreign holdings of U.S. portfolio assets are dominated by relatively lower-yielding U.S. Treasury securities.
- Studies find that foreigners hold a greater share of their investment portfolios in the U.S. if they have less-developed financial markets themselves.*
- When comparing the composition of portfolio assets, the U.S. acts as a 'venture capitalist' and invests in riskier assets abroad.*

Figure 29. U.S. Net International Investment Position, 1980-2018



* Forbes, K. "Why do Foreigners Invest in the United States?", IMF, Conference on International Macro-Finance, 2008

Source: Bureau of Economic Analysis, Citi Research

Foreign Investors Hold More U.S. Assets Despite Earning Less

Although foreign investors hold greater amounts of U.S. assets than vice versa, U.S. investors earn higher returns from their foreign investment portfolio. Likewise, U.S. investors earn more in direct investments abroad than vice versa. This could be due to a variety of factors, including managerial differences and differences in tax treatment.

The U.S. earns higher returns on relatively riskier assets abroad.

- Investment income receipts in the U.S. have outpaced investment income payments.
- U.S. primary income (the financial flows from transactions between residents and non-residents through labor, investment, loans, deposits, etc.) is positive, i.e., U.S. receipts are greater than payments.

The U.S. earns higher returns on its direct investment abroad.

- U.S. investors also enjoy greater income from direct investments abroad than vice versa.
- Managerial differences may play a role in generating relatively higher returns on U.S.-owned assets abroad.*
- Differences in tax treatment may also play a role; if so, the changes in U.S. tax code could precipitate a change in the data and in interpretation**

*Boonstra, Wim, "National savings and the international investment position", Zb. rad. Ekon. fak. Rij., 2008, Vol. 26, pg. 9-40; **Hines, J., Jaffe, A. "International Taxation and the Location of Inventive Activity", NBER, 2000, pg. 201-230

Figure 30. U.S. Primary Investment Income Payments vs. Receipts, 1970-2018

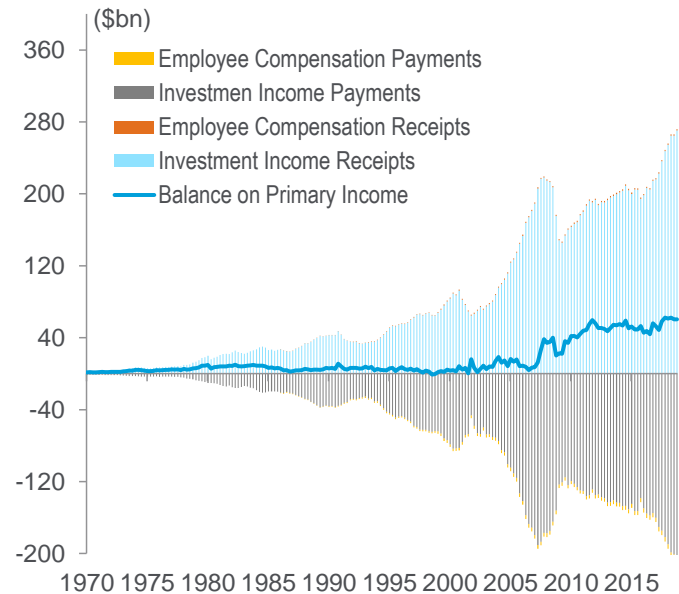
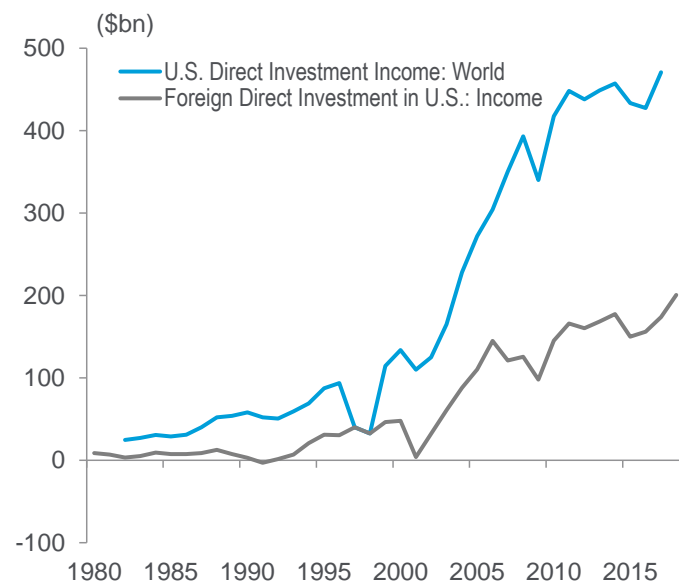


Figure 31. Imbalance of Direct Investment Income, 1980-2018



Source: Bureau of Economic Analysis, Haver Analytics

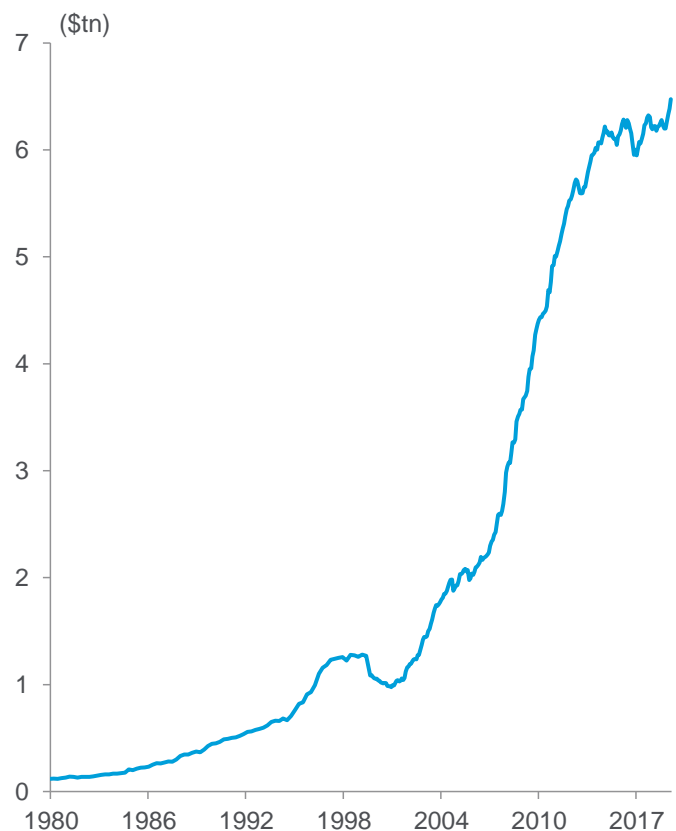
Foreign Investors Are Key Holders of U.S. Treasury Securities

The world has viewed the U.S. as a haven of prosperity and safety — foreign holding of U.S. Treasury securities sky-rocketed through the 2000s. This trend peaked with the onset of Quantitative Easing (QE) as the U.S. Federal Reserve became a key buyer. The rise in purchases of U.S. official assets coincides with the dramatic increase in international reserves, and the global current account surplus.

Foreign investors poured into U.S. Treasuries over the past few decades.

- Foreign investors sought stability, despite sacrificing returns.
- This trend peaked with the onset of QE, as the Federal Reserve became a key buyer.
 - The exit from QE will provide insights as to whether foreign investors will resume buying U.S. official assets.
- China and Japan are by far the largest holders of U.S. Treasuries (19% and 17%, respectively).
 - These two are followed by Ireland (5%), Brazil (5%), and the U.K. (4%).
- The rise in purchase of U.S. official assets coincides with the dramatic increase in international reserves and the global current account surplus.
 - A peaking in those trends may temper a further increase in foreign purchases of US Treasury securities.
 - The increase in the fiscal budget deficit will increase the supply of U.S. Treasury securities at a time when foreign official purchases may be tapering off.

Figure 32. Foreign Holdings of U.S. Treasuries, (End of Period), 1980-1Q 2019



Source: U.S. Treasury

International Reserves May Have Peaked; Dollar Dominance Has Not

Global foreign exchange reserves, or reserves held by a central bank in foreign currencies, have peaked. Nevertheless, the U.S. dollar has experienced a resurgence recently and remains the largest share of currencies held. The relative strength of the U.S. economy, as well as the importance of the U.S. dollar in global transactions, both support the dollar dominance.

The importance of the U.S. dollar in international reserves has recovered.

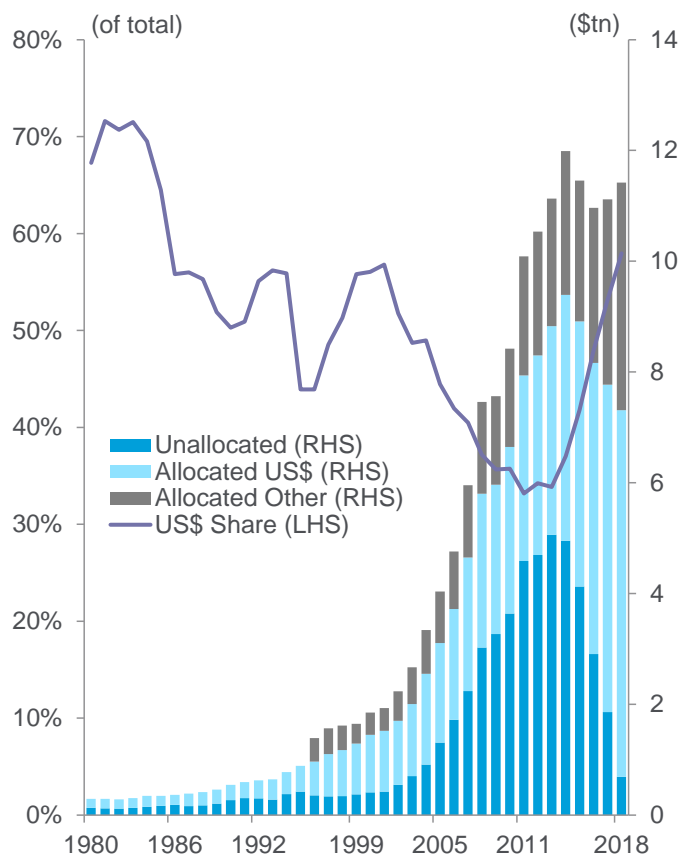
- International banks have actively added U.S. dollars to their reserves, causing the total to rise.
- Research shows that banks use net stabilizing intervention: e.g., the quantity share of U.S. dollars tends to rise when the U.S. dollar depreciates.*
 - However, over the 1996 to 2018 period, the dollar appreciated and the U.S. dollar now accounts for a larger share of international reserves (56% in 2018 vs. 43% in 1996).**

In order to provide transparency and lobby for the Chinese yuan to be designated an official reserve currency China began reporting its reserves to the IMF in 2015.

- These reserves then became designated as 'allocated' rather than 'unallocated'.
- However, total reserves have still fallen even when one disregards this shift.***

*Truman, E., Wong, A., "The Case for an International Reserve Diversification Standard", Institute for International Economics, May 2006; Anna Wong, 2007. "Measurement and Inference in International Reserve Diversification," Working Paper Series WP07-6, Peterson Institute for International Economics; **Bloomberg; Citi Research; ***<https://www.straitstimes.com/business/china-reports-first-official-forex-reserve-data-to-imf>

Figure 33. Current Composition of Foreign Exchange Reserves (COFER) US\$, 1980-2018



Source: IMF, Citi Research

Dollar Strength: Trade-Weighted U.S. Dollar Index

Dollar strength reflects a strong U.S. economy, although it can hurt U.S. exporters by making their products relatively more expensive. The U.S. dollar has appreciated since the financial crisis, although less dramatically than in prior periods and with less divergence between industrial and emerging market currencies.

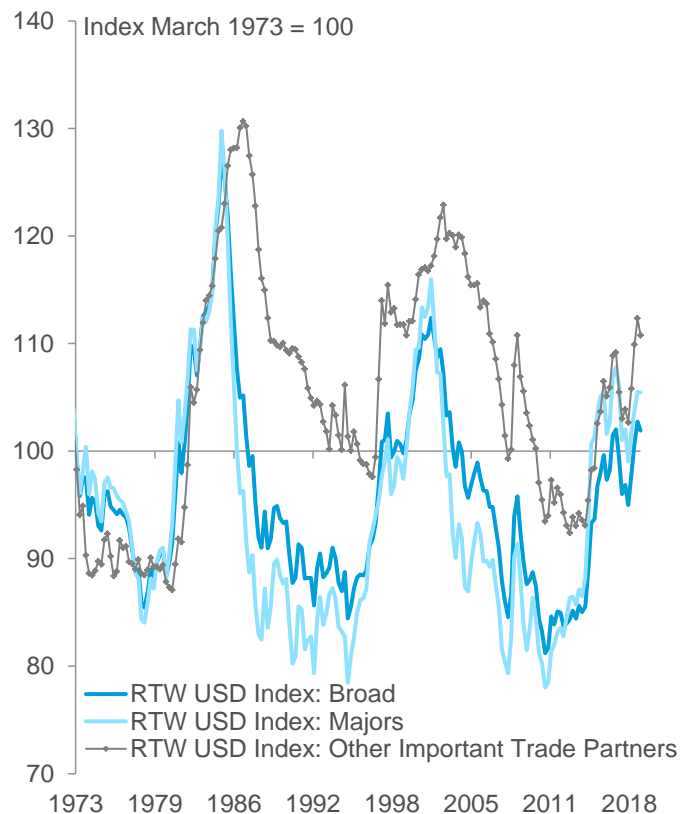
Trade-weighted U.S. dollar indices highlight U.S. dollar dynamics and also convergence among groups of trading partners.

- Although the U.S. dollar has strengthened since the financial crisis, this episode of appreciation is relatively less compared to historical episodes.
- In contrast to previous cycles, the trade-weighted index has appreciated more-or-less similarly for industrial vs. emerging market currencies ('Other Important Trading Partners').
- Consistent dollar strength raises the price in local currency of U.S. products in foreign markets.

Dollar-invoicing and supply chains temper the competitive consequences of dollar exchange rate movements, but profit margins adjust.

- When supply chains are invoiced in dollars, a change in the value of the dollar does not change the import or export price, but the domestic value added, in domestic currency can adjust to try to mitigate currency fluctuations.

Figure 34. Real Trade-Weighted U.S. Dollar Indices, (Index March 1973 =100), 1973-Q1 2019



Note: Major Currencies index includes the Euro Area, Canada, Japan, UK, Switzerland, Australia, and Sweden; Other Important Trading Partners index includes Mexico, China, Taiwan, Korea, Singapore, Hong Kong, Malaysia, Brazil, Thailand, Philippines, Indonesia, India, Israel, Saudi Arabia, Russia, Argentina, Venezuela, Chile, and Colombia; Broad index includes all of the above

Source: FRED Economic Data St. Louis Fed

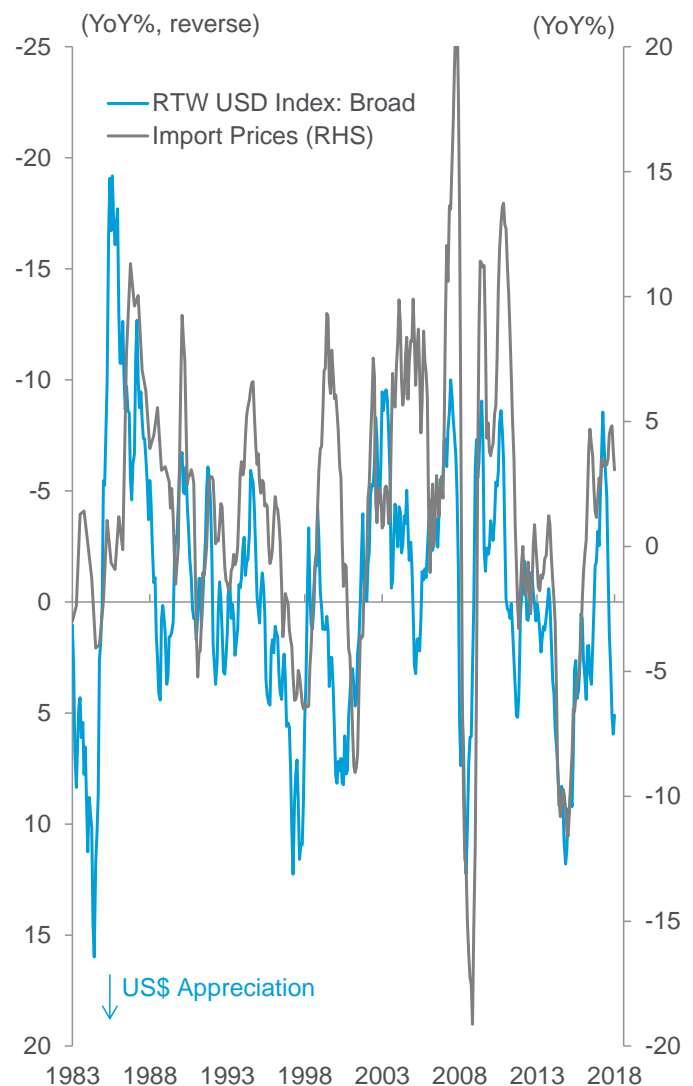
U.S. Dollar Index vs. Import Prices on All Goods

In principle, a stronger U.S. dollar translates into cheaper U.S. import prices (lower cost of foreign goods for U.S. consumers). However, profit margins and currency invoicing affect the extent of the pass-through. Sometimes, foreign firms adjust their profit margins rather than changing their export prices to the U.S.

A stronger U.S. dollar theoretically translates into relatively cheaper U.S. import prices. However, this relationship doesn't always hold.

- Sometimes, foreign firms maintain or even increase their export prices to the U.S. when the dollar appreciates. Similarly, when the dollar depreciates, firms maintain their dollar prices. Rather than prices adjusting, profit margins adjust.
 - This so-called 'pricing to market'* stabilizes the relative price of foreign to domestic products, which reduces demand shifts between imports and domestic products. The strategy helps to maintain market share for foreign producers.**
- Research has found that U.S. exporters tend to pass on exchange rate fluctuations to foreign prices (because the dollar invoicing means a 1-for-1 change in the foreign-currency price. So, export prices and demand response may fluctuate more than import volumes.
 - Contractual relationships of GVCs temper these forces.
- Tariffs are not included in the import and export price indexes.

Figure 35. U.S. Import prices for All Goods vs. Real Trade-Weighted Dollar Broad Index, (% YoY), 1983-1Q 2019



*Krugman, P., "Pricing to Market when the Exchange Rate changes," National Bureau of Economic Research, 1986; **Rangan, S, Lawrence, R, "The Responses of US Firms to Exchange Rate Fluctuations: Piercing the Corporate Veil", Brookings Papers on Economic Activity, 2: 1993

Source: BLS, FRED Economic Data St. Louis Fed, Citi Research

U.S. Bilateral FX Rates vs. Import Prices by Country

Whereas the previous page focused on the U.S. dollar versus import prices of all goods, this page focuses on U.S. dollar bilateral exchange (FX) rates for specific countries. U.S. import prices for some countries, such as Japan, are more sensitive to the bilateral exchange rate than others, such as China.

Import prices for goods from some countries are highly sensitive to bilateral exchange rates.

- For example, import prices of goods from Japan are highly correlated with the U.S. dollar/Japanese yen exchange rate.
- Likewise, import prices from Mexico and Canada are very correlated with the U.S. dollar/Mexican peso and U.S. dollar/Canadian dollar, respectively.

Figure 36. U.S. Import Prices for All Goods from Japan vs. Bilateral Exchange Rates vs. U.S. Dollar, (% YoY), 2000- 1Q 2019

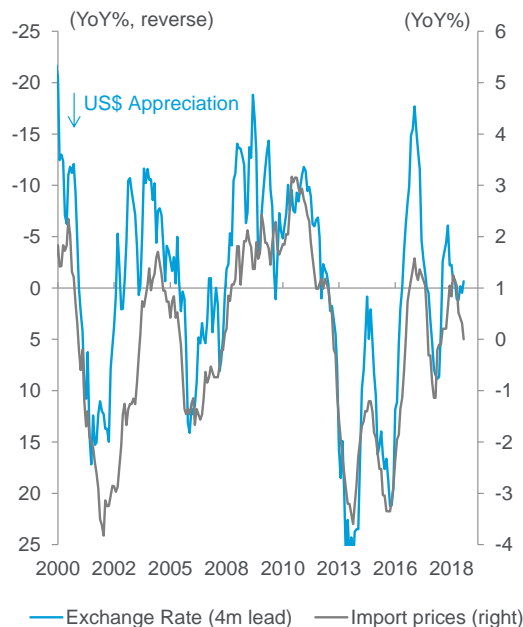
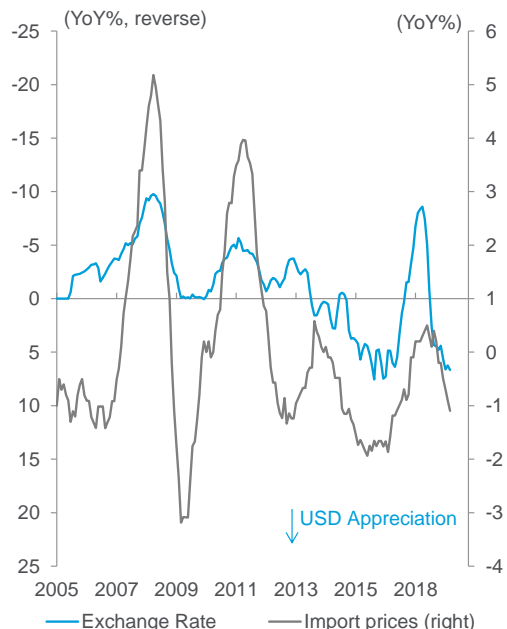


Figure 37. U.S. Import Prices for All Goods from China vs. Bilateral Exchange Rates vs. U.S. Dollar, (% YoY), 2005-1Q 2019



Import prices for goods from other countries aren't as sensitive to exchange rates.

- For example, import prices from Germany and the U.K. are less affected by changes in the euro or pound.
- Likewise, some previously strong relationships have weakened over time.
 - Chinese import prices do not seem as sensitive to changes in the U.S. dollar/Chinese renminbi over the past year as they have been in earlier time periods.
 - Import prices from Vietnam, Malaysia, and Thailand have also been less sensitive to exchange rates over the past year.

Source: BLS, Bloomberg, Citi Research

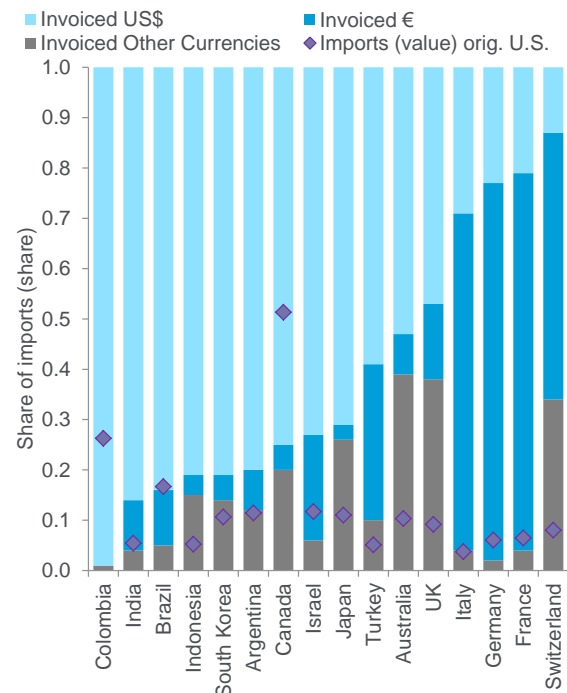
U.S. Dollar Invoicing Dominates Trade Contracts

Although trade with the U.S. makes up a relatively small part of a lot of countries' overall trade, the U.S. dollar plays an outsized role as most trade contracts are invoiced in U.S. dollars. This makes fluctuations in the dollar particularly important. For example, a 1% U.S. dollar appreciation against all other currencies in the world, which makes traded goods more expensive, is associated with a 0.6-0.8% decline within a year in the volume of total trade between countries in the rest of the world.

Dominance of dollar invoicing affects exchange rates and relative prices in trade.

- Research shows that dollar dominance has an asymmetric relationship between global trade prices and volumes in local currencies.*
 - A 1% appreciation in the U.S. dollar against all other currencies is associated with a 0.6-0.8% decline within a year in the volume of *total* trade between countries in the rest of the world.
 - This is because the local-currency depreciation raises import prices in local currency and reduces imports, but does not enhance exports because dollar invoicing breaks the link to export price competitiveness. Instead, the dollar invoicing of exports raises the effective price of exports to non-U.S. buyers.
- Since the dominance of dollar invoicing has remained relatively stable over time,** other factors such as supply chains, affiliated trade through multinationals, increased international reserves, and the introduction of the euro may be important for this asymmetric relationship between the dollar and global trade.

Figure 38. Select Countries: Share of Imports Invoiced in US\$ and € vs. Share of Total Imports that Come from the U.S., 2017



*Boz, E, Gopinath, G, Plagborg-Moller, M, "Global Trade and the Dollar", NBER, 2017;
 **Gopinath, G, "The International Price System", Harvard University and NBER, 2015

Source: Invoice currency shares from database created in Boz, E, Gopinath, G, Plagborg-Moller, M, "Global Trade and the Dollar", NBER, 2017; Import values from UN Comtrade database

So What if Globalization has Peaked?

Consistent with the trends of recent years, the topic of whether globalization is good or bad is a polarizing one. Many people have already formed strong opinions about globalization and are either advocates for its continuation or staunchly oppose it. There is an abundance of literature out there arguing both the pros and cons of globalization. We fall on the side that globalization is a good thing and has provided tremendous benefits to the world economy, including larger markets, more variety, lower prices, technology spillovers, financial diversification, and intergenerational smoothing. For each of the benefits we highlight above, we provide a link to an academic study that provides further background in the pages that follow.

If globalization were to retreat permanently, we believe there would be a basket of things that would be lost from the global economy. These include a reduction in the variety of goods and services available to consumers as well as a reduction in the size and varieties of markets that firms can sell to. The transfer of technology knowledge would likely slow leading to a decline in innovation and productivity while countries would be less able to take advantage of their endowments in things like natural resources or weather. And investors and corporates would lose out as financial structure diversity would decline.

Looking closer at the effect on trade between countries with different natural resources and endowments, when trade opens up between countries of different production factors (endowments and resources), prices change, which induce new patterns of consumption and production. For example, countries at different stages of development produce different types of products and when trade opens up, prices and patterns of trade change. Over the past few decades, global trade has shifted towards advanced economy-to-emerging market (AE-to-EM) and EM-to-EM and away from AE-to-AE trade.

Trade also takes place between countries that are similar in terms of endowments, but different in terms of consumption preferences (tastes). For example, advanced economy countries trade with other advanced economy countries not because they have different production capabilities, but because they have different tastes. However, U.S. trade with other G7 countries has become less and less important during the 21st century.

If Globalization Has Peaked, What Do We Lose?

We recognize that most people have strongly formed opinions about globalization: they either already accept that it's a good thing, or they staunchly oppose it. Therefore, we provide a brief section below with additional resources in case people want to do their own reading. Extensive research has attributed a wide range of economic benefits to globalization including:

Figure 39. Globalization has Provided Tremendous Benefits

Larger markets (including gains from scale)

- Global corporations look at the whole world as a marketplace for their product.
- Source: Levitt, Theodore. "The Globalization of Markets." *Harvard Business Review*, 1 Aug. 2014.

More variety

- Import products that are not produced at home because of lack of scale or lack of resources
- Source: Leamer, Edward E. *The Heckscher-Ohlin Model in theory and practice*, Princeton Studies in International Finance, 1995.
- Source: Broda, C., Weinstein, D., "Globalization and the Gains from Variety", *Quarterly Journal of Economics*, 2006.

Lower prices (consumers can buy from lower-cost producers)

- Increased GVC participation has contributed to lower producer prices.
- GVC integration dampens producer price inflation via lower unit labor costs for sectors with greater foreign inputs.
- Source: Andrews, D., P. Gal and W. Witheridge (2018), "A genie in a bottle?: Globalisation, competition and inflation", *OECD Economics Department Working Papers*, No. 1462, OECD Publishing, Paris.

Technology spillovers (R&D, but also diversity of approaches)

- As a result, domestic labor productivity increases.
- Source: Costinot, Arnaud, and Andres Rodriguez-Clare. "Trade Theory with Numbers: Quantifying the Consequences of Globalization." *Handbook of International Economics* (2015): 197-261.
- In emerging-market economies, foreign knowledge accounted for 40% of observed sectoral productivity growth from 2004 to 2014.
- Source: *IMF World Economic Outlook*, April 2018.

Financial diversification

- Risk sharing provides benefits and gives investors access to additional markets.
- Source: *OECD (2015) How to restore a healthy financial sector that supports long-lasting, inclusive growth? OECD Economics Department Policy Note no. 27.*

Intergenerational smoothing

- Allows for transfers of wealth across generations even if family members have moved to a different country.
- Source: Dornbusch, Rudiger. "Intergenerational and International Trade." *Journal of International Economics*, Vol. 18, No. 1/2, (February 1985), pp. 123-139.

Source: Citi Research

Why Do We Lose?

The essence of the gains from globalization comes from engaging with countries that are different – whether these differences are in consumer tastes, or technology, or financial structure, or resources, or demographics.

Figure 40. We Have a Lot to Lose from Turning Away from Globalization

Tastes and varieties (consumption basket) and market opportunities

- Globalization opens up the opportunity for consumers to have a wider variety of life-enhancing goods and services which are not available in the domestic economy.
- Globalization creates new markets for products produced by firms at domestically, which allows for greater economies of scale in production.
- Source: Krugman, Paul R. "Intraindustry Specialization and the Gains from Trade." *Journal of Political Economy*, vol. 89, no. 5, 1981, pp. 959–973.

Technology (production technology, education, R&D) and productivity growth

- Globalization spreads technological innovation and knowledge transfer. Global teams are more innovative than those with a single perspective.
- Source: IMF *World Economic Outlook*, April 2018.
- Trade generates gains by exchanging factor services (labor and other services) used for production.
- Source: Costinot, A., A. Rodríguez-Clare, "The US Gains From Trade: Valuation Using the Demand for Foreign Factor Services", *Journal of Economic Perspectives*, Volume 32, Number 2, Spring 2018, pg.3-2.
- Global firms are more productive and when domestic firms trade with global firms, they also become more productive.
- Source: Chiara Criscuolo & Jonathan Timmis, 2017. "The Relationship Between Global Value Chains and Productivity," *International Productivity Monitor*, Centre for the Study of Living Standards, vol. 32, pages 61-83, Spring.

Endowments (weather, resources)

- Globalization can mitigate tensions in natural resources by reorienting investments and trade flows.
- Source: Cassen, C., T. Brunelle, H. Waisman, "Globalisation, Natural Resource Constraints and Scales of Sustainable Pathways", *CIREP*, December 2013.

Time rate of preference (demographics and savers/spenders culture)

- Financialization reduces credit constraints to firms, raises the return to saving for households, and allows a better match between the lifetime profile of consumption vs. savings.
- Source: Chen, Siao-fen, "Globalization and household saving: is there a link?", *Applied Economics*, November 2016.

Financial structure

- Engaging with countries of different financial structures (equity markets, foreign direct investment, venture capital) open up new resources of finance for firms to expand. In addition, a more diversified financial structure increases economic resilience in the face of shocks.
- Source: "Principles for financial market infrastructures", *Bank for International Settlements and International Organization of Securities Commissions*, April 2012.

Source: Citi Research

Trade Between Countries of Different Production Factors

When trade opens up between countries of different production factors (endowments and resources), prices change, which induce new patterns of consumption and production. For example, countries at different stages of development produce different types of products and when trade opens up, prices and patterns of trade change. Over the past few decades, global trade has shifted towards advanced economy-to-emerging market (AE-to-EM) and EM-to-EM and away from AE-to-AE trade.

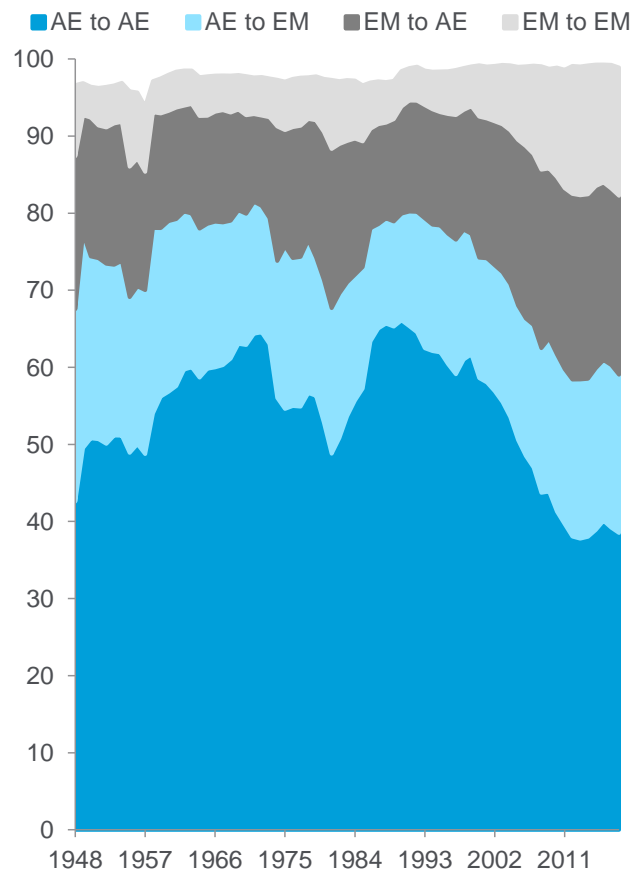
Gains from trade come from changes in production and consumption patterns induced by globally-integrated prices.

- Production changes generate winners and losers (exporting firms expand and hire, importing firms contract and fire).
- Consumers gain from lower prices from imported products and higher wages from moving to employment in the export sector.
- Gains from trade for the U.S. are estimated at 2% to 8% of GDP*

Global trade patterns show a shift from AE-to-AE trade towards AE-to-EM and EM-to-EM trade.

- The decline in the share of AE-to-AE export trade in total global trade is consistent with the shrinking share of AEs in global GDP.
- The rise of AE-to-EM and EM-to-AE is consistent with the off-shoring model and the development of GVCs.
- The rise of EM-to-EM trade comes with the rising share of EMs in global GDP, and the greater globalization of those economies. The fragmentation of production networks into GVCs also increases the share of EM-to-EM trade.

Figure 41. Directional Imbalance: Changing Export Relationships, (% of global exports), 1948-2018



* Costinot, Arnaud and Nadres Rodriguez-Clare, "the US Gains from Trade: Valuation Using the demand for Foreign Factor Services, Journal of Economic Perspective, Spring 2018

Source: IMF Direction of Trade, Citi Research

Trade Between Countries of Different Tastes

Trade also takes place between countries that are similar in terms of endowments, but different in terms of consumption preferences (tastes). For example, advanced economy countries trade with other advanced economy countries not because they have different production capabilities, but because they have different tastes. However, U.S. trade with other G7 countries has become less and less important during the 21st century.

The gains from trade come more from ‘variety’.

- A domestic consumer with ‘minority’ tastes can buy the variety of product s/he prefers, not just the one that is produced for the ‘majority’ taste in their home market.
 - This can explain why advanced economies trade between each other despite having similar technology and production capabilities.
- Economies of scale can be an important rationale for observing the dominance of production for majority ‘tastes’. E.g. the firm that produces for the majority tastes also enjoys economies of scale, and therefore lower costs and prices.

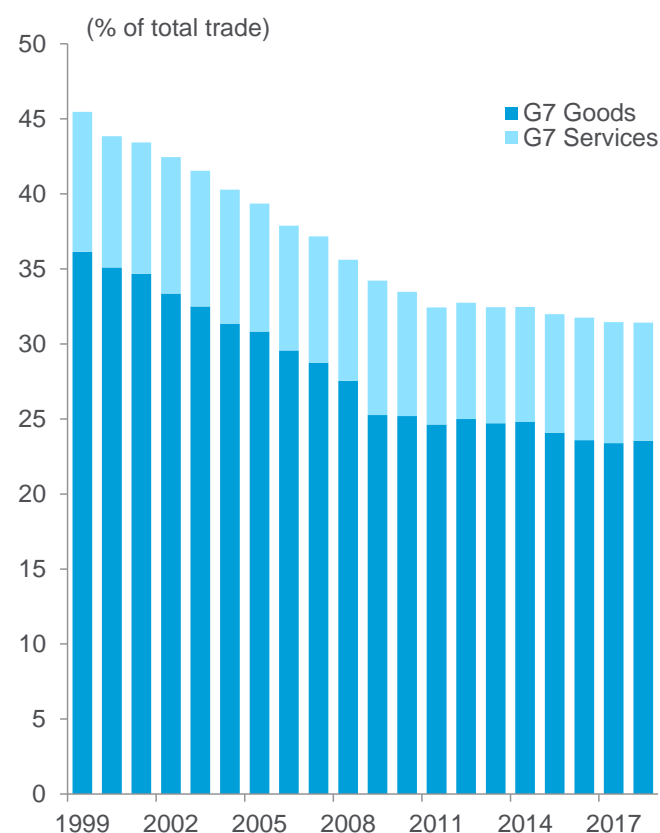
The consumer gains from variety are large.

- Trade between 1972 and 2001 increased product variety in the U.S. by a factor of four, which translates to a welfare gain of 2.6% of GDP.

U.S. trade with other G7 nations make up a significant, but decreasing, share of its overall trade.

- Trade with other G7 countries made up over 45% of the US’s overall trade (imports plus exports) in 1999, but has fallen to 30% in 2017 as US exporters push into EM markets for increased sales and as US importers use EM-based production networks.

Figure 42. U.S. Percent of Total Trade (Imports + Exports) That Is With G7 Nations, 1999-2018



* Broda, C., Weinstein, D, “Globalization and the Gains from Variety”, Quarterly Journal of Economics, 2006

Source: Bureau of Economic Analysis, Citi Research

Regardless, Something Has Gone Very Wrong in Our Economies

The economic recovery coming out of the global financial crisis has been historically shallow and hasn't been uniform, with the most recent generation seeing their incomes stall at a younger age than older generations. Inequality persists within countries, but not consistently across countries and job gains have skewed towards the upper and lower ends of production with medium productivity jobs providing a drag on employment growth in some cases. Despite economic growth and technological advancement, labor productivity in OECD countries is lower after the crisis than before.

Although the average rate of growth of GDP has nearly recovered to its longer-term trend, about 6% of GDP has been lost relative to what could have been attained if the financial crisis had not occurred. Likewise, the rate of growth of GDP per capita has slowed in high income and upper-middle income countries.

Looking at incomes across generations, we find that incomes for the most recent generations have stalled at younger ages than that of older generations. Those born in the 1960s cohort have seen a slowing of income growth in their peak earnings years (when they were aged in their 50s). The situation for the 1970s cohort is worse as their income growth has fallen in formative earning years (when they were aged in their late 30s).

Regional inequality remains a problem and has increased in some, but not all, countries over the past two decades. One way to measure regional inequality is using the coefficient of variation, which is the ratio between the standard deviation and the mean of a region's disposable income. This inequality increased in some countries from 1995 to 2014, but decreased in others.

Employment gains have been skewed towards the upper and lower ends of productivity, with a hollowing out of the middle. Low productivity jobs and high productivity jobs have contributed the most to employment growth, while medium productivity jobs have contributed less, or even provided a drag on employment growth.

Wages and earnings have stagnated in the U.S., and low-skill workers still lag behind. The dynamic pattern of wage growth has occurred across all industries. Although wage growth in recent years has picked up, it remains well below earlier decades.

Despite economic growth since the financial crisis, overall labor productivity has remained weak in that same time period, although it was already sluggish. In most countries, productivity growth rates (the annual rate of change in GDP per hour worked) is lower after the crisis than it was before the crisis.

The slowdown in the average rate of productivity growth masks the wide dispersion between the frontier firms in each sector and the bulk of firms in each sector. Productivity of frontier firms (defined as the 5% of firms with the highest labor productivity by year and sector) greatly outpaced the non-frontier firms since the early 2000s, although this outperformance has stalled since the crisis.

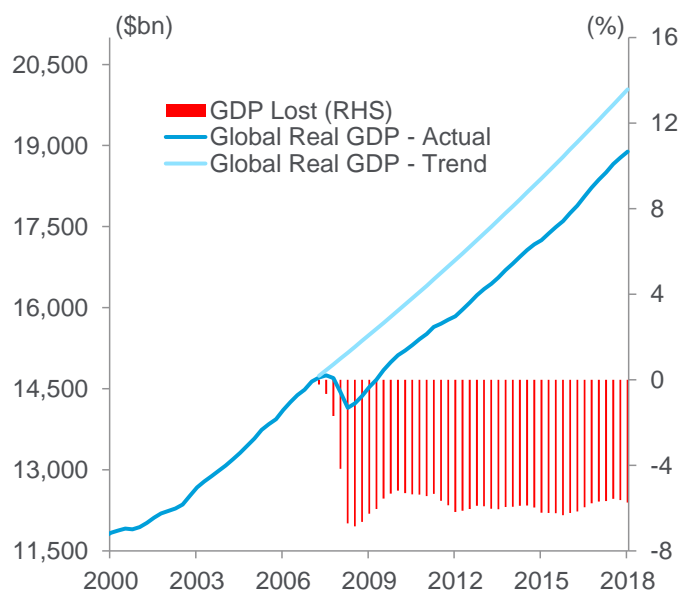
Unrecovered Costs of the Financial Crisis

Although the average rate of growth of GDP has nearly recovered to its longer-term trend, about 6% of GDP has been lost relative to what could have been attained if the financial crisis had not occurred. Likewise, the rate of growth of GDP per capita has slowed in high income and upper-middle income countries.

Amidst a backdrop of decreased global integration and rising global surplus, the global recovery from the crisis was historically shallow.

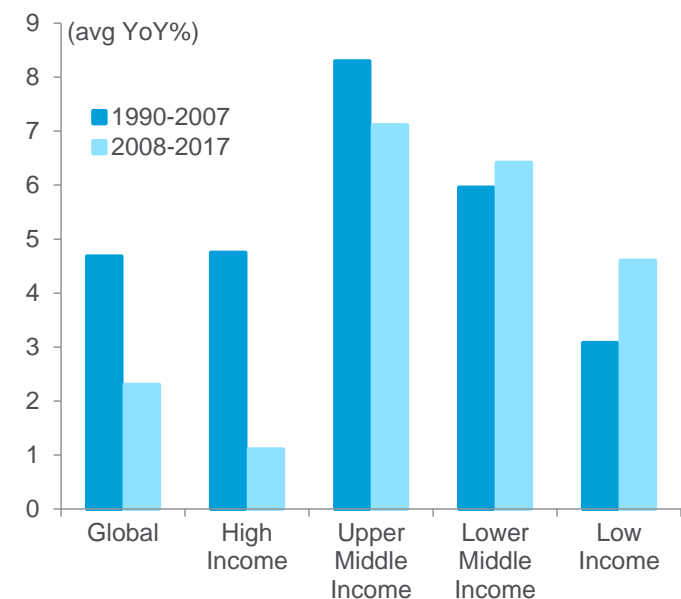
- Policies have not supported a strong enough boom to recover the loss of output.
- Further, the rate of growth of GDP per capita has slowed: average GDP per capita growth from 1990 to 2007 was 4.7% year-over-year compared to 2.3% from 2008 to 2017.
 - This fall has been most pronounced in high and upper-middle income countries.
 - On the other hand, lower-middle income and low income countries experienced higher GDP per capita growth.
- Stalled trade integration is both a cause and an outcome of the loss in output and the slowing of GDP per capita growth.

Figure 43. Global Real GDP Lost From Financial Crisis (%), 2000-2018



Source: Citi Research

Figure 44. Change in Average YoY Percentage Change in GDP per Capita, 1990-2007 vs. 2008-2017



Source: World Bank, Citi Research

Younger Generations Bear Burden of Unrecovered Costs

Although the average rate of growth of GDP has nearly recovered to its longer-term trend, there is an unequal recovery across generations and income deciles. Incomes from the most recent generations have stalled at younger ages than that of older generations. Those born in the 1960s cohort have seen a slowing of income growth in their peak earnings years (aged in their 50s). The situation for the 1970s cohort is worse as their income growth has fallen in formative earning years (aged in their late 30s).

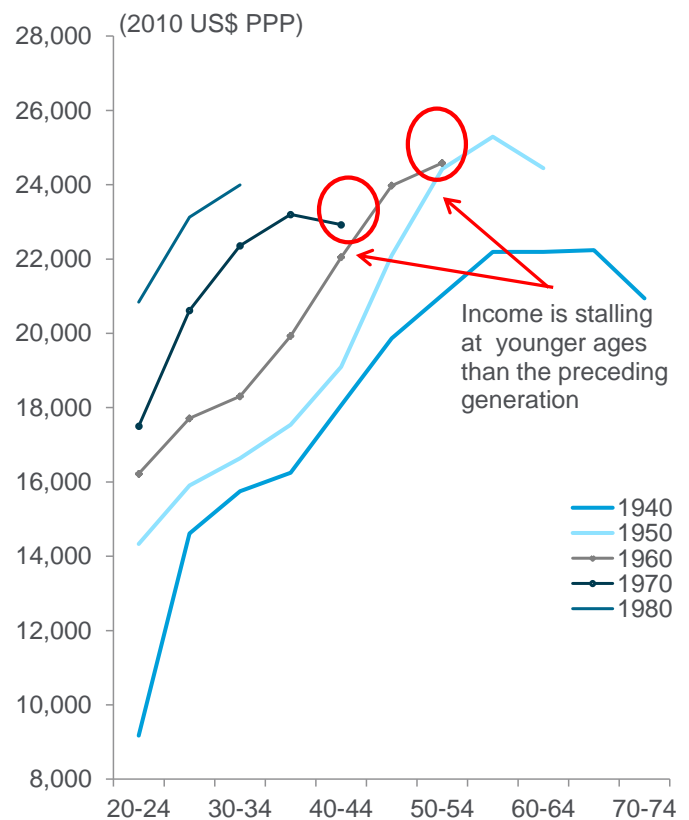
Income growth trajectories of younger generations have slowed.

- Incomes from the most recent generations have stalled at younger ages than that of older generations.
 - Their choices on what to consume, patterns of household formation, and wealth accumulation will affect domestic and global firms and economies, and therefore trade patterns.
- Commitments of pensions and health care to older generations will also be borne by the younger generations.
 - According to the World Economic Forum, the world's six largest pension savings systems (the U.S., the U.K., Japan, the Netherlands, Canada, and Australia) are expected to have an unfunded gap of \$224 trillion by 2050.*
 - This gap is driven by longer lifespans and reduced levels of savings.

Growth rates in household income in many G7 countries have failed to recover to pre-crisis averages.

- In five of the seven G7 countries, the average annual growth rate in household disposable income was lower in the period of 2009 to 2016 than it was in 2000 to 2007

Figure 45. Slowed Income Gains Across Generations: Earnings vs. Age for Generations Born in a Given Year



Note: Data cover 24 OECD countries. The series shown are derived for each cohort from a specification controlling for country and age fixed effects

Source: OECD (2017), Preventing Ageing Unequally, OECD Publishing, Paris.

*Source: World Economic Forum, "We'll Live to 100 – How Can We Afford It?", May 2017

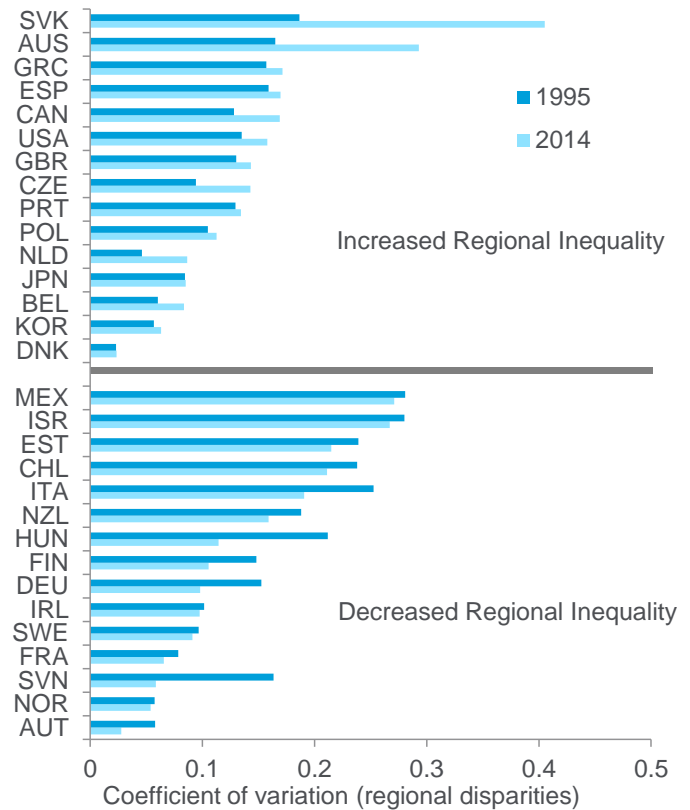
Regional Inequality Persists

Regional inequality remains a problem and has increased in some, but not all, countries over the past two decades. One way to measure regional inequality is using the coefficient of variation, which is the ratio between the standard deviation and the mean of a region’s disposable income. This inequality increased in some countries from 1995 to 2014, but decreased in others.

Regional inequality remains a significant issue in many countries.*

- For example, Italy, Spain, and Turkey all have a 20 percentage point gap between the highest and lowest regional unemployment rates.**
- Overall, in 18 OECD countries the standardized disposable income of metropolitan incomes is on average 18% higher than that for households living in other parts of the country.***
- There doesn’t seem to be a strong link between countries with recent populist tendencies and increased regional inequality.
 - For example, regional inequality decreased in Italy, Hungary, Austria, and Sweden yet increased in the U.S. and the U.K.

Figure 46. Coefficient of Variation of Regional Disposable Income, 1995 vs. 2014



* Regional inequality, i.e., the ratio of the standard deviation and mean of disposable income across regions. **OECD (2015), OECD Regional Statistics (database).
 *** Boulant, J., M. Brezzi and P. Veneri (2016), "Income Levels And Inequality in Metropolitan Areas: A Comparative Approach in OECD Countries", OECD Regional Development Working Papers, 2016/06, OECD Publishing, Paris

Note: The coefficient of variation provides a measure of inequality for a region. It is the ratio between the standard deviation and the mean of a region’s disposable income.
 Source: OECD (2015), OECD Regional Statistics (database), Citi Research

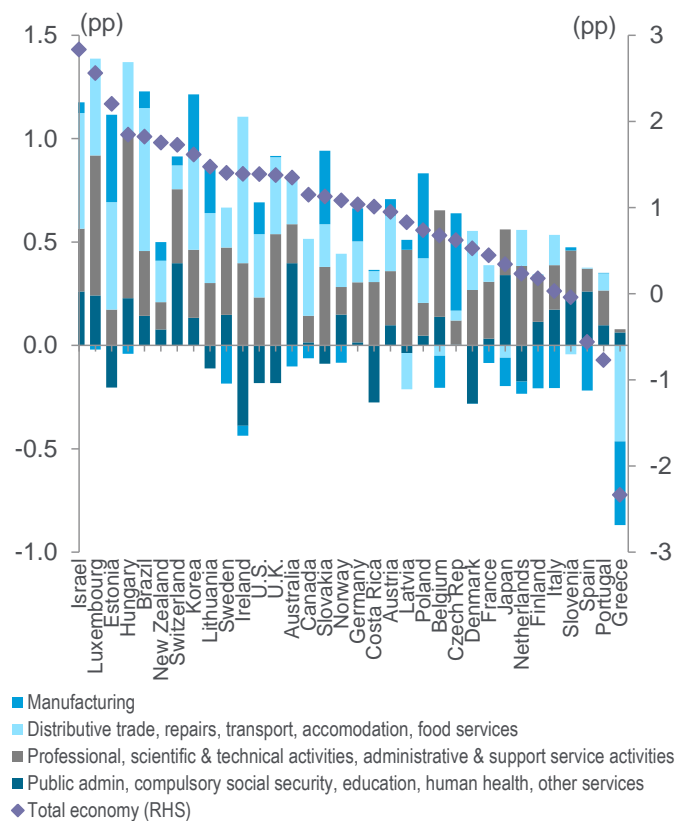
Uneven Job Gains Across Productivity Levels

Employment gains have been skewed towards the upper and lower ends of productivity, with a hollowing out of the middle. Low productivity jobs and high productivity jobs have contributed the most to employment growth, while medium productivity jobs have contributed less, or even provided a drag on employment growth.

Employment gains in low labor productivity activities may be dragging down overall labor productivity.

- Increases in employment from 2010 to 2016 in activities with below average labor productivity were about two to four times higher than those with about average productivity.
- Meanwhile, medium productivity jobs such as public administration and manufacturing saw little to no employment growth.
- On the other side of the spectrum, high productivity jobs (professional, scientific, etc.) also saw increases.
- In our Citi GPS report series on [Technology at Work](#) we look at how technology and automation affect the workforce, including the high exposure of jobs at risk being low-income/low-skill.

Figure 47. Contributions to Employment Growth for the Four Largest Economic Sectors (Percentage Point Contribution at Annual Rate), 2010-2016



* OECD Compendium of Productivity Indicators 2018

Source: OECD National Accounts Statistics (database), February 2018

Uneven Wage Gains Across Skill Levels in the U.S.

Wages and earnings have stagnated in the U.S., and low-skill workers still lag behind. The dynamic pattern of wage growth has occurred across all industries. Although wage growth in recent years has picked up, it remains well below earlier decades.

Real wage growth fell and real earnings stagnated from the start of the 21st century and through the financial crisis, but may now be picking up.

- Median real earnings didn't recover to pre-crisis levels until 2015.

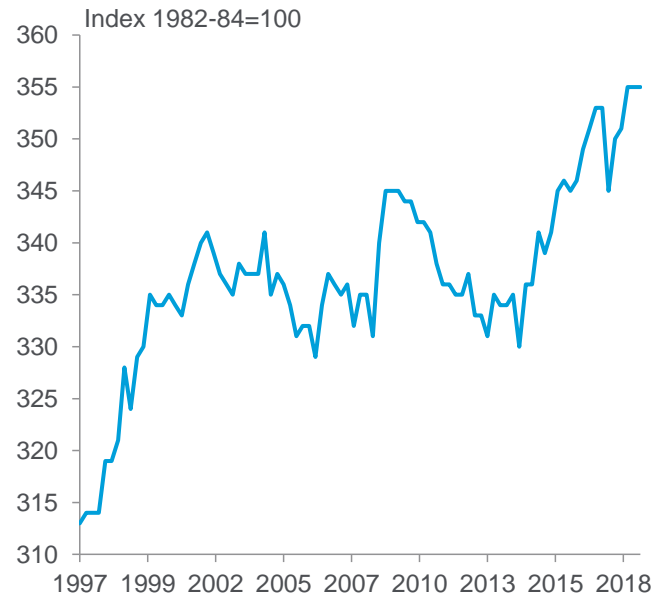
Wage growth in low-skill workers has lagged wage growth in high-skill workers.

- Overall real wage growth has fallen the past two decades and has failed to recover since the financial crisis.
 - Wage growth of low-skill workers fell most dramatically and still lags slightly behind.
- The loss in wage growth has taken place across all industries*
 - The leisure and hospitality industry was hit particularly hard after the financial crisis but has since recovered to the levels of other industries.

Note: High skill includes managers, professionals, and technicians; mid skill includes office and administration, operators, production, and sales; low skill includes food preparation and serving, cleaning, personal care services, and protective services

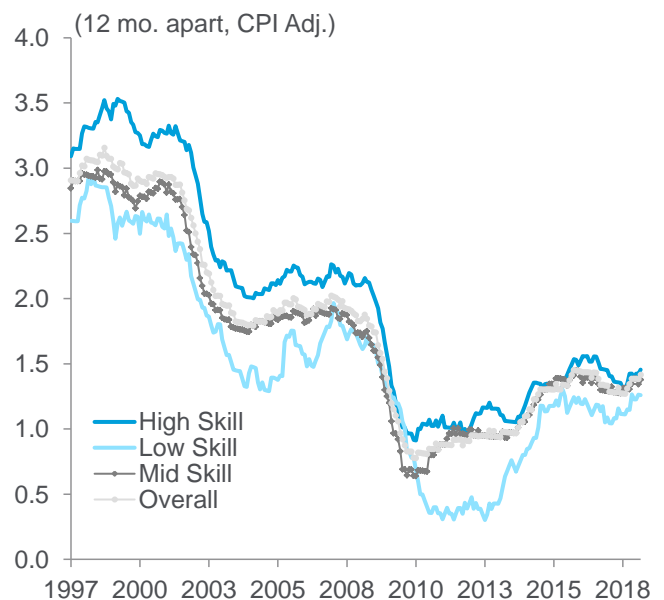
* Atlanta Fed Wage Growth Tracker

Figure 48. Median Usual Weekly Real Earnings (Full Time, CPI Adjusted, Seasonally Adjusted), 1997-1Q 2019



Source: St Louis FRB FRED Economic Data

Figure 49. Median Percent Change in Real Hourly Wage of Individuals 1997-1Q 2019



Source: Atlanta Fed Wage Growth Tracker, Citi Research

Productivity Slowdown

Despite economic growth since the financial crisis, overall labor productivity has remained weak in that same time period, although it was already sluggish. In most countries, productivity growth rates (the annual rate of change in GDP per hour worked) is lower after the crisis than it was before the crisis.

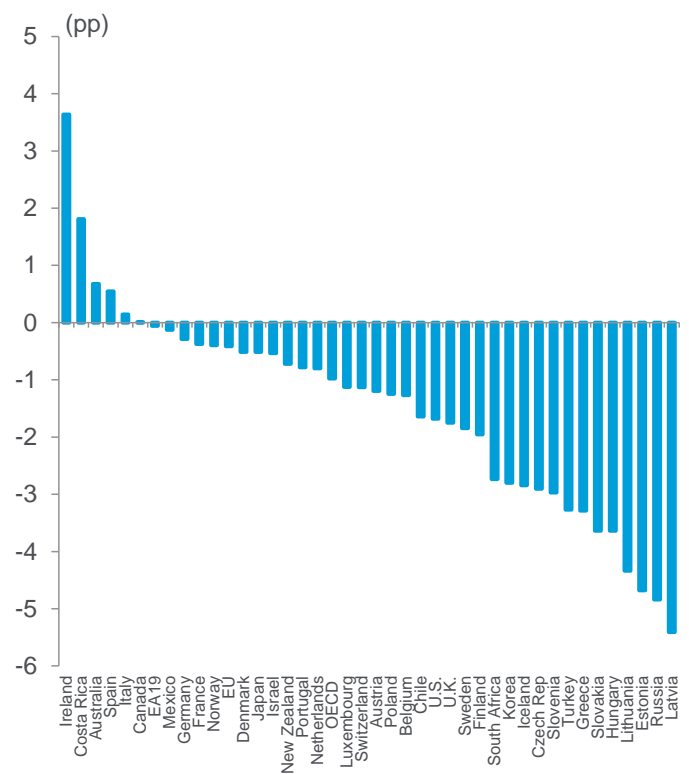
Overall labor productivity remains low across most countries compared to pre-crisis levels.

- Labor productivity in the OECD has grown at about half the rate of the pre-crisis period.
- Eastern European countries such as Latvia, Russia, Estonia, and Lithuania saw the greatest drops in labor productivity.

Falls in labor productivity come despite economic growth and technological advancement.

- Productivity growth has slowed across most industries, particularly manufacturing.
- However, productivity growth in manufacturing has outpaced productivity growth in services.
 - Productivity growth in finance and insurance services contributes less to overall productivity growth post-crisis than it did pre-crisis.

Figure 50. Different in Labor Productivity Growth Rates (GDP Per Hour Worked, Percent Change at Annual Rate), 2001-2007 vs. 2010-2016



* OECD Compendium of Productivity Indicators 2018

Source: OECD Compendium of Productivity Indicators 2018, Citi Research

Productivity Slowdown Is a Dispersion Problem

The slowdown in the average rate of productivity growth masks the wide dispersion between the frontier firms in each sector and the bulk of firms in each sector. Productivity of frontier firms (defined as the 5% of firms with the highest labor productivity by year and sector) greatly outpaced the non-frontier firms since the early 2000s, although this outperformance has stalled since the crisis.

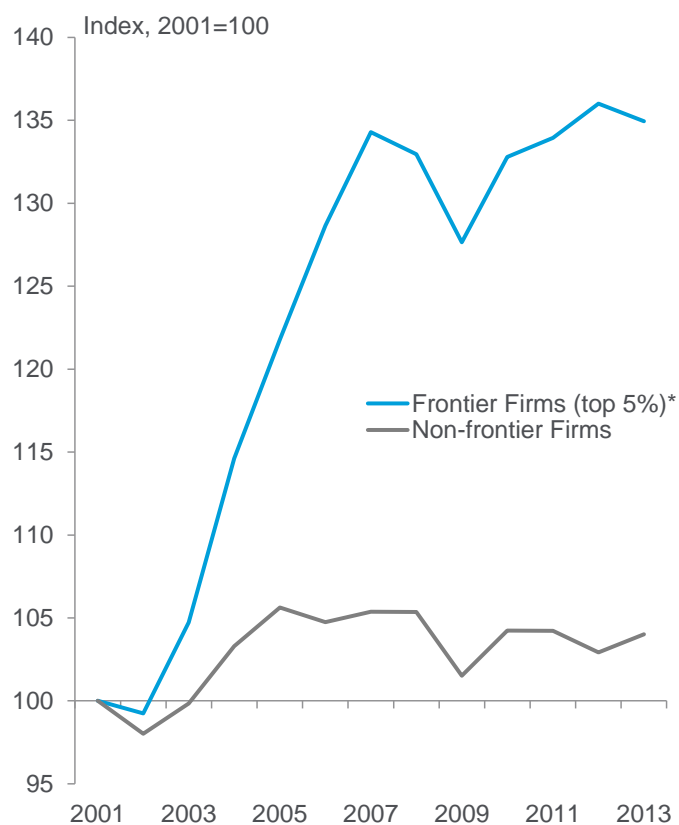
Frontier firms exist in each sector and in each country.

- Productivity increased substantially at frontier firms although it has stagnated since 2007.
- Frontier firms tend to be larger, part of multinational groups and thus globally engaged, use more knowledge-based capital, and have higher quality management than non-frontier firms.*
- The stalling in productivity growth at the frontier may be due to reduced competition, possibly an outcome from increased M&A and possibly from stalled globalization.

Lagging productivity growth at non-frontier firms is a key reason for sluggish average productivity growth.

- There are multiple reasons for the sluggish productivity of non-frontier firms but these differ across economies and are dependent on policies.
- Failure of firms to exit the market through the ever-greening of loans and subsidies for small & medium enterprises (SMEs) can reduce dynamism that would support productivity.
- Failure to exit also captures resources and results in labor mismatch and lower wages.

Figure 51. Labor Productivity At the Firm Level Varies



*: Frontier firms are the 5% of firms with the highest labor productivity by year and sector. Included industries are manufacturing and business services, excluding the financial sector, for firms with at least 20 employees.

Source: Andrews, D., C. Criscuolo and P. Gal (2016), "The Best versus the Rest: The Global Productivity Slowdown, Divergence across Firms and the Role of Public Policy", OECD Productivity Working Papers, No. 5; Orbis data of Bureau van Dijk; and OECD calculations.

* Andrews, D., C. Criscuolo and P. Gal (2016), "The Best versus the Rest: The Global Productivity Slowdown, Divergence across Firms and the Role of Public Policy"

How Much Is Trade to Blame?

In the prior chapter, we highlighted the things that are wrong in the current economy, including a lack of job gains, rising inequalities (within and across generations and across regions within countries), and low productivity. How much of this can be blamed on trade?

We find that trade accounts for very little of the loss of manufacturing jobs in advanced economies. Instead, changing consumption trends have played a larger role. That said, imports for final consumption are associated with a drop in manufacturing employment, but imports of intermediate goods (which still have to be processed), increase manufacturing employment.

Another way to examine the state of the manufacturing sector and its role in overall economic performance is through value added, i.e., how much value the manufacturing of a good creates for the economy. Trade has had a mixed effect on manufacturing value added, while technical coefficients (reorganization of production structures) and changing consumer tastes have been more important.

Changing trade patterns and flows imply that products of advanced economies increasingly face competition from products of emerging markets. Over time, emerging market products move up in complexity, and advanced economy products face new competitors. But the evidence suggests that competition among advanced economies' products is more intense than the competition between advanced economy and emerging market products.

Since the 1990s, industrial employment as a share of total employment has fallen in high-income countries while rising in low-income countries. Countries with larger declines in manufacturing jobs tend to have increased regional inequality, which may contribute to rising populism. However, looking across countries, the links between regional inequality, manufacturing employment, and populism are more nuanced than one might assume.

In Europe between 2000 and 2010, an increase in the global value chain indicator correlated with an increase in regional manufacturing employment rates. Although most regions still saw a fall in manufacturing, those that were more integrated in global value chains experienced less significant falls in manufacturing employment indicating rather than increase regional inequality, trade could actually help alleviate it.

Trade, Technology & Jobs

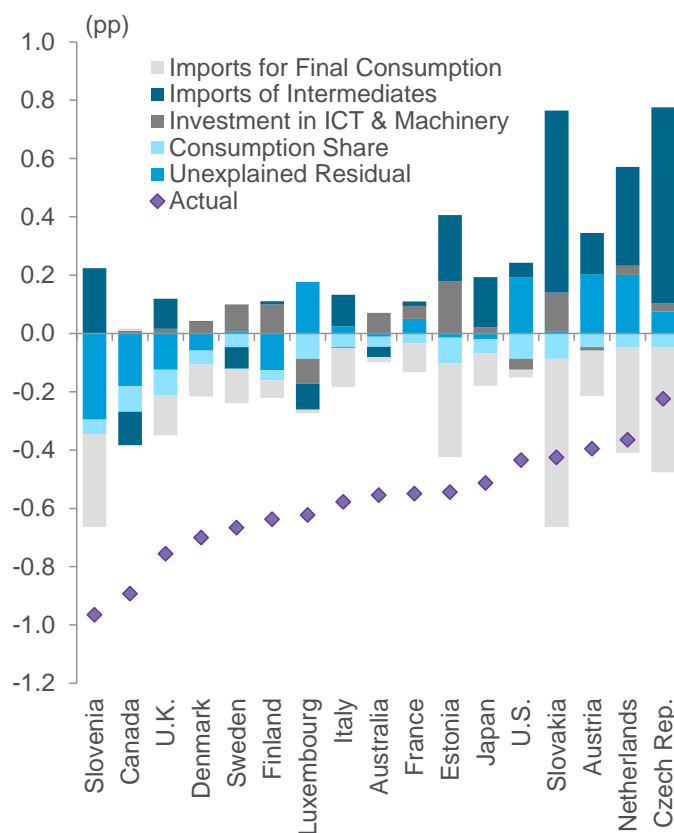
Trade accounts for very little of the loss of manufacturing jobs in advanced economies. Instead, changing consumption trends have played a larger role. That said, imports for final consumption are associated with a drop in manufacturing employment, but imports of intermediate goods (which still have to be processed), increase manufacturing employment.

A closer look at what has caused changes in manufacturing employment highlights factors other than trade.

- Across the board, imports for final consumption are negatively associated with manufacturing employment.
- However, imports of intermediates (parts and materials used to make final goods that are either consumed domestically or exported) are positively associated with employment.
 - The net effect of trade (imports for both final consumption and intermediates) contributed to a fall in manufacturing employment in most of these economies. However, the net effect contributed to an *increase* in employment in the US, Japan, Czech Republic, and Slovakia.
- Investment in information and communication technology (ICT) and machinery is positively associated with manufacturing employment.
- In the U.S., changes in manufacturing employment were also associated with changes in consumption preferences towards services, rather than goods.
- In general, consumers are moving toward consuming more services as a share of their income, and most services are still domestic. But they still consume physical goods, which are produced more cheaply and with greater variety abroad, hence the trade deficit in goods. The trade deficit is also a function of consumer savings choices.

In all these economies, overall employment rose.

Figure 52. Disaggregated Cause of Change in Manufacturing Employment (Annual Average), 1990-2014



Note: The difference between the actual value and net disaggregated values represents a common trend that was the same for all countries and is therefore not shown in this graph. The common trend represents a common factor in the global economy regardless of technology or other factors.

Source: OECD Economic Outlook database, STAN database, OECD calculations

Trade, Technology, and Manufacturing Value Added

Another way to examine the state of the manufacturing sector and its role in overall economic performance is through value added, i.e., how much value the manufacturing of a good creates for the economy. Trade has had a mixed effect on manufacturing value added, while technical coefficients (reorganization of production structures) and changing consumer tastes have been more important.

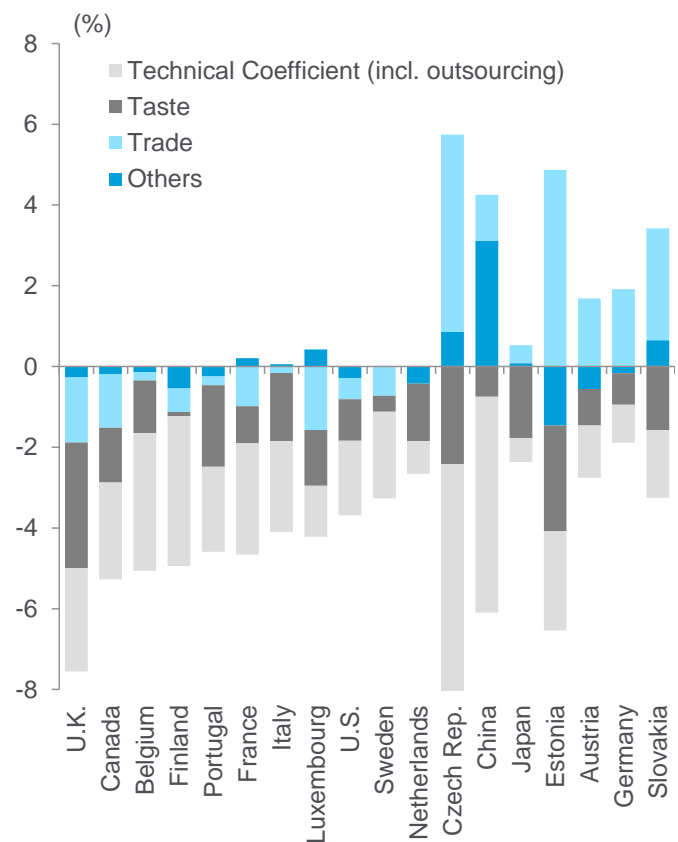
Another way to examine the manufacturing industry is through value added.

- Technical coefficients, which are the effect of changes in the structure of production, are the major driver of manufacturing's share of value added in most economies. For example, in response to changing technology, this includes companies outsourcing their service operations to other firms in the domestic economy.
- Changing consumer tastes have decreased the share of manufacturing in overall value added. In general, as consumers get richer, they tend to spend a greater proportion of their income on services compared to manufactured goods, thereby decreasing the value added of manufacturing in the economy.

Trade has had a mixed effect on manufacturing's value added across countries.

- In some countries (the U.K., Canada, the U.S.), trade has had small negative impacts.
- In other countries (such as small Eastern European nations like Estonia and Czech Republic), trade has had a large positive impact, no doubt reflecting these economies' rapid integration into European trading and production networks.

Figure 53. Contribution to the Change of the Manufacturing Share in Value Added, 1997 vs. 2010



Note: Countries are ranked according to the decline on the share of manufacturing in value added between 1997 and 2020. Source: OECD Economic Outlook database, STAN database, OECD calculations

Increased Competition in Product Space

Changing trade patterns and flows imply that products of advanced economies increasingly face competition from products of emerging markets. Over time, emerging market products move up in complexity, and advanced economy products face new competitors. But the evidence suggests that competition among advanced economies' products is more intense than the competition between AE and EM products.

Advanced economies specialize in more complex exports than emerging markets.

- Goods in the top quartiles of complexity make up large percentages of exports by the EU, Japan, and the U.S.

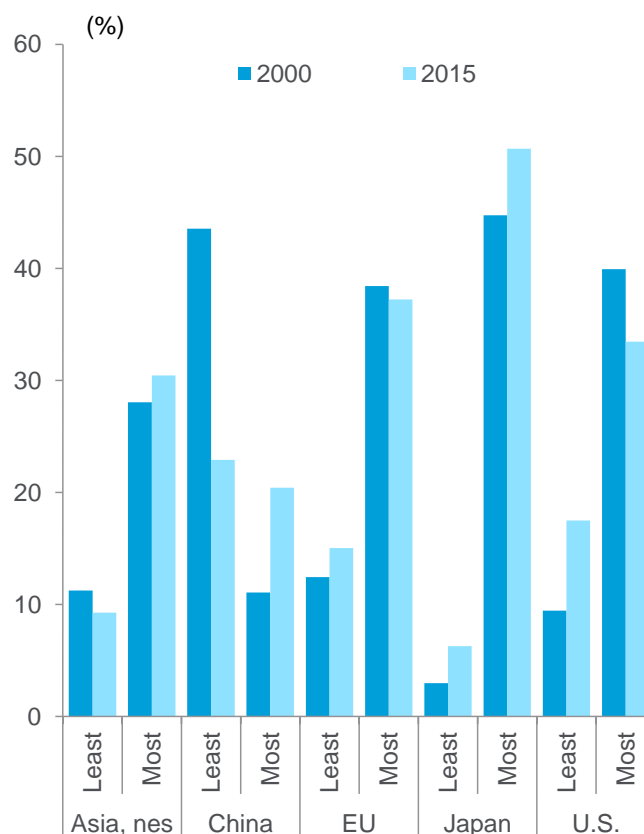
However, emerging markets are specializing more and more in these complex goods.

- For example, China's export basket included a lower share of low-complexity goods in 2015 compared to the export basket in 2000; this means a higher share of high-complexity goods.
- As emerging market products move up in complexity, the advanced economy firms are faced with a narrower range of products in which they compete with each other. This heightens the competition among AE producers and products.

Response to intensified competition varies.

- Intensified competition among firms in advanced economies can promote outsourcing or M&A to protect market share. So, increased trade plays a role, but the process is complex and there are other factors as well.

Figure 54. Percentage of Export Goods by Complexity



Note: "Least complex" means the good (using HS92 classification) is in the bottom quartile of Product Complexity Rankings, while "most complex" means it's in the top quartile. Asia, nes. means "Asia, not elsewhere specified"

Source: UN Comtrade Database, OEC Product Complexity Rankings, Citi Research

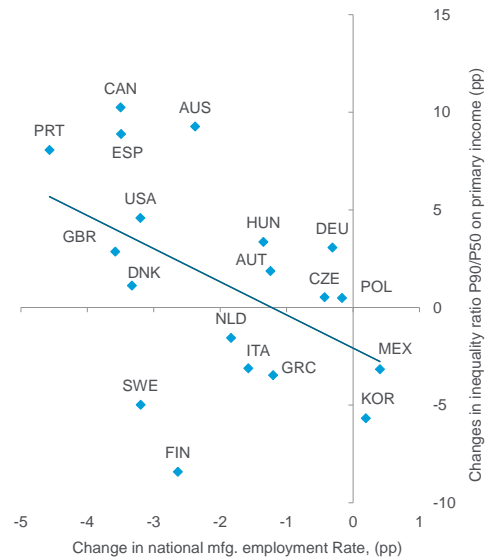
Falls in Manufacturing Jobs and Regional Inequality

Since the 1990s, industrial employment as a share of total employment has fallen in high-income countries while rising in low-income countries. Countries with larger declines in manufacturing jobs tend to have increased regional inequality, which may contribute to rising populism. However, looking across countries, the links between regional inequality, manufacturing employment, and populism are more nuanced than one might assume.

Countries that experienced the largest falls in manufacturing have seen increased inequality between internal regions.

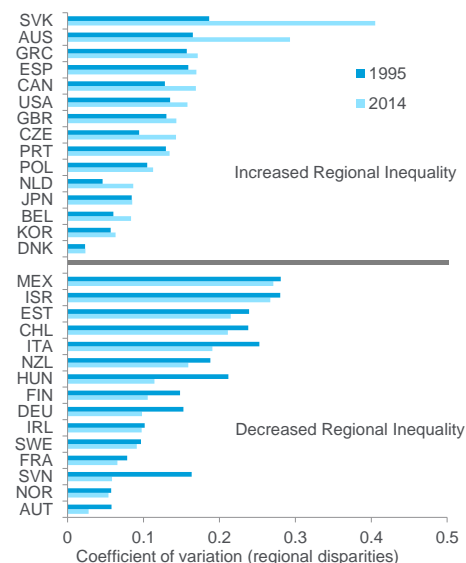
- The change between the ratio of the richest 90 percent and the middle 50 percent of primary income over time shows whether regional incomes have dispersed or not. A positive value indicates that regional incomes are moving apart.
- Comparing the change in regional inequality to changes in the national manufacturing employment rate reveals that the more the national employment rate of manufacturing fell, the more regional household incomes diverged.
 - But there is significant variation between countries, which indicates other factors besides changes in manufacturing jobs matter in the rise in inequality.
- The 90:50 ratio shown above is one way to represent regional inequality, in addition to the coefficient of variation we discussed previously (Figure 46 repeated here). The combination of the two suggests that the ties between falls in manufacturing unemployment, regional inequality, and rising populism are nuanced.
 - In the U.S. and U.K., the relationship seems consistent with logic: rising divergence between the 90th and 50th percentiles as well as the coefficient of variation, falls in manufacturing employment, and a surge of populism resulting in Brexit and Trump
 - Other countries are more nuanced:
 - Sweden: falling regional inequality and falling manufacturing employment, yet the rise of the Sweden Democrats
 - Hungary: rising 90:50 ratio, decrease in mfg. employment, and the rise of Premier Orban, yet falling coefficient of variation

Figure 55. Change in the Ratio between the Region in the 90th Percentile of Primary Income and the Region with the 50th Percentile vs. Change in National Manufacturing Employment Rate, 2000 vs. latest data



Note: 2000 until latest available data. Source: OECD (2017)

Figure 56. Coefficient of Variation of Regional Disposable Income (Ratio of SD and mean of a region's disposable income), 1995 vs. 2014



Source: OECD (2015), OECD Regional Statistics (database), Citi Research

However, Trade Can Also Alleviate Regional Inequality

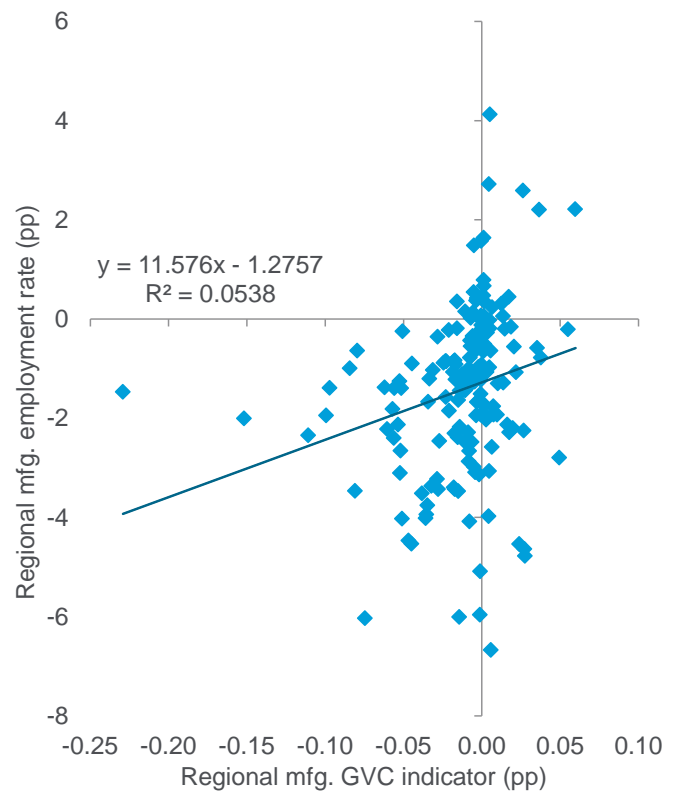
In Europe between 2000 and 2010, an increase in the global value chain (GVC) indicator correlated with an increase in regional manufacturing employment rates. Although most regions still saw a fall in manufacturing, those that were more integrated in GVCs experienced less significant falls in manufacturing employment.

Rather than increase regional inequality, trade could actually help alleviate it.

- Regional employment across Europe serves as a good case study.
- Between 2000 and 2010, an increase in the global value chain indicator correlated with an increase in regional manufacturing employment rates.
 - Although most regions still saw a fall in overall manufacturing, those that were more integrated in global value chains experienced less significant drops.
- Greater integration with global value chains allowed European regions to experience converging levels of manufacturing employment.

Source: Source: World Input-Output Database, regional economic accounts, regional supply and use tables, regional input-output tables and transportation data (Bart Los and Wen Chen, 2016); Thissen M., M. Lankhuizen and B. Los (2017), 'Construction of a Time Series of Fine-Grained Detailed Nuts2 Regional Input-Output Tables for the EU embedded in a Global System of Country Tables', mimeo, PBL Netherlands Environmental Assessment Agency, The Hague, (forthcoming); and OECD calculations.

Figure 57. Change in Regional Employment in Europe are Associated with Greater integration in GVCs (% Change), 2000-2010



Note: Regional income data for Canada, France, Norway, Sweden, and USA only available 2010-2015. Data from Japan available 2005-2015. All other countries have data that range from 2004-6 to 2015
Source: OECD Economic Outlook Database

Not Too Much Globalization, But Too Little

Shifts in patterns of specialization and growth means that new efforts to deepen globalization are necessary to achieve greater benefits. OECD nations make up a smaller portion of world goods exports in 2018 than they did in 1993. Given emerging markets are less open than advanced markets we should focus on opening these markets instead of closing advanced economy markets.

The focus of global demand also has shifted toward services. Deeper globalization of services is important to increase the gain from global integration. Not only are services increasing faster than manufacturing, but competitiveness of manufacturing is enhanced by globalization of services. However, despite growth, services trade remains an extremely small percentage of overall trade

Another geographic shift is that emerging markets have become far more interconnected in trade with other economies. Global trade does not follow a random pattern of country relationships: it is a system of hubs and spokes. Bigger gains come from linking up outward to a high quality foreign firm in a hub, rather than linking back to a domestic firm along a spoke.

Services add a significant portion of the value-added in manufacturing exports. Therefore, services openness increasingly is key for the competitiveness of manufacturing goods in trade. Enhancing GVC linkages and competitiveness by promoting trade facilitation and services openness supports gains from trade, including larger markets, lower prices, and more variety.

Trade facilitation improvements (e.g., reducing clearance times for imports and exports) provide significant benefits for importers. Trade facilitation policies increase the total trade of items used for intermediates, capital goods, government consumption, and private consumption.

The Services Trade Restrictive Index (STRI), as measure by the OECD, remains high for most major countries and sectors. Liberalizing services trade would benefit not only the fastest rising component of trade, but also increase the competitiveness of manufacturing industries.

Regressions show statistically significant results that increasing trade barriers could help manufacturing employment, but it would hurt services employment to a greater extent. Overall, there is a net job loss from trade protection, which is the flip side of the findings that trade liberalization yields overall gains. The key issue is to keep the gains from liberalization, but address the distributional consequences. Likewise, increasing trade barriers would have a statistically significant negative effect on GDP.

Deepen Integration of Emerging Markets

Shifts in patterns of specialization and growth means that new efforts to deepen globalization are necessary to achieve greater benefits. OECD nations make up a smaller portion of world goods exports in 2018 than they did in 1993. Given emerging markets are less open than advanced markets we should focus on opening these markets instead of closing advanced economy markets.

OECD nations make up a smaller portion of world goods exports in 2018 than they did in 1993.

- China, dynamic Asian countries, and the rest of the world contribute larger portions of global exports.
- However, the contribution of the rest of the world seems to have peaked in 2012.

The shift in global demand away from advanced economies and towards emerging markets exposes the fact that emerging markets are less open.

- The objective should be to open those markets, not close the advanced economy and manufacturing ones.
- Economies beyond ‘factory Asia’ need to integrate more to get globalization benefits.

Shipping data shows that world container trade has shifted away from traditional East-West routes, while intra-Asia trade has increased.

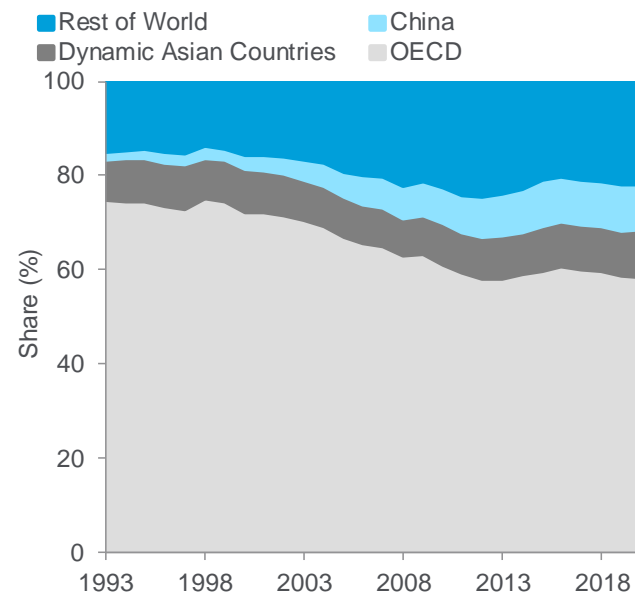
- East-West trade has decreased as a share of world trade volume. Intra-Asia trade has increased as a share of world trade volume.

Within East-West trade, non-mainlane trade (i.e., trade to countries other than China) makes up an increasingly large share.

- Other Asian countries have gained market share from the China-West mainlane*

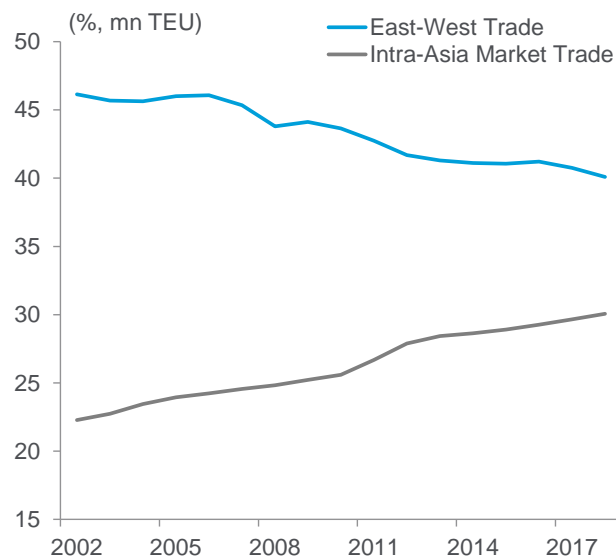
*Note: non-mainlane trade refers to trade that doesn't occur on the main transpacific route between North America and Asia. Non-mainlane trade includes trade between non-Chinese "intra-Asia" countries and the West

Figure 58. Share of World Goods & Services Exports (% of total) 1993-2020F



Note: Dynamic Asian Economies includes Malaysia, the Philippines, Singapore, Thailand, Vietnam, Chinese Taipei, and Hong Kong. Forecasts through 2020 by the OECD. Source: OECD Economic Outlook database, Citi Research

Figure 59. East-West & Intra-Asia Trade as Share of Total Container Volume (% of the Million TEU), 2001-2018



Note: TEU stands for Twenty-Foot Equivalent Unit, which is used to measure a ship's cargo capacity. Source: Clarkson's, Citi Research

Deepen Integration of Services

The focus of global demand also has shifted toward services. Deeper globalization of services is important to increase the gain from global integration. Not only are services increasing faster than manufacturing, but competitiveness of manufacturing is enhanced by globalization of services. However, despite growth, services trade remains an extremely small percentage of overall trade

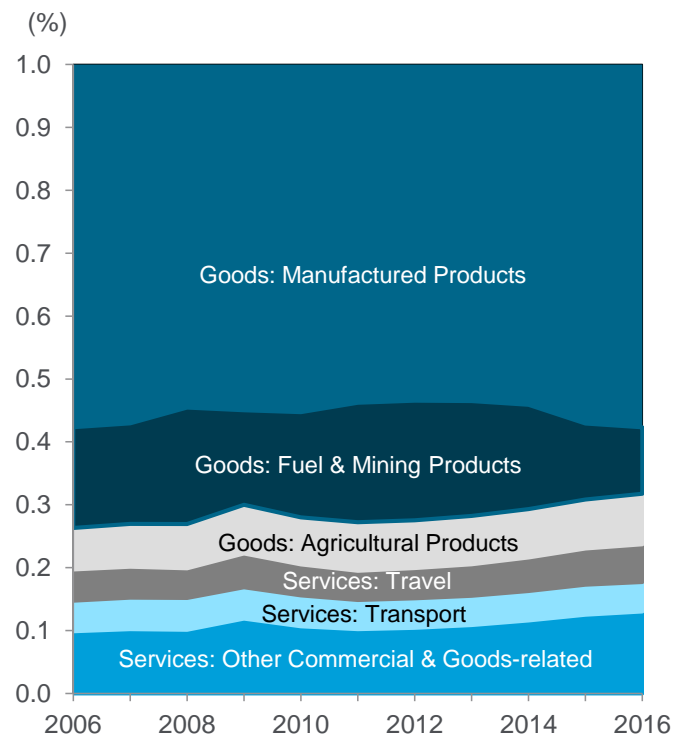
Commercial services have grown as a share of world trade, but still make up a small percentage of overall trade.

- Commercial services (excluding transportation, travel, and goods-related services) tend to be less open than manufacturing trade.*
- The share of regional trade agreements notified to the WTO that address services integration has also increased over the last two decades, but the overall number of agreements has fallen.*
- Therefore, the objective should be to integrate these markets.

The rise of global value chains is associated with rising trade in services.

- Cross-border trade as a share of global services output rose from 3% in 1970 to 10% in 2014.**
- The fastest growing segments have been the telecommunications and computer and information services industries (10% of total services exports in 2014 vs. 1% in 1990)

Figure 60. Share of World Trade by Type, 2006-2016



*OECD Services Trade Restrictiveness Index database

**WTO Regional Trade Agreements Information System IMF World Economic Outlook April 2018

Source: WTO Trade Statistical Review 2017, Citi Research

Global Trade is a Hub-and-Spoke Network

Another geographic shift is that emerging markets have become far more interconnected in trade with other economies. Global trade does not follow a random pattern of country relationships: it is a system of hubs and spokes. Bigger gains come from linking up outward to a high quality foreign firm in a hub, rather than linking back to a domestic firm along a spoke.

Global trade is not atomistic, with equal roles for all countries.

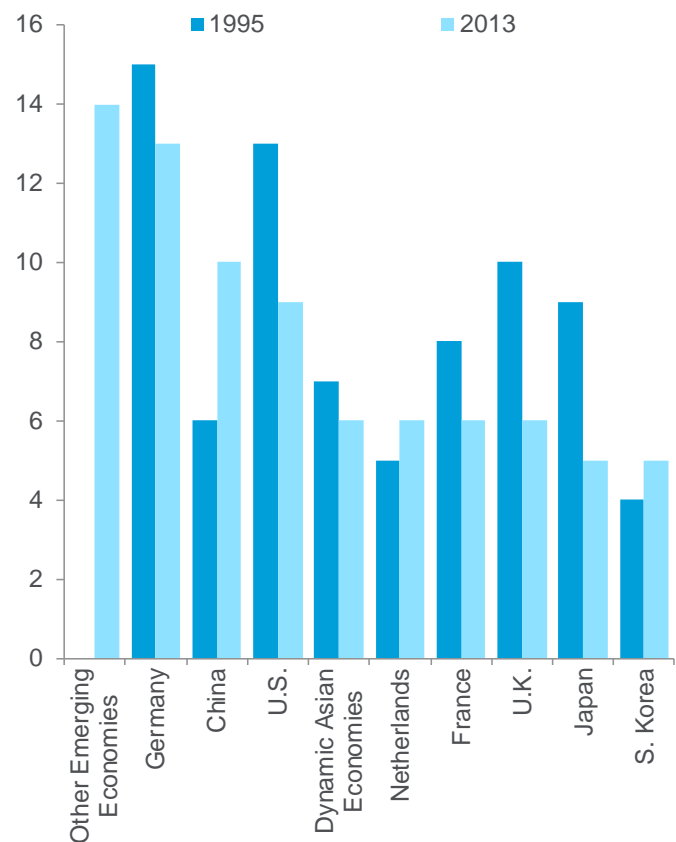
- GVC hubs and spokes both produce gains from global relationships.
- Bigger gains come from linking up outward to a high quality foreign firm at a hub.
- Inward linkages generate fewer gains, possibly because the gains from trade are eroded by inefficiencies in the domestic environment.*

The number of trade relationships that a country has is a metric for interconnectedness. As demand has shifted, so have GVCs.

- China and other emerging markets have become far more integrated since 1995.
- Developed country relationships (such as those of the U.S.) are increasingly less important.
- Global trade is less concentrated around the U.S. and German hubs, and more so around China and other emerging markets hubs.
- Since gains come from high-quality firms in hubs, ensuring that the hubs are open to a wide-range of partners and are services-rich enhances the benefits for countries in the network.

* Criscuolo, C. and J. Timmis (2018), "GVCS and centrality: Mapping key hubs, spokes and the periphery", *OECD Productivity Working Papers*, No. 12, OECD Publishing, Paris

Figure 61. Number of Trade Relationships that Account for at Least 0.2% of Global GDP, 1995 vs. 2013



Note: There are bilateral trade flows between all countries shown but those below approximately 0.2% of total world trade flows are not shown. Dynamic Asia Economies (DAE) is the group consisting of Chinese Taipei; Hong Kong China; Indonesia; Malaysia; the Philippines; Singapore and Thailand. Other emerging markets (OEM) are the group of the remaining 129 countries in the world that account for around 10% of world trade

Source: Gephi; IMF Direction of Trade Statistics database; OECD Economic Outlook database; OECD Calculations, Citi Research

Global Integration of Services Trade Also Supports Manufacturing

Services add a significant portion of the value-added in manufacturing exports. Therefore, services openness increasingly is key for the competitiveness of manufacturing goods in trade. Enhancing GVC linkages and competitiveness by promoting trade facilitation and services openness supports gains from trade, including larger markets, lower prices, and more variety.

Services add a significant portion of the value-added in manufacturing exports.

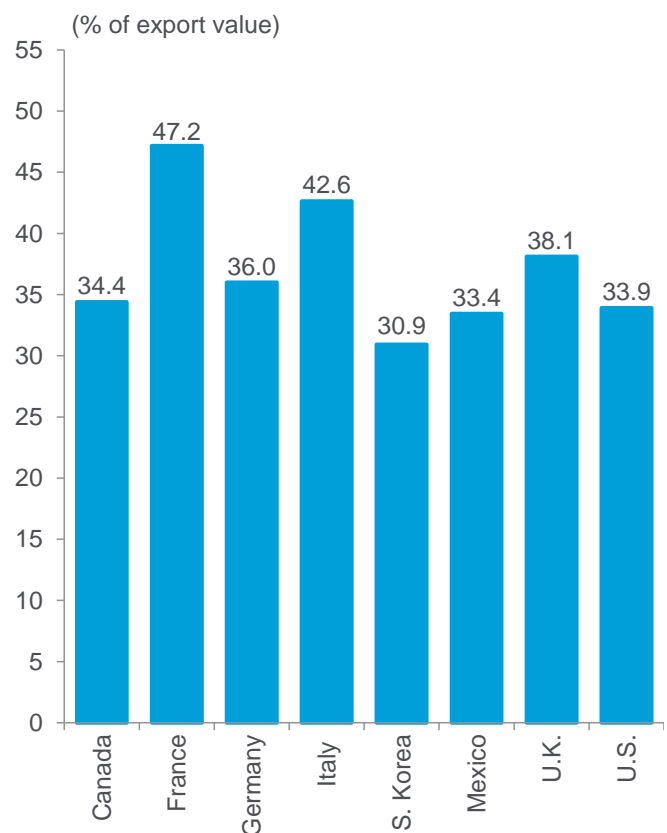
- Examples of services that add value to manufacturing include:
 - Information technology
 - Business information management
 - Accounting
- OECD Trade in Value Added (TiVa) data shows that services account for around 35% of the total export value of manufacturing in the U.S. For a wide variety of countries, the services share exceeds 30%.

By opening up services trade, policymakers can increase the competitiveness of manufacturing.

- These value-added services lower costs, improve productivity, simplify production, and streamline processes.*

* Nordås, H. and Y. Kim (2013), "The Role of Services for Competitiveness in Manufacturing", *OECD Trade Policy Papers*, No. 148, OECD Publishing, Paris

Figure 62. Services Value-Added in Manufacturing Exports (% of export value), 2014



Source: OECD Trade in Value Added (TiVa) December 2016

Trade Facilitation Increases Competitiveness

Trade facilitation improvements (e.g., reducing clearance times for imports and exports) provide significant benefits for importers. Trade facilitation policies increase the total trade of items used for intermediates, capital goods, government consumption, and private consumption.

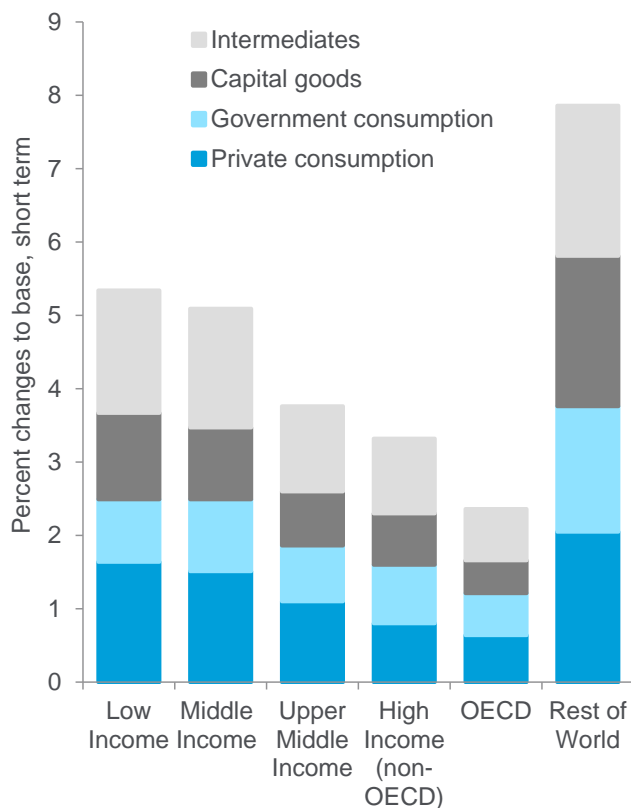
Trade facilitation improvements provide significant benefits for importers.

- Examples of trade facilitation include reduced clearance times for imports and exports
- Efficient border procedures help firms:
 - Decrease losses of perishables
 - Reduce costs of managing stocks
 - Improve their ability to quickly respond to changes in consumer preferences
 - Participate in time-sensitive global value chains

Trade facilitation by an importer increases total trade of all types of goods.

- Low and middle income countries particularly benefit.

Figure 63. Impact of Trade Facilitation on Total Trade by Income Importer Group and Use (% changes to base, short term)



Note: LICs: low income countries; MICs: middle income; UMICs: upper middle income; HICs: High income; ROW: Rest of World

Source: Flaig and Sorescu (2017), "Economy-Wide Impacts of Trade Facilitation", OECD Trade Policy paper, forthcoming.

Services Remain Restricted

The Services Trade Restrictive Index (STRI), as measure by the OECD, remains high for most major countries and sectors. Liberalizing services trade would benefit not only the fastest rising component of trade, but also increase the competitiveness of manufacturing industries.

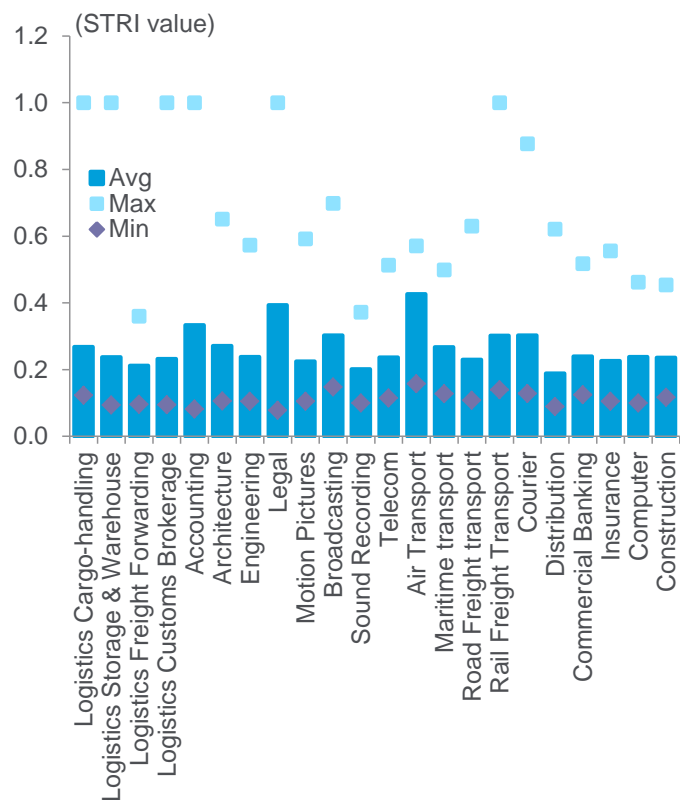
Services trade in many categories remains restricted across major countries.

- Air transport and legal services have the highest average Services Trade Restrictiveness Index values.
- In some countries, certain industries are completely restricted (an STRI of 1.0):
 - Russia: Logistics cargo-handling and logistics storage & warehouse
 - Mexico: Logistics customer brokerage
 - South Korea: Accounting
 - Poland: Legal
 - India: Rail freight transport

Liberalizing services trade would benefit manufacturing industries.

- Many of these services deal directly with manufacturing (such as logistics).

Figure 64. Services Trade Restrictiveness Index by Sector (Across 44 Major Countries), 2017



Note: STRI Values: Completely open (0); Virtually open but with minor restrictions (25); Major restrictions (50); Virtually closed with limited opportunities to enter and operate (75); Completely closed (100).

Source: OECD STRI database

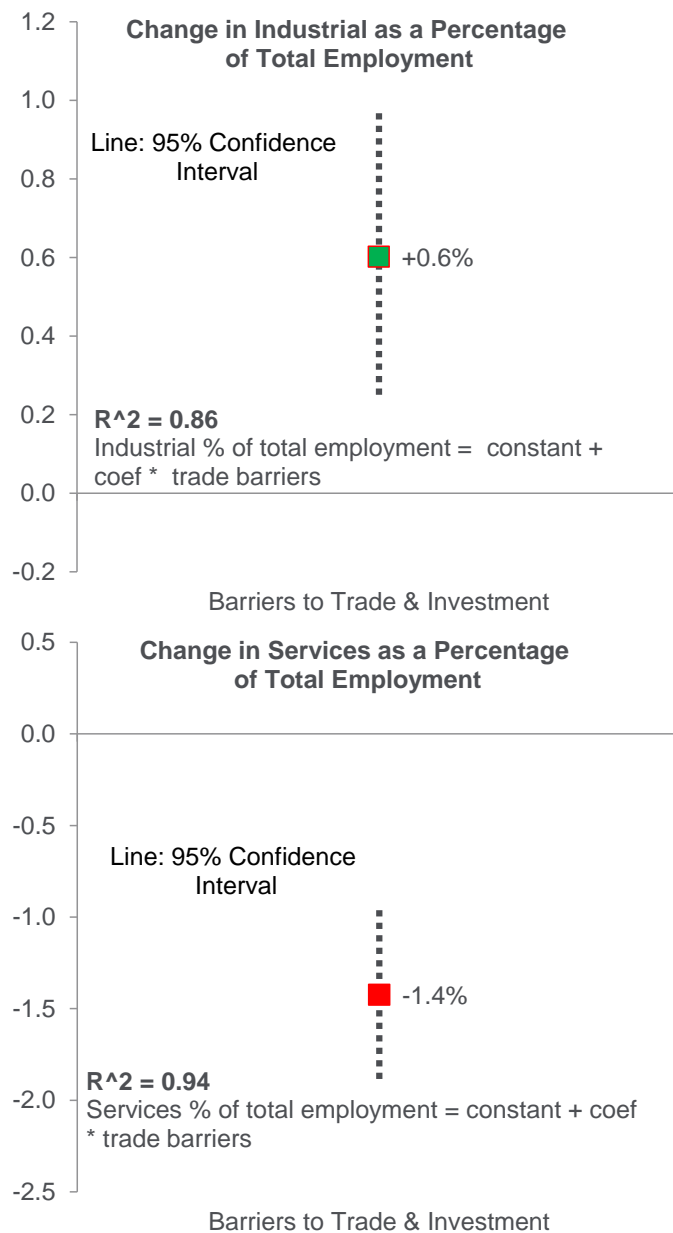
Trade Barriers Retain Some Jobs, Cost Others

Regressions show statistically significant results that increasing trade barriers could help manufacturing employment, but it would hurt services employment to a greater extent. Overall, there is a net job loss from trade protection, which is the flip side of the findings that trade liberalization yields overall gains. The key issue is to keep the gains from liberalization, but address the distributional consequences.

The effect of increasing trade barriers (an increase of the OECD Product Market Regulation Indicator by 0.3)* on employment would result in:

- Industrial employment as a share of total employment increasing by 0.6%.
- Services employment as a share of total employment decreasing by -1.4%.
- Putting the two together, trade barriers lead to a reallocation of employment, but with a cost of overall employment loss.

Figure 65. Effect of Barriers to Trade and Investment on Industrial and Services Employment, 1998-2013



* The average variation in Product Market Regulation Indicators across OECD countries in 2013 was 0.3

Note: "Industry" includes mining and quarrying; manufacturing; electricity, gas, steam and air conditioning supply; water supply; sewerage, waste management and remediation activities, and construction (ISIC Categories B-F)

Source: Atlanta Fed Wage Growth Tracker, Citi Research

Effect of Increasing Trade Barriers on GDP

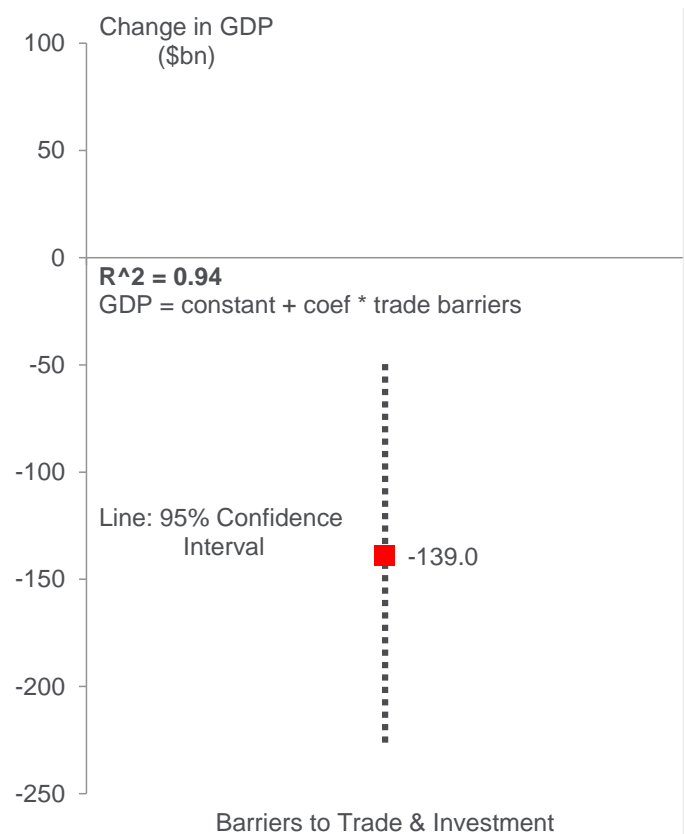
Likewise, increasing trade barriers would have a statistically significant negative effect on GDP.

What is the effect of increasing trade barriers (an increase of the OECD Product Market Regulation Indicator by 0.3) on GDP?

- GDP would decrease by about \$139 billion for an increase of the Trade Barrier Indicator of 0.3.*
- This result is consistent with the argument that trade liberalization benefits GDP.

* The average variation in Product Market Regulation Indicators across OECD countries in 2013 was 0.3

Figure 66. Effect of Barriers to Trade and Investment on GDP, 1998-2013



Source: SPIDER Database; OECD Product Market Regulation (PMR) Indicators, World Bank World Development Indicators; Citi Research

How to Ensure Gains from Globalization Are Widely Shared

We acknowledge that globalization creates winners and losers. But, a retreat from globalization not only creates winners and losers, but also a net loss overall. So the challenge is to revive trade integration and find strategies to better distribute those gains. There is a strong relationship between trade openness and productivity. As exports produce more domestic value added, productivity (GDP per hour worked) increases. Reviving trade integration supports productivity growth.

We return to the issue of productivity dispersion (the fact that top firms have increased productivity growth rates, but the rest haven't). Productivity dispersion is mirrored in wage dispersion. Leading firms in each sector have high productivity and pay high wages, while the vast majority of firms have seen almost no productivity growth and no wage growth for nearly two decades. Raising average productivity by improving productivity at the vast majority of firms would support higher wages too.

Globalization can expose or create vulnerabilities. Trade can undermine local firms and too much credit can make countries vulnerable to financial shocks. The use of OECD early warning indicators (70 indicators across 30 countries) can expose an issue so it can be addressed before the vulnerability explodes. .

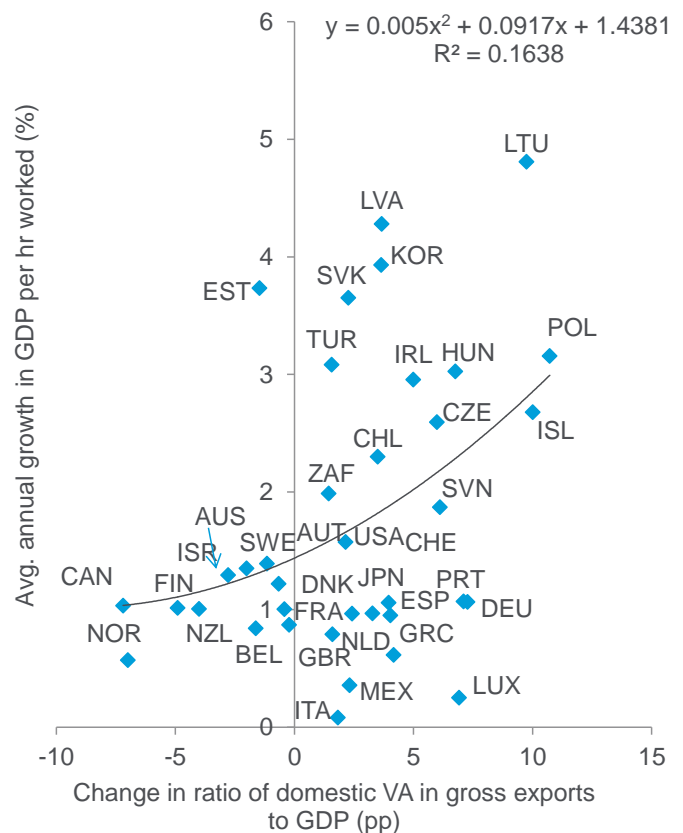
Reviving Trade Integration and GVCs Could Revive Productivity

We acknowledge that globalization creates winners and losers. But, a retreat from globalization not only creates winners and losers, but also a net loss overall. So the challenge is to revive trade integration and find strategies to better distribute those gains. There is a strong relationship between trade openness and productivity. As exports produce more domestic value added, productivity (GDP per hour worked) increases. Reviving trade integration supports productivity growth.

There is a strong relationship between trade openness and productivity.

- Across major countries from 2000 to 2014, countries that opened up trade (increased the domestic value added of gross exports as a share of imports) experienced productivity gains.
- International trade allows firms to specialize in goods that are produced most efficiently at home.
- Productivity gains come from specialization, including from economies of scale.
- Globalization through GVCs also enables the transfer of technology and managerial skills.
- Meeting the international market test enhances the quality of product, for both domestic and foreign buyers.

Figure 67. Change in Value Added in Exports to GDP Ratio and Growth in Labor Productivity, 2000-2014



Note: measuring value added instead of gross exports prevents double-counting of value added that's created in other domestic sectors that contribute to imports

Source: OECD Compendium of Productivity Indicators 2018, Citi Research

Back to the Dispersion Problem: Productivity and Wages

We return to the issue of productivity dispersion (the fact that top firms have increased productivity growth rates, but the rest haven't). Productivity dispersion is mirrored in wage dispersion. Leading firms in each sector have high productivity and pay high wages, while the vast majority of firms have seen almost no productivity growth and no wage growth for nearly two decades. Raising average productivity by improving productivity at the vast majority of firms would support higher wages too.

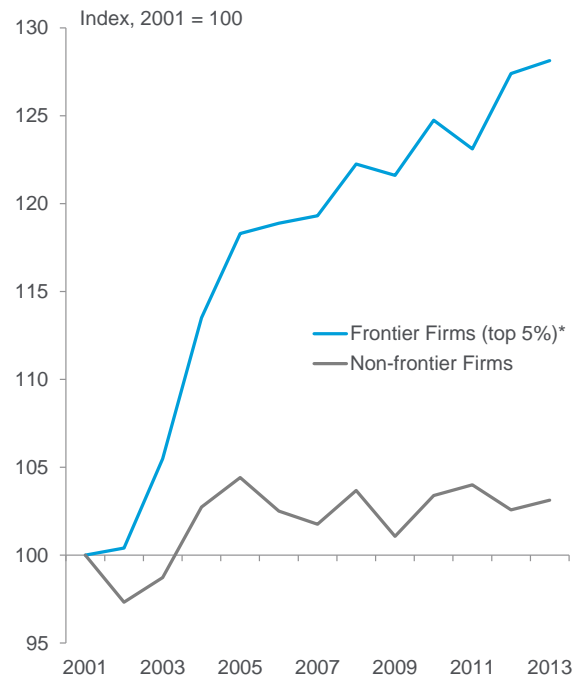
Increases in labor productivity are not broadly shared.

- As we showed in Figure 51, labor productivity increased dramatically for frontier firms (the 5% of firms with the highest labor productivity by year and sector) from 2001 to 2007, but not for the rest of the pack. However, even for top firms, productivity has stagnated since 2007.

Likewise, changes in real compensation per worker have similar patterns.

- Compensation of workers at non-frontier firms has stayed flat, while compensation of workers at frontier firms has greatly increased. These increases have occurred despite the stagnation in productivity of frontier firms since 2007. In other words, the workers at top firms are getting paid more despite not becoming more productive.
- These trends are related to the increased divergence between the incomes of the 90th percentile region of a country and the 50th percentile region, shown in Figure 55.
 - In the US, high-paying jobs are increasingly centralized in hubs like New York or San Francisco, which contain more frontier firms, thereby exacerbating regional inequality.
- Therefore, increasing trade liberalization isn't enough to solve underlying issues of inequality.

Figure 68. Real Compensation Per Worker (Index, 2001=100), 2001-2013



* Frontier firms are the 5% of firms with the highest labor productivity by year and sector. Industries included are manufacturing and business services, excluding the financial sector, for firms with at least 20 employees

Source: Andrews, D., Criscuolo C., and Gal P. (2016), 'The Best versus the Rest: The Global Productivity Slowdown, Divergence across Firms and the Role of Public Policy', OECD Productivity Working Papers, No. 05; Orbis data of Bureau van Dijk; and OECD calculations

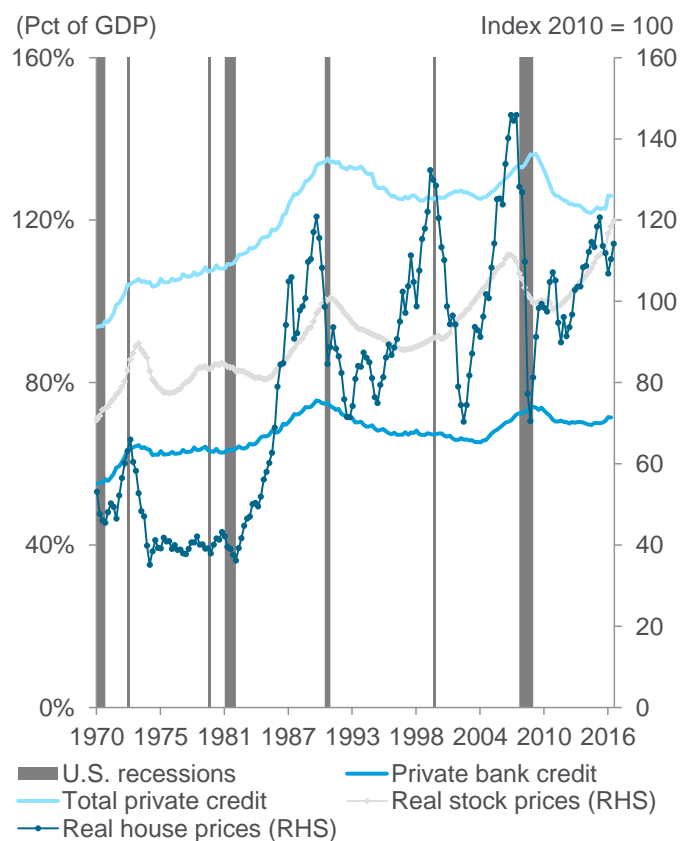
Early Warning Indicators of Vulnerability

Globalization can expose or create vulnerabilities. Trade can undermine local firms and too much credit can make countries vulnerable to financial shocks. The use of OECD early warning indicators (70 indicators across 30 countries) can expose an issue so it can be addressed before the vulnerability explodes.

The OECD's Vulnerability Indicators can be used to identify potential risks in the global economy.

- On the domestic side, these indicators measure vulnerabilities in the financial sector, non-financial sector, public sector, and asset markets.
- On the international side, these indicators measure international spillovers, contagion, and global risks.
- Examples include leverage ratios, liquidity ratio, housing loans, total private credit, corporate credit, government balance, current account balance, external debt, FDI liabilities, quantitative foreign currency exposure, export performance, trade openness, financial openness, etc.

Figure 69. Change in Value Added in Exports to GDP Ratio and Growth in Labor Productivity, 2000-2016



Note: Weights defined by nominal GDP at Purchasing Power Parity (PPP).
 Source: OECD Vulnerability Indicators

Has Globalization Peaked? For Better or Worse? The Way Forward

Figure 70. Summary – Looking Forward

Has Globalization Peaked?

- By many metrics, global integration has peaked.
- So too has the stock of international reserves, the 'insurance' against financial crises.
- Trade negotiations and agreements have stalled...
- ...leaving services and EM trade, the growing shares of trade, less integrated.

For Better or Worse?

- Globalization and technological change generate gains...
- ...but also adjustment costs
- Productivity growth has stalled
- Accompanied by issues of competition, dispersion, inequalities

The Way Forward

- Revive momentum for global integration, especially of services, digital, finance.
- Improve strategies to avoid crises and reduce unproductive 'insurance'.
- Deploy domestic policies to mitigate adjustment costs and disperse gains.

Global integration with its gains is needed to meet commitments to current and future generations

Source: Citi Research

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Key Insights regarding the future of Globalization



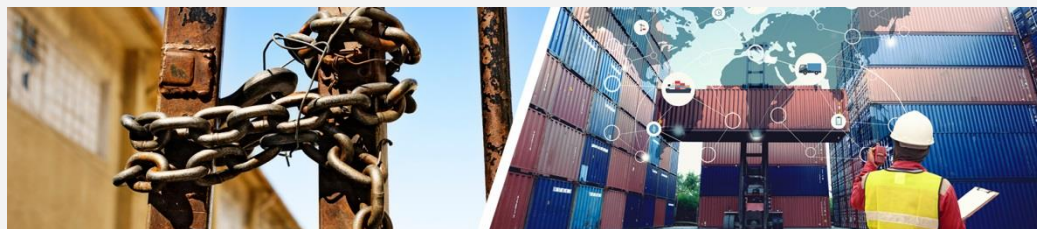
GLOBAL REACH

World integration rose dramatically in the second half of the 20th century with world trade intensity almost doubling from the 1970s to a peak of 60% of world GDP in the late 2000s. / **Stalled progress on trade liberalization, intensification of protectionist policies, a peaking of financial integration and other metrics signify globalization peaked around 2008.**



LABOR MARKET

Since the 1990s, industrial employment as a share of total employment has fallen in high-income countries while rising in low-income countries while inequality has risen. / **However, those regions with more integrated global value chains experienced less significant falls in manufacturing employment.**



SHIFTING WEALTH

In older generations, income growth starting slowing in peak earnings years (when members were in their 50s). / **For younger generations, income is stalling at younger ages with the 1970s cohort having their income growth fall in their formative earning years (when members were in their 30s).**



