Pandemics Fragilities: The Double-Coincidence of a Halt in Hyper-specialized GVC and the Big-Dollar-Hunger

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Abstract

The risk of pandemics or natural disasters made clear the cascading damages of an un-diversified global value chain (trade fragilities) even for basic retail products. The halt in dollar-denominated payments to intermediate good firms from countries pivotal in the Global Value Chain (GVC) induced a big dollar hunger and the exorbitant duty of the Fed to activate emergency swap lines (monetary fragilities). As days into the pandemic pass, new economic fragilities emerge that call for more profound reflections of the current economic model.

In 2012, a survey from the World Economic Forum and Accenture (9), devoted to assess the risk of a disruption in the global supply chain, had included a "Pandemic" among the 18 categories of risk considered plausible. It assigned a probability of 11 percent to such a pandemic (against for instance a 19 percent assigned to global energy shortage or a 17 percent assigned to shortage of labour), making it not really that rare an event.

And here we are with a pandemic. The prevailing economic paradigm behind global value chains, generally a production network, suggests that firms should outsource to the countries with the lowest overall costs. Firms could potentially source particular intermediate inputs from only one country. Outsourcing, the fragmentation of production and lengthening of value chains has allowed for a finer division of labor and greater gains from specialization——hyper-specialization——across countries (Antràs 2020). Just-in-time management practices also dictate holding minimal inventories as to improve profits. Of course these outcomes are efficient assuming sourcing from a particular country involves zero risk. The above report however, as well as other sources, provides a long list of risks ranging from natural disasters, to geopolitical, technological, contractual or demand factors.

Certainly, a major consequence of the halt in the global value chain is the ensuing collapse in worldwide output.[1] But a second interesting aspect is the increased appetite for the dollar. Since the outbreak of the pandemic outside of China (second week of March 2020) the dollar has appreciated significantly. Such hunger for the dollar is unlikely to be driven by the perception that the United States is less vulnerable at

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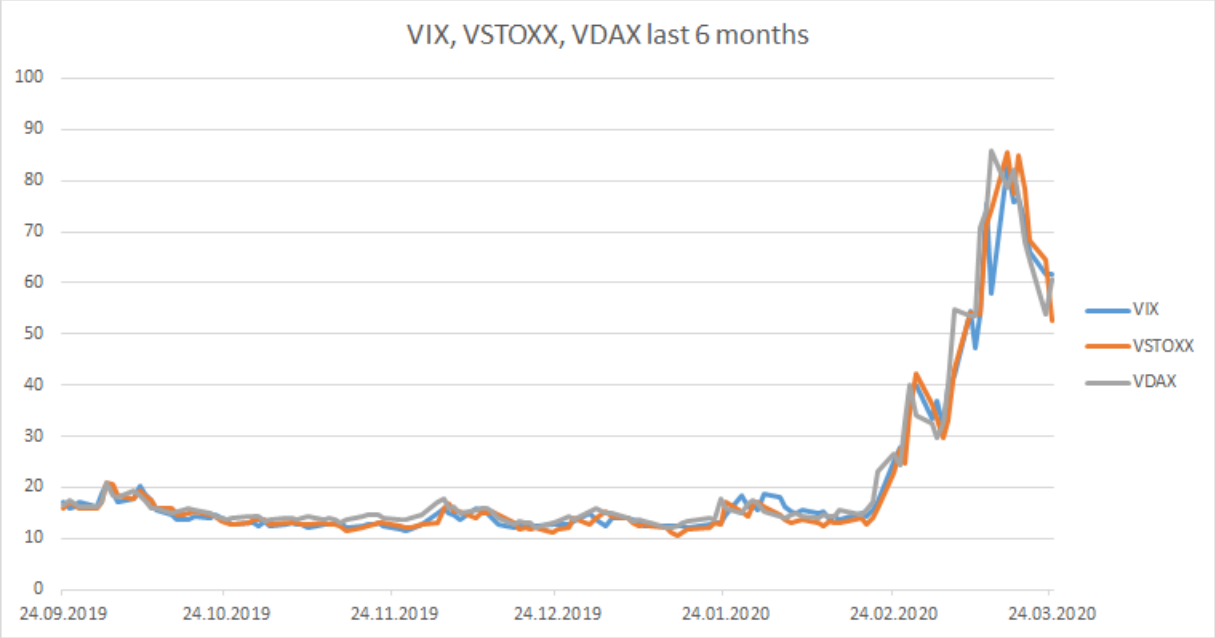
[1]See Gourinchas (2020) for a discussion of the potential economic costs and the role of policy.

the moment or a safer place than other regions. Risk indices in the United States and Europe, namely the VIX, VSTOXX for Europe and the VDAX for Germany seem at par (see Figure 1 below).

Figure 1. Risk indices US, Europe and Germany



As for the US Variance Risk Premium (VRP), an index for country uncertainty, its return started a massive and continuous decline starting on March 3.[2] Hence, if anything uncertainty surrounding the country is growing. And it does not seem lower than in other countries with larger safety nets, wider health coverage and larger fiscal capacity. Hence, the question remains on who is demanding dollars.

On March 19, the Federal Reserve announced the establishment of temporary U.S. dollar swap lines with an expanded list of central banks, including a handful of emerging market economies (EMEs), namely Reserve Bank of Australia, Banco Central do Brasil, Danmarks Nationalbank (Denmark), Bank of Korea, Banco de México, Norges Bank (Norway), Reserve Bank of New Zealand, Monetary Authority of Singapore, and Sveriges Riksbank (Sweden).[3]

Central Banks typically need to activate those swap lines when local banks face a scarcity of dollars. During sustained interruptions of the global supply chain, like after the outbreak of the COVID19 in China, many firms servicing the network GVC stop receiving payments in dollars (or perceive payments will be interrupted). They may struggle to meet obligations in (dollar) debt.[4] As a result most of them turn to banks to obtain loans. The banks then turn to their Central Banks to obtain dollar funding. At the end of

[2]See https://www.etf.com/VRPoverview.

[3]See https://www.federalreserve.gov/newsevents/pressreleases/monetary20200315c.htm and https://www.federalreserve.gov/newsevents/pressreleases/monetary20200319b.htm. On March 15 the Fed has already expanded its SWAP lines with the Bank of Canada, the Bank of England, the Bank of Japan and the European Central Bank.

[4]Alfaro, Asis, Chari and Panizza (2019) document the increase in leverage of firms in EMEs following the Global Financial Crisis and concerns regarding their financial fragility and potential to transmit corporate distress to other firms in the economy through network effects and other spillovers.

the chain Central Banks attempt to activate a swap line with the Fed.

Coincidentally, all of the the countries newly admitted in the swap line are pivotal in the global supply chain, either for Advanced Manufacturing and Services (South Korea, Brazil, Mexico) or for Innovative Manufacturing Activities.[5] Australia and Norway mainly contribute commodities, rather than intermediate goods. Many emerging market economies such as South Korea and Mexico are next to China in terms of importance in the global supply chain, also major corporations.[6] After the announcement of the new Fed swap facility on March 19 the Bank of Japan's usage was particularly large, the country being a key node in the global supply chain after China. South Korea has eased foreign exchange liquidity rules and drawn from the $60 billion U.S. currency swap line to help Korean firms, deeply embedded in GVC and may highly leveraged, with dollar funding. Countries experiencing big losses in commodity markets (oil) like Norway have also activated the swap facility.

Hence, more than just an increased international appetite for dollars linked to relatively low uncertainty of US policy and economic environment, dollar scarcity is also linked to disruptions of the GVC and production activity worldwide and high leverage. Dollars are no longer provided by US corporations that pay for their intermediate inputs, but are provided by global banks to firms which struggle to meet debt obligations. This is an interesting aspect that links again the monetary and the trade side of the economy.

How large is the GVC and can it account for the current dollar hunger? Based on Gopinath (2015) about 40 percent of world trade are invoiced in U.S. dollars. This implies about $8 trillion in dollar-denominated cross-border revenues from trade a year. In recent weeks, the Federal Reserve has provided about $360 billion through its SWAP facilities, so a shortfall of only 5 percent of global trade-related dollar payments would account for this extra demand. And the swap lines are only one source of dollar supply to foreign firms. Global banks, which have access to Fed liquidity facilities, can also supply dollars to foreign firms.

Given the current setup of the GVC, a large crisis requires Fed assistance through swap lines, another form of exorbitant duty. Similarly to the concentration of the dollar for invoicing, Alfaro, Faia, Judson and Schmit-Eisenlohr (2020) document a concentration of US dollar denominated financial flows in tax havens and financial centers. Even in that case the authors show that tax avoidance strategies and regulatory arbitrage tend to increase the "concentration" of risk in certain areas.

Thus, this experience calls for reflection on the economic models and business practices used so far. The focus had been entirely on efficiency. Risk was just absent from the picture.[7] But with the increase in rare event risks, globalization requires diversification across many countries. This would also avoid a concentration of the dollar use as invoice currency across in economies with unstable currencies and poor institutions.[8] Policies that aim at mitigating these shocks need to consider that disruptions in the "real" and "financial" markets are correlated. They are both related to "concentration" – GVCs and use of Dollar.

[5] See data from see WEF (2012).

[6] Multinational firms have been key players in cross-border production, global value chains, intra-firm trade and capital flows (Alfaro and Charlton, 2009).

[7] Antràs (2020) points out at the risks of hyper-specialization in one country with weak institutions and contract enforcement

[8] See Faia, Ottaviano and Laffitte (2020) for the stabilizing role of global banking due to diversification or when entry occurs in countries with more competitive markets.

They may have been motivated both for network effects, low costs, and efficiency but exacerbate fragilities.

References

[1] Alfaro, L., G. Asis, A. Chari, and U. Panizza (2019) "Corporate Debt, Firm Size and Financial Fragility in Emerging Markets." *Journal of International Economics* 118, 1–19.

[2] Alfaro, L., and A. Charlton (2009) "Intra-Industry Foreign Direct Investment." *American Economic Review* 99, 2096–2119.

[3] Alfaro, L., Faia, E., Judson, R. and T. Schmit-Eisenlohr (2020) "Elusive Safety:The New Geography of Capital Flows and Risk." Working Paper

[4] Antras, P. (2020) "Conceptual Aspects of Global Value Chains. " *Harvard University.*

[5] Faia, E., G. Ottaviano and S. Laffitte (2020) "Foreign Expansion, Competition and Bank Risk. " *Journal of International Economics* 118, 179-199.

[6] Gopinath, G. (2015) "The International Price System." *National Bureau of Economic Research* WP 21646.

[7] Gourinchas, P.O. (2020) "Flattening the pandemic and recession curves."in Baldwin R. and B. Weder di Mauro editors *Mitigating the COVID Economic Crisis: Act Fast and Do Whatever It Takes.* March 2020

[8] Manuj, I. and J.T. Mentzer, (2008). "Global Supply Chain Risk Management Strategies." *International Journal of Physical Distribution and Logistics Management*, 38(3), 192-223.

[9] World Economic Forum (2012). "Global Risks." *Insight report.*

[10] World Development Report (2020). "Trading for Development in the Age of Global Value Chain." *WorldBank group report.*