



SUPPLY CHAIN FINANCE

Uncertainty In Global Supply Chains Is Going to Stay

Citi GPS: Global Perspectives & Solutions

January 2023



Citi is one of the world's largest financial institutions, operating in all major established and emerging markets. Across these world markets, our employees conduct an ongoing multi-disciplinary conversation - accessing information, analyzing data, developing insights, and formulating advice. As our premier thought leadership product, Citi GPS is designed to help our readers navigate the global economy's most demanding challenges and to anticipate future themes and trends in a fast-changing and interconnected world. Citi GPS accesses the best elements of our global conversation and harvests the thought leadership of a wide range of senior professionals across our firm. This is not a research report and does not constitute advice on investments or a solicitations to buy or sell any financial instruments.

For more information on Citi GPS, please visit our website at www.citi.com/citigps.



Nathan Sheets

Global Chief Economist
Citi Research

+1-212-816-2991 | nathan.sheets@citi.com



Robert Sockin

Global Economist
Citi Research

+1-212-816-1658 | robert.sockin@citi.com



Aaron Liu

Global Economics Team
Citi Research

+1-212-723-4418 | aaron.s.liu@citi.com



Chris Cox

Global Head of Trade and Working Capital
Solutions
Citi Treasury and Trade Solutions

+44-20-7986-8611 | chris.cox@citi.com



John Finnigan

Head of Development Organizations
Citi Public Sector Group

+1-212-816-6166 | john.finnigan@citi.com



Admir Imami

Investment Director, Head of Trade & Supply
Chain Finance
British International Investment plc



Nathalie Louat

Director, Trade and Supply Chain Finance
International Finance Corporation



Paolo Monaco

Director, Financial Products - SME Finance &
Development
European Bank for Reconstruction and
Development (EBRD)

SUPPLY CHAIN FINANCE

Uncertainty in Global Supply Chains is Going to Stay



Jane Fraser
CEO, Citi

Trade flows are a fundamental driver of global economic growth and commerce, mitigating pressures and inflationary challenges, with social and environmental benefits intrinsically linked to that growth. Trade accounts for 52% of global GDP, according to the World Bank.

A year ago, Citi published a comprehensive report examining [The Complicated Road Back to “Normal”](#) for global supply chains. I think we can agree that the past year — or even the past several years — have indeed been complicated. Nevertheless here we are, somewhere closer to normal, as Citi’s most recent Global Supply Chain Pressure Index shows overall levels have fallen back to pre-pandemic norms but supply chain stresses remain with inflationary pressure and rising interest rates across many countries.

However, this latest report, published by Citi experts leading our thinking on supply chains and backed by survey responses from thousands of large multinational corporations and their suppliers globally, indicates that disruption remains top of mind.

The pandemic and then the war in Ukraine demonstrated the fragility of supply chains. Many companies and customers experienced the pain of those disruptions and are now looking for resiliency wherever they can get it. While reshoring and nearshoring may seem like the next steps, buyers and suppliers alike indicate that the higher priority is resiliency or redundancy deeper into the supply chain.

Enterprises are now focusing on inventory management strategy, diverse and longer-term partnerships with producers, and a deeper investment in digital tools. The surveys also show they are focused on bringing the same resilience to their financial supply chains that they have brought to their physical supply chains to counter disruption.

The concern for the health of supply chain finance is amplified by inflation, which is hovering around 40-year highs in many countries, and also rising interest rates. These new challenges hit the smallest suppliers hardest, but the good news is as demand for resiliency grows, so too does the opportunity for smaller players not traditionally as engaged in global trade.

The report details how supply chain finance (SCF) programs like the one Citi offers can help to mitigate that financing challenge, particularly for small and medium-sized enterprises (SMEs). It also highlights the role multilaterals are playing in providing critical risk mitigation and access to liquidity that enable banks to support SME suppliers further down the supply chain, including last-mile suppliers in developing countries.

The challenges for trade continue to evolve and there is much to do to improve resilience across supply chains globally, physically, and financially. The many disparate laws, local regulations, and standards can make international trade fragmented at times, and lead to inefficiencies across supply chains. It is essential that we continue to collaborate on global solutions, including standardization, technology, and regulation. Citi is proud to play a pivotal role in that ecosystem and to present the insights we gain from doing it.

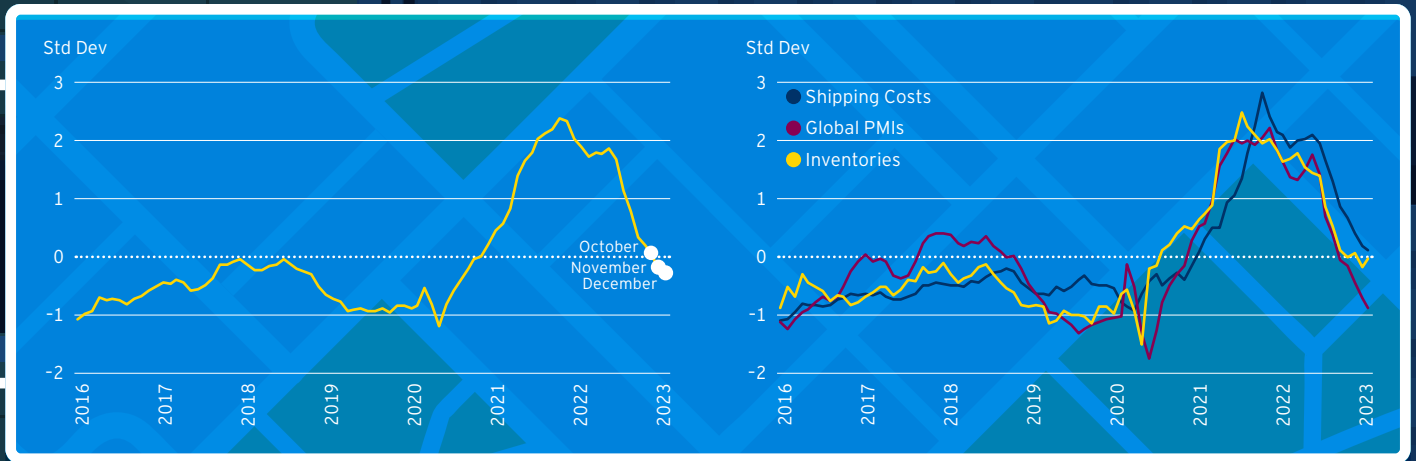
EVOLVING CHALLENGES

PRESSURES ON SUPPLY CHAINS HAVE EASED, BUT AWARENESS OF VULNERABILITIES HAS GROWN

After peaking in September 2021, Citi's Global Supply Chain Pressure Index eased somewhat further in December 2022. Overall pressures are now near levels seen during the global manufacturing expansion of late 2017 and early 2018. While conditions are normalizing rapidly, our sense is that firms will still take the lessons from this cycle seriously and look to adjust their production strategies to prevent prolonged disruptions in the future.

Citi Global Supply Chain Pressure Index (Left) and Sub-Indices (Right)

Source: Bloomberg, Haver Analytics, Citi GPS
Note: PMI = Purchasing Managers' Index



THE ROLE OF SUPPLY CHAIN FINANCE

Physical supply chain disruption has given way to a new challenge: high inflation and rising interest rates. Corporates responded to physical supply chain disruptions quickly but must now turn their attention to the health of the financial supply chain that powers physical supply chains.

Benefits of Supply Chain Finance:

Uses the **higher rating of buying companies** to enable suppliers to gain access to **attractively-priced finance**



Strengthens relationships between buyers and suppliers – an inherently **interconnected ecosystem**



Enables buyers to **access scarce supplies** and **lower costs**

Extends finance further into the supply chain to **reach the smaller suppliers** that need it most

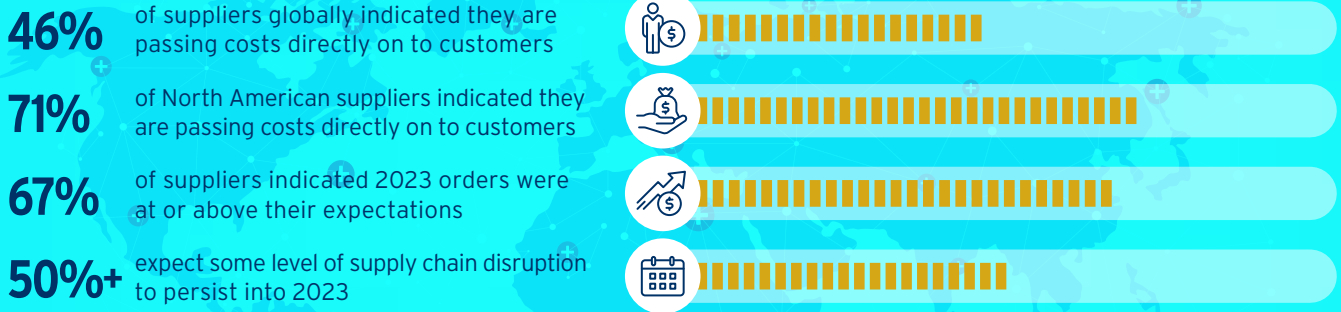


Improves efficiency for companies on both sides of the equation

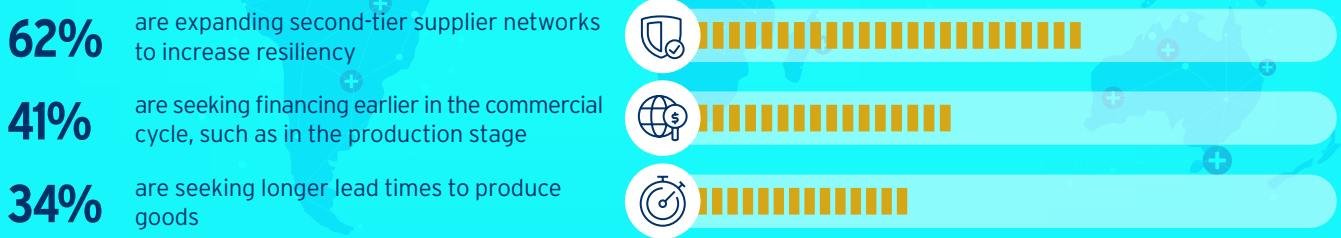


THE STATE OF SUPPLY CHAINS: WHAT SUPPLIERS ARE SAYING

Citi Research conducted a global survey of corporate suppliers participating in Citi-managed supply chain finance programs. Respondents most commonly identified rising costs as their greatest challenge.

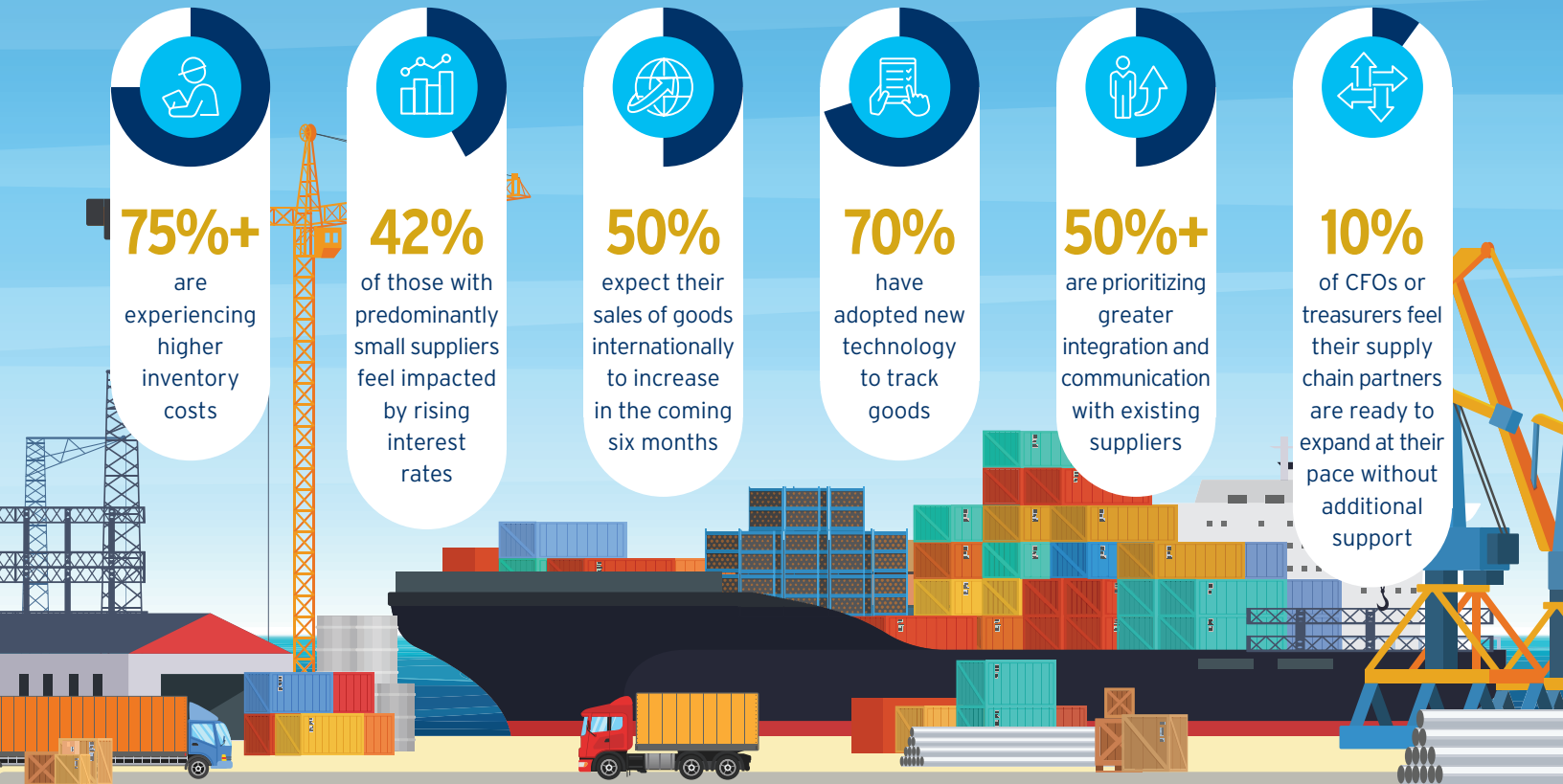


Suppliers are pursuing a number of strategies to counter supply chain disruptions:



THE STATE OF SUPPLY CHAINS: WHAT LARGE CORPORATES ARE SAYING

Citi partnered with East & Partners to conduct primary, voice-of-the-corporate research on the supply chain challenges, resiliency, and futures of top 100 annual revenue-ranked corporates in each country market.



Contents

| | |
|--|-----------|
| The Macroeconomic Picture | 7 |
| Global Supply Chains — Signs of Further Healing | 8 |
| A Closer Look at the Components of the Index | 9 |
| Implications for Inflation..... | 11 |
| Looking Ahead: Lessons for the Long Run | 12 |
| Concluding Thoughts..... | 13 |
| The Role of Supply Chain Finance | 15 |
| The Role of Supply Chain Finance | 16 |
| What is Happening to Global Flows? | 16 |
| Rising Interest Rates and Financing Costs Threaten Supply Chains .. | 19 |
| Boosting Resilience is Key | 20 |
| Ensuring the Financial Health of the Supply Chain..... | 20 |
| The Role of Supply Chain Finance..... | 20 |
| Innovation and Partnerships Matter | 21 |
| Looking Beyond Disruption..... | 22 |
| The State of Supply Chains | 23 |
| Supplier & Large Corporate Surveys | 24 |
| What Suppliers Are Saying..... | 28 |
| What Large Corporates are Saying..... | 32 |
| Conclusion | 36 |
| The Role of International Finance Institutions in Supply Chain Finance..... | 37 |
| The Role of IFIs in Supply Chain Finance | 38 |
| Critical Risk Mitigation | 38 |
| Case Study: British International Investment | 40 |
| Countercyclical Strategy Swings Into Action | 40 |
| A Sustainable Development Agenda..... | 40 |
| Case Study: European Bank for Reconstruction and Development | 42 |
| Achieving Net Zero in Supply Chains: A Major Challenge | 42 |
| How Can International Financial Institutions (IFIs) Help? | 45 |
| Case Study: International Finance Corporation | 49 |
| How IFC Makes Supply Chain Finance Work for Developing Markets | 49 |
| A Growing Need | 49 |
| Aligning SCF with IFC's Evolving Development Agenda | 50 |

The Macroeconomic Picture

Global Supply Chains — Signs of Further Healing

Nathan Sheets

Global Chief Economist, Citi Research

Robert Sockin

Global Economist, Citi Research

Aaron Liu

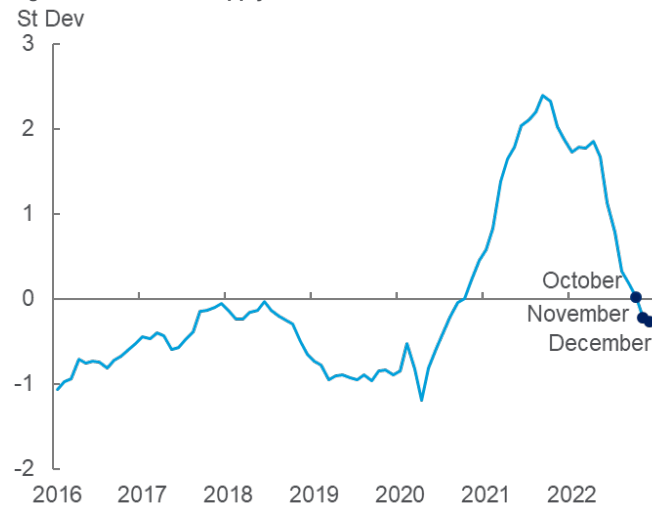
Global Economics Associate, Citi Research

Our Citi Global Supply Chain Pressure Index eased somewhat further in December 2022 (see Figure 1). The index has improved for eight consecutive months. While overall pressures are still somewhat above readings immediately before the pandemic, they are now hovering near levels last seen in the third quarter of 2020 and are also similar to levels seen during the global manufacturing expansion of late 2017 and early 2018.

We view the improvement in our index as largely reflecting easing in the global consumers' demand for goods. There are two main drivers of the slowdown in global goods spending. First, consumers have been rotating back to services spending as the pandemic recedes and households feel more comfortable with health conditions. Second, high inflation over the last few years has led to genuine demand destruction as price pressures have eaten into real incomes.

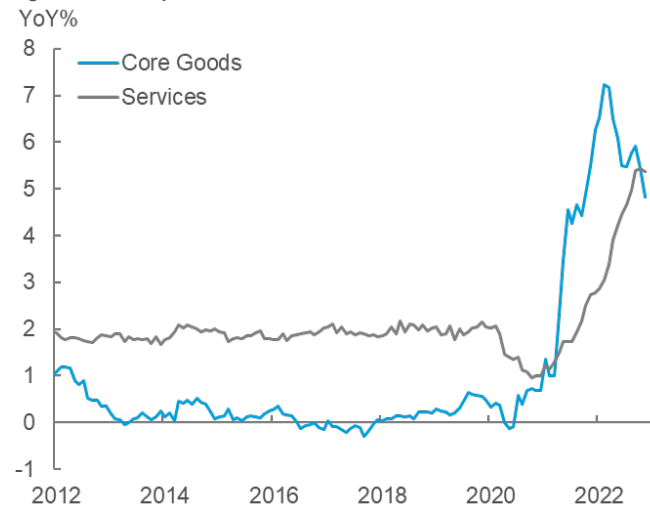
The good news is that heightened supply chain pressures have been a central driver of price pressures in global goods industries, and the unwinding of these forces should lead to a continued cooling in global goods inflation. More worryingly, since demand destruction is an important driver of loosening supply chain pressures, these developments are also a sign of mounting recessionary risks across countries and globally.

Figure 1. Citi Global Supply Chain Pressure Index



Source: Bloomberg, Citi GPS

Figure 2. Developed Market Inflation: Core Goods vs. Services



Source: National Statistical Sources, Haver Analytics, Citi GPS

While a rapid fall in goods inflation would be a welcome development, it is a necessary but not sufficient condition for central banks to turn less hawkish. The rotation of consumers out of goods and into services is putting upward pressure on services hiring and wages and, in turn, services prices (see Figure 2). These dynamics look painfully persistent. Unless services inflation breaks far sooner than expected, many central banks are likely to keep tightening policy.

In the longer term, this cycle has highlighted many vulnerabilities in the current configuration of global supply chains. While pressures are normalizing, our sense is that firms will still take the lessons from this episode seriously and look to adjust their production strategies to prevent prolonged disruptions in the future.

Several important trends are likely to emerge, including a reconfiguration of supply chains, an emphasis on longer-term partnerships with producers, an adjustment in how inventories are managed, and a further embrace of digitization.

The extent to which this episode will lead to shifts in the geographical distribution of global production remains unclear. The COVID-19 cycle could kick off a process of “re-shoring” whereby firms move production closer to home. For the U.S., this would mean moving production out of China and Asia more generally and into Latin America, particularly Mexico. Re-shoring would lower transportation costs, give firms more visibility into production, and limit a range of risks that come with dispersed supply chains.

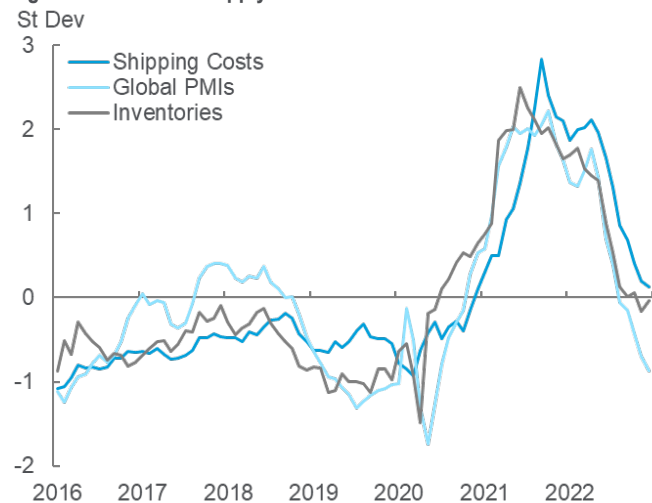
Still, production moved to Asia for compelling business reasons, including lower costs, and many of these factors are likely to remain true in coming years. All told, we expect some re-shoring to take place but do not envision a mass exodus out of Asia. More likely, firms will continue with globally diversified production strategies, but they will seek increased geographical diversity among their suppliers and will prepare for worst-case scenarios by having more inventory on hand and developing contingency plans in the case of interrupted production.

A Closer Look at the Components of the Index

The **Purchasing Managers' Index (PMI)** is useful in identifying the direction of economic trends in the manufacturing and service sectors.

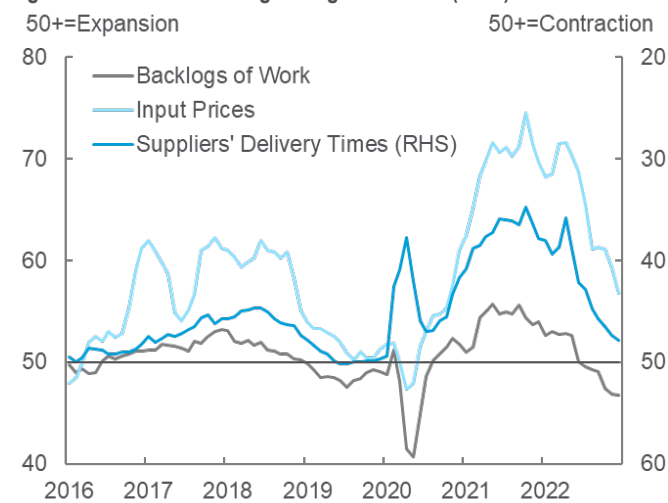
As highlighted in Figure 3, all three of the key components of our index — shipping costs, global purchasing managers' indices (PMIs), and inventories — have improved notably since May. Of the three, the declines in PMI and inventory indicators have been particularly pronounced.¹

Figure 3. Citi Global Supply Chain Pressure Sub-Indices



Source: Bloomberg, Haver Analytics, Citi GPS

Figure 4. Global Purchasing Managers' Indices (PMIs)



Source: S&P Global, Haver Analytics, Citi GPS

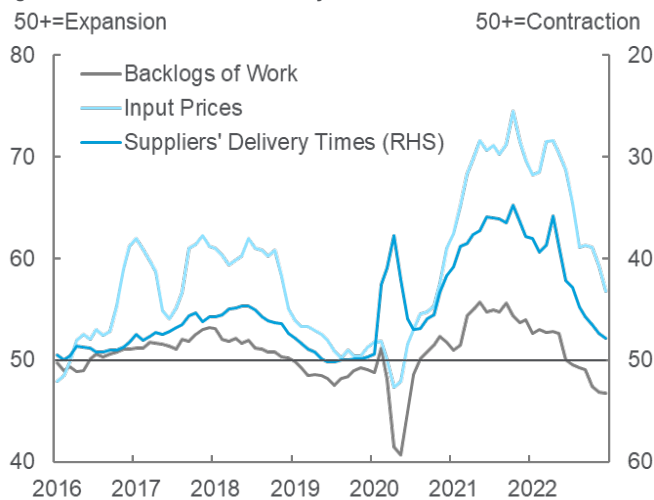
¹ Our index is the first principal component (PC) of these three sub-indices. Each of the sub-indices is, in turn, the PC of relevant underlying data series. For more detail regarding the construction of the index see [Global Supply Chains — How Intense Are the Pressures?](#), January 2022.

For the PMIs, backlogs of work have been below 50 for several months now and are showing readings even somewhat better than the pre-pandemic average (see Figure 4). In contrast, suppliers' delivery times and particularly input prices continue to point to some ongoing tightness, but they have retreated sharply from levels seen earlier in 2022 and are near readings seen during the 2017-18 global manufacturing expansion. Taken together, the PMIs have now fallen to levels that are more historically normal.

The inventory indicators are also showing marked improvement, as finished goods inventories are being replenished (see Figure 5). Notably, the global PMI for finished goods inventories has been above 50 for several months, recording some of the highest readings of the last several years. The German ifo Business Climate Index component for finished goods inventories has also recently turned positive after more than a year of negative readings.

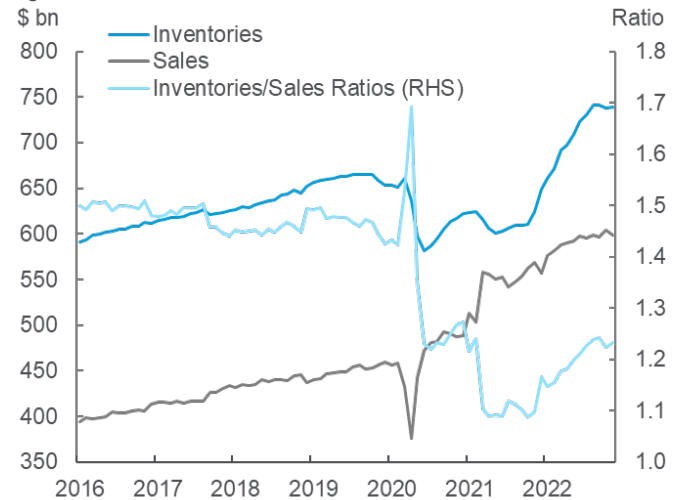
The U.S. inventory picture is a somewhat different story. While the U.S. inventory-to-sales ratio climbed in 2022 overall, it increased only modestly from its 2021 trough and is still far removed from pre-pandemic levels.² As shown in Figure 6, the ratio has moved sideways in recent months as inventories and sales have more or less flatlined. This ratio will likely rise going forward, but the relative contributions from rising inventories versus falling sales remain to be seen.³

Figure 5. Finished Goods Inventory Indicators



Source: S&P Global, ifo, Haver Analytics, Citi GPS

Figure 6. U.S. Retail Sales and Inventories



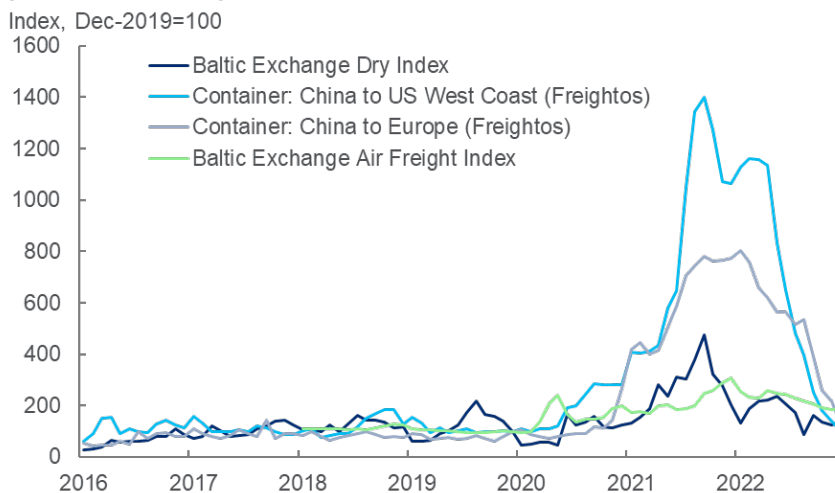
Source: U.S. Census Bureau, Haver Analytics, Citi GPS

² These data are somewhat less timely than other measures in our inventory sub-index, with observations only available through November.

³ Technically, the PMI asks firms to compare the current situation to the situation one month previously. Thus, as the PMI crosses 50, it means that inventories have stopped becoming leaner but does not imply that inventories are back to normal levels. Viewed from this perspective, the PMI and U.S. retail data look more consistent with each other.

As highlighted in Figure 7, the overall improvement in global shipping costs has been less pronounced than for the PMI and inventory data but, nonetheless, has been significant. As shown in Figure 7, the cost of shipping a container from China to the U.S. West Coast, which has been a prominent contributor to the supply chain tensions, has fallen sharply from its peak of over \$20,000 in this cycle to below \$2,500. Other shipping cost data have also improved markedly in recent months.

Figure 7. Global Shipping Costs



Source: Freightos, The Baltic Exchange, Bloomberg, Haver Analytics, Citi GPS

Implications for Inflation

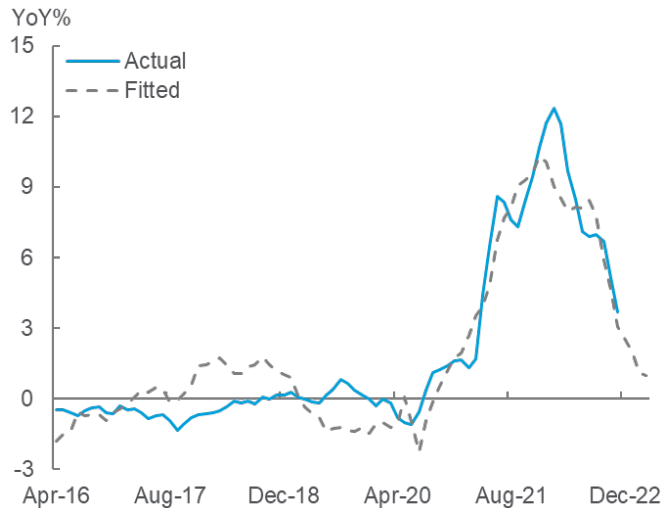
In previous work done by Citi's Global Economics team, a statistically significant relationship was found between the Global Supply Chain Pressure Index and core goods inflation (i.e., excluding food and energy) when the model includes the pandemic cycle for both the U.S. and Developed Market countries more generally. The relationship was particularly strong with a three-month lag.⁴

Figure 8 shows the results for our U.S. core goods inflation model. The model has tracked the contours of inflation in this episode fairly closely. Notably, the most recent data are well aligned with our model's output. For developed market countries, our model has also tracked developments closely, although the data have diverged somewhat more in recent months than for the U.S. model alone (Figure 9). Still, the developed market model did argue that pressures would cool in recent months which, on net, has occurred.

The rapid improvement in our Global Supply Chain Pressure Index during the summer is just starting to feed into our models. Our forecasts argue that goods inflation is likely to cool significantly further from today's levels. Specifically, given that supply-chain developments tend to influence inflation with a lag, the recent easing of pressures we have seen suggest that U.S. core goods inflation would fall to 1% in coming months, down from its recent pace of over 3.5% and significantly improved from its highs earlier in 2022 above 10%. For developed market core goods inflation, we expect improvement to be quite rapid too, moving from a current pace of near 5% to under near 1% as well.

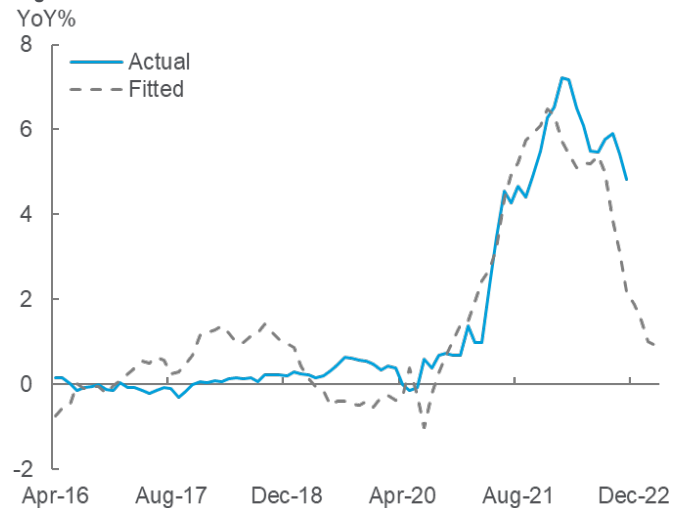
⁴ For more details on the models, see [Global Supply Chain Pressures Ease Further](#), September 2022. Our DM aggregate includes the U.S., Euro Area, Japan, the U.K. and Canada.

Figure 8. U.S. Core Goods Inflation: Actual vs. Regression Model



Source: U.S. Bureau of Labor Statistics, Haver Analytics, Citi GPS

Figure 9. Developed Markets Core Goods Inflation: Actual vs. Regression Model



Source: National Statistical Sources, Haver Analytics, Citi GPS

Looking Ahead: Lessons for the Long Run

The key takeaway from our Global Supply Chain Pressure Index is that conditions are normalizing rapidly. Still, businesses are unlikely, in our view, to move back to pre-pandemic business as usual. This cycle has highlighted a range of areas where supply chain management can be improved to avoid disruptions and ensure a consistent and reliable production process.

One major lesson from the pandemic was that firms need to be cognizant not just of their immediate suppliers, but of the suppliers of their suppliers. These second-tier and even third-tier linkages caused previously unthinkable disruptions in global production over the last few years. Businesses will be increasingly focused on these linkages going forward and will assess the necessity and durability of these relationships. This process is likely to have several key implications.

First, supply chains are likely to go through some process of reconfiguration. Producers will look to diversify suppliers of key inputs to avoid shortages and excessive dependence on single sources of supply. In tandem, firms are likely to aim for ways to increase visibility by monitoring all elements of the production cycle. Second, the relationships throughout the supply chain that are maintained are likely to be made stronger. Firms may enter into longer-term commitments with suppliers in order to ensure a consistent flow of products throughout a cycle. This type of arrangement will require more upfront committed capital but will also minimize downside risk. Third, firms will embrace digitization and automation to be able to assess supply chain dynamics in real time. This process will make firms more plugged in to any rapidly evolving developments and allow them to adjust more nimbly.

Inventory management is also likely to shift. Pre-pandemic, firms largely employed a just-in-time inventory strategy that looked to keep inventories lean to maintain a cost-effective production process. Alternatively, just-in-case inventory management focuses on not running out of stock in the event of a surge in demand and requires somewhat larger inventories. The pandemic showed the benefits of a just-in-case inventory strategy, as many firms were not prepared for the surge in goods demand that followed the initial lockdowns. While just-in-time is not likely to be abandoned entirely, at a minimum, firms are likely to hold larger inventories than they did previously for components that are hard to source.

An important related question is how firms will shift their production geographically, particularly given that reorienting supply chains likely means bringing at least some production closer to home. In this past cycle, firms have seen that having far-flung supply chains can come with high risks. Moreover, the current political environment in the U.S. and other countries may also lead to the diversification of supply chains away from China. Governments may even help redirect supply chains for both domestic economic and security reasons. The U.S. CHIPS and Science Act that passed in August 2022 very much underscores this point as it aims to increase U.S. technology production largely at the expense of China.

Still, the ultimate extent of how much production will be “re-shored” or moved closer to home remains an open issue and will depend heavily on the relative costs of production in various parts of the world. China and other East Asian economies housed a significant share of global manufacturing in recent decades because they were a cost-effective option for firms. Many of those realities are still in play. Our sense is that some production will leave Asia, but the region will remain an important source of global manufacturing. Rather than making drastic shifts away from certain regions, firms are likely to rely more on contingency planning to have backup options in case a segment of their supply chain breaks down, as well as to keep larger inventories to maintain production in the event of disruptions.

All told, this reevaluation of supply chains itself will come with significant upfront costs and any adjustments to production will be an expensive process. Ultimately, the extent to which firms research these issues and then move through with structural changes will depend on how they assess the risks of material disruptions to supply chains occurring in the future. Undoubtedly, various firms in differing industries will have diverging views about the nature of supply chain risks and will respond in different ways. Still, by our reckoning, the overall direction of travel for most firms is clear.

Concluding Thoughts

The data across the board show a material improvement in supply chain pressures from April through December of 2022. This loosening of supply chain pressures reflects both the rotation of spending back to services as the pandemic wanes and demand destruction from high inflation. Given that supply chain pressures were a critical driver of goods inflation during this cycle, we expect the reverse to hold true and that an easing of supply chains will mean an easing of global goods inflation.

However, we still see high uncertainty around our analysis. In previous work, we were unable to identify a compelling relationship between supply chains and goods inflation before the pandemic — the two only appear related once the current cycle is included. Our estimates may therefore overstate the effects an unwinding of supply chain pressures will have on goods inflation. Still, data so far are encouraging as core goods inflation is down from its peak as our modeling would suggest.

Moreover, goods inflation is only part of the current high inflation environment. Services represent the lion's share of consumer spending — historically roughly two-thirds in the U.S. and close to 60% in developed markets, on average — and price pressures in services are building as the sector continues to recover. Put bluntly, services inflation is running high and looks like it will be hard to bring down. Unless these pressures on services prices break much sooner than expected — which looks unlikely — many central banks will keep tightening policy in coming months.

Longer term, this episode of historic supply chain disruptions is unlikely to be quickly forgotten. Businesses will generally move to make their supply chains more efficient, easier to monitor and manage, and more robust to disruptions in any one part of the production process. With an eye on supply-chain resilience, firms will aim to achieve increased geographical diversity and — for critical inputs — increased redundancy of supply. Inventory management is also likely to change significantly, with firms stockpiling more components than usual particularly for hard-to-source materials.

The implications for different regions in the world and globalization more generally, remain to be seen. U.S. firms, for example, may look at Latin America as an alternative to producing in China and elsewhere in Asia. Still, Asian economies are likely to remain attractive options for production from a cost perspective, and those considerations will have to be weighed against broader supply chain risks. Taken together, while it seems likely that global integration will decline at least somewhat and some production will be “re-shored” closer to home, the relative strength of these factors and their broader implications for the global economy remain to be seen.

The Role of Supply Chain Finance

The Role of Supply Chain Finance

Chris Cox

Global Head of Trade and Working Capital Solutions, Citi Treasury and Trade Solutions

In our December 2021 Citi GPS [Global Supply Chains: The Complicated Road Back to “Normal”](#) report, we identified signs of improvement in supply chain management and an easing of pressures. We highlighted the potential for changes to long-practiced supply chain management techniques, such as the shift from just-in-time to just-in-case inventory management. We also noted that corporates were re-examining and optimizing their supply chains by strengthening supplier relationships and diversifying critical component sourcing — either by sourcing capacity in additional regions or closer to home. The need for greater automation and tools to enhance visibility also appeared to be growing.

With the start of 2022, we saw renewed COVID-19 lockdowns, especially in Asia and specifically in China. The war in Ukraine, which began in February 2022, has cast a long shadow across the global economy. Ukraine and Russia are significant producers of food and energy supplies. The resulting stresses and implications are particularly intense in Europe given its dependence on Russian energy and other commodities. Companies are more focused than ever on making their supply chains more resilient. However, the situation is evolving rapidly. Some of the themes identified just a year ago are already under reconsideration, and what the new normal becomes remains to be seen.

What is Happening to Global Flows?

Globally, Citi’s Treasury and Trade Solutions division processes \$4 trillion of daily payment flows on average. Payment and receivable flows through the Citi payment network reveal an ongoing improvement, as global trade has stabilized following multiple disruptions in 2021 and early 2022. Payment flows have seen some normalization in the second and third quarter of 2022 following periods of volatility in the first quarter.

Q1-Q3 2022 Versus Q1-Q3 2021

- The most striking trend in the first three quarters of 2022 compared to the same period of 2021 is the 65% growth in natural resources and clean energy transition (NRCET) trade flows as energy prices soared in the wake of sanctions placed on Russia and flows shifting regionally in acquisition of additional sources of oil, gas, and commodities. Growth was led by domestic flows in the U.K., the U.S., and the UAE.
- There has also been considerable growth in industrials (27%). Domestic flows in the U.S. (up \$56 billion) and Singapore (up \$16 billion) are the primary growth drivers. Flows decreased out of the U.K. into Singapore (down \$12 billion), as the U.K faces increased economic challenges.

Technology flows grew by 13%, with domestic flows within the U.S. showing the largest increase (up \$40 billion). This corresponds with the push towards onshoring manufacturing and the distribution of critical technological components in the U.S. The large increase in domestic U.S flows does not correspond to a mass exodus from a traditional market. In fact, flows from Taiwan to the U.S. were up \$18 billion. Flows from Taiwan to Hong Kong were down \$28 billion.

Figure 10. Supply Chain Shift Analysis by Sector (% Change in Payment and Receivable Flows YTD 2022 vs. YTD 2021, as of September)



Source: Citi Treasury and Trade Solutions, Citi GPS

Figure 11. Supply Chain Shift Analysis by Region (% Change in Payment and Receivable Flows YTD 2022 vs. YTD 2021, as of September)



Source: Citi Treasury and Trade Solutions, Citi GPS

Q3 Versus Q2 2022

Payment flows remained strong through the third quarter of 2022. However, notably, industrials saw a decline while other sectors showed slight increases, suggesting that increased purchases of raw materials and inventory stock buildup in past quarters have leveled off.

- Healthcare flows increased strongly by 17%, led by flows to Ireland, which saw a \$10 billion increase, indicating that health-related purchases remained strong amid continued pandemic-related needs.
- NRCET grew by 11%, led by domestic flows in the U.K. (up \$75 billion).
- Industrials flows dropped by 9%, with significant drops within Singapore (down \$9 billion) and from Singapore to the U.K (down \$6 billion).
- Technology flows declined by 2%, with a major decline in flows within the U.S. (down \$3 billion) and from the U.S to Taiwan (down \$3 billion).

Figure 12. Quarter-on-Quarter Growth in Flows Across Industries



Source: Citi Treasury and Trade Solutions, Citi GPS

Rising Interest Rates and Financing Costs Threaten Supply Chains

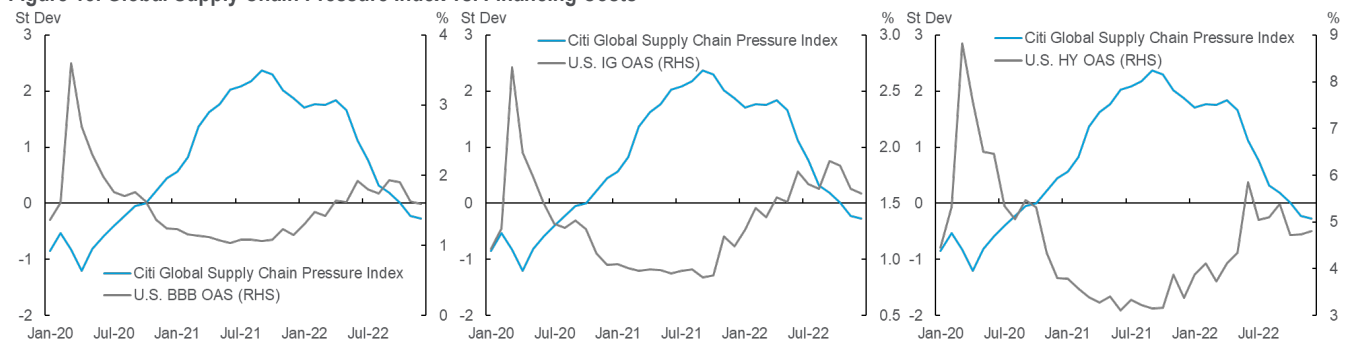
While complexities multiplied throughout the first half of the year — with pandemic-related issues lingering and the war in Ukraine adding further disruptions — an additional threat to the health of efficient supply chains has emerged.

Initially, increased costs for goods across the supply chain were widely considered as transitory. The expectation was that they would stabilize once logistics bottlenecks eased. As economies opened from pandemic-enforced lockdowns, consumers would switch from purchases of durable goods to the service economy, leading to a stabilization in supply and demand imbalances. This has indeed happened in the global goods industries, with shipping and logistics inflationary pressures easing significantly over the past eight months (as displayed earlier in Citi’s most recent Global Supply Chain Pressure Index).

However, inflationary pressures have dramatically increased over the last six months. Our survey of over 1,000 suppliers that are part of Citi-managed supply chain finance (SCF) programs highlights the impact of these physical supply chain challenges. Respondents, most of whom were small and medium-sized enterprise (SME) suppliers, cited COVID-19 restrictions and logistics problems as significant challenges. Tellingly, the survey revealed that an increase in cost of goods sold, including the cost of sourcing raw materials and components, was respondents’ principal concern. Inflation in many countries is now hovering around 40-year highs and is starting to constrain real incomes and growth.

To counter this development, central banks around the world have raised interest rates to the highest levels in years. Physical supply chain disruption has therefore given way to a new challenge: high inflation and rising interest rates. After an era of near-zero interest rates, inflation has put pressure on physical supply chains. In particular, the sudden shift in the financing landscape has focused attention on the health of the financial supply chain that powers physical supply chains. Higher costs are taking their toll on suppliers’ profit margins as they are financing inventory at their own cost of capital and in an inflationary environment. Moreover, financing costs for smaller companies are rising much faster than those for large corporates, increasing supply chain risk. Higher costs are also being passed on to corporates — and ultimately to consumers.

Figure 13. Global Supply Chain Pressure Index vs. Financing Costs



Note: IG = Investment Grade, HY = High Yield, OAS = Option-Adjusted Spread.

Source: Bloomberg, Citi GPS

Boosting Resilience is Key

In response to the physical supply chain disruptions of recent years — and in anticipation of further interruption — almost 60% of suppliers we surveyed believe disruption remains very or somewhat likely. This is driving corporates to be laser-focused on boosting supply chain resilience, and they have responded in a number of ways. One common change is an increase in inventory as corporates switch from a just-in-time to a just-in-case approach. Higher inventory comes at a cost, however, as it ties up working capital and reduces capital efficiency.

Onshoring/nearshoring is also a goal for some corporates amid geopolitical and supply chain instability, although it has slipped down the priority list given the immediacy of other challenges. Onshoring/nearshoring also increases costs, although as one North American survey respondent in the transportation sector notes, “customers are willing to pay slightly more to ensure products are produced domestically in order to avoid supply chain issues.”

However, in addition to these physical supply chain responses, companies want to enhance customer relationships and build resiliency into the financial supply chain to counter physical supply chain disruptions. Our survey shows that suppliers are eager to diversify their liquidity sources and credit capacity, for instance.

Ensuring the Financial Health of the Supply Chain

The disruption of global physical supply chains ushered in a shift in inventory management strategies from just-in-time to just-in-case. Amid disruption and the uncertain geopolitical landscape, reshoring/nearshoring emerged as potential solutions to help address instability. However, reshoring has been limited to date. Many corporates have instead added inventory buffers to ensure continuity and mitigate potential disruption caused by unforeseen shocks. Some are even considering broadening their supplier base to expand their access to key inputs. However, moving away from the highly efficient supply chain model and carrying excess inventory comes at a cost. Managing working capital more effectively is necessary if corporates are to counter the impact of additional carrying costs on their margins.

To help ensure the financial health of supply chains and mitigate risks, buyers and suppliers want to ensure they have ready access to financing, when and where it is needed. Making financing more readily available not only adds stability to the buyer-supplier ecosystem, but also helps enhance relationships between buyers and their key suppliers. The cost of capital continues to climb for both organizations large and small. But in an increasing interest rate and inflationary environment, the differential between the cost of investment grade and non-investment grade finance is becoming significantly wider. Buyers should be mindful of how this negatively impacts companies' working capital needs across the supply chain and adversely affects small suppliers. Small suppliers can make up a large portion of a buyer's supply chain, and even one supplier default can have dramatic impact on a buyer's operations.

The Role of Supply Chain Finance

SCF facilitates the flow of goods and finance that enable the global economy to function. In recent decades, it has become a mainstream tool for corporates in many sectors and has supported clients' suppliers through good times and bad. Now, SCF looks set to become more important than ever.

In an increasing interest rate and inflationary environment, the differential between the cost of investment grade and non-investment grade finance is becoming significantly wider, putting pressure on smaller suppliers. SCF uses the higher rating of buying companies to enable suppliers to gain early access to attractively priced finance. This increases suppliers' resilience, shoring up the physical supply chain.

SCF also delivers a number of additional benefits. Participation in an SCF program strengthens buyer/supplier relationships, potentially enabling buyers to gain access to scarce supplies or to lower costs, reducing the pressure on their margins. Buyers can also use participation in an SCF program as a way to expand their supplier network — a key goal for 62% of suppliers in our survey — in order to navigate supply chain disruption or reconfigure their supply chains through nearshoring.

Another favored response among corporates seeking to bolster their financial supply chain is to extend finance further into the supply chain. The interconnectedness of modern supply chains means that deep-tier financing solutions are necessary: Financing needs to reach the smaller suppliers that need it most. In a survey introduced to Citi SCF suppliers globally, responses confirmed many suppliers are also seeking “financing earlier in the commercial cycle, such as at the purchase order stage” and want to make use of tools such as pre-shipment finance that enable them to better manage their working capital.

Innovation and Partnerships Matter

As SCF has grown, it has attracted an ever-larger range of providers, including — in recent years — many FinTechs. Importantly, SCF is not a one-size-fits-all solution; however, it must be dynamic and support the complex, cross-border flow of goods. Moreover, the capabilities of providers vary markedly: SCF programs are not created equal. To understand why this is the case, it is useful to focus on some of the ways that SCF programs have evolved in recent years.

Firstly, innovation is critical to delivering value. SCF increasingly leverages new technologies to improve efficiency and ease of use. Global banks have digitized the end-to-end environment to accelerate the onboarding process and have partnered with FinTechs to enable electronic tracking of inventory and logistics. Technology has also allowed banks with a global presence, and deep local regulatory and business environment knowledge, to help corporates make rapid changes to their supply chains in response to current macroeconomic and geopolitical conditions.

Secondly, multilateral partnerships are playing more of a role in SCF. As the profiles later in this report highlight, multilaterals can provide critical risk mitigation, such as credit guarantees, that enable banks to support SME suppliers further down the supply chain, including last-mile suppliers in developing countries. Multilaterals are also valuable to improving environmental, social, and governance (ESG) performance throughout the supply chain, which is an increasingly important goal for many corporates. For instance, the International Finance Corporation has partnered with Citi and McCormick & Company to provide suppliers of McCormick's herbs and spices with financial incentives linked to improvements in measures of social and environmental sustainability.

Thirdly, for SCF to deliver the greatest possible benefit, it is increasingly important that providers have the flexibility to expand programs in response to demand. Clearly, providers must be willing to utilize their balance sheets to support clients. However, as SCF programs have grown in scale, this is no longer enough: Traditional relationship banks cannot do it alone. Instead, providers differentiate themselves through their commitment to develop short-term SCF liquidity as an asset class in order to augment capacity.

Advanced technology and automation can also make it easier to market and distribute these assets by improving liquidity and transparency, so that they can reach a wider audience. By developing these channels — and access to the secondary markets — it is possible to decrease financing costs for suppliers and help to restrain the inflationary pressures on cost of goods sold. Broader distribution of SCF assets also means programs can endure regardless of conditions in the financial markets or problems with any one investor.

Looking Beyond Disruption

Given the uncertain outlook, both suppliers and buyers are focused on strengthening and expanding their physical supply chains to counter disruption. Trade ecosystems remain fragmented, and innovative platforms can play an important role in digitalizing the physical supply chain and improving the efficiency of the financial supply chain.

By reinforcing existing supplier relationships and offering incentives to new suppliers, SCF also has a critical role in building resilience. A stronger financial supply chain results in a more robust physical supply chain. Yet SCF can do even more to overcome the many supply chain challenges afflicting both suppliers and corporates. For instance, it can help to reduce the pressure that results from a company's need to hold high levels of inventory, as well as the damage resulting from accelerating inflation and a higher rate environment.

Moreover, SCF can help extend financing deeper and earlier into supply chains and provide financing at the pre-shipment stage with products such as purchase order financing. By utilizing partnerships with FinTechs, platform providers, and multilaterals, it is possible to reach all parts of the client value chain. Citi is working with Stenn, for instance, to provide deep-tier supplier financing, as well as with British International Investment to target SME suppliers in Africa. Innovations such as dynamic discounting, which enables corporates to use excess short-term cash to fund early payment of approved supplier invoices, can also create additional value.

SCF is clearly a tool for our time. A strong balance sheet and a robust risk and control framework are important if banks are to be able to provide dependable funding and sustainable investment in SCF technology. Similarly, a global footprint, deep local understanding, digital technology, and diversified funding sources (through the creation of marketable assets and the building of distribution channels) can give corporates the agility they need to minimize disruptions to their supply chains and pursue their operational objectives. Partnerships with development agencies or national governments can add further value and help to extend SCF deeper into the supply chain so that its benefits are accessible to an ever-wider universe of suppliers, including critical SMEs. Innovation and partnerships with FinTechs can enable purchase order financing and deep-tier financing, as well as consolidate supply chain data to make it easily accessible to both buyers and suppliers so they can enhance their working capital management. By leveraging reliable SCF programs, both buyers and suppliers can build resiliency, access efficient liquidity, and strengthen relationships so that they endure and prosper during these turbulent times.

The State of Supply Chains

Supplier & Large Corporate Surveys

The pandemic and the subsequent reopening of global economies highlighted the fragility of highly efficient and complicated supply chains. In response, corporates began to shift supply chain management strategies. To get a better sense of how they are managing their supply chains in the current environment, Citi commissioned two separate surveys to gather insights about the current state of supply chains.

- Citi Research conducted a survey of 1,169 corporates who are suppliers participating in Citi-managed supply chain finance programs. The survey was conducted across Asia Pacific; Europe, the Middle East and Africa (EMEA); Latin America; and North America from September to October 2022. The suppliers provided company-level information such as company size, industry, and location and answered questions about both their role as suppliers and as buyers regarding their own supply chains. Of the total, 92% were from small and medium-sized enterprises (SMEs), 87% had fewer than 500 employees, and 68% had 2021 revenue of less than \$20 million.⁵ SMEs are a key part of the broader supplier ecosystem and often face the greatest challenges accessing financing. The suppliers surveyed had customers predominantly located in North America and Western Europe.
- Citi partnered with East & Partners, a global B2B financial markets research firm, to conduct primary, voice-of-the-corporate research on large corporates' supply chain challenges, resiliency, and futures. The research was executed August to October 2022 across nine markets in Asia Pacific and multiple markets in North America; Europe, the Middle East, and Africa (EMEA); and Latin America. The population consisted of the top 100 annual revenue-ranked corporates in each country market, and a total of 1,327 corporates were interviewed. The research was detailed in nature, with video interviews averaging an hour in length. The average revenue of companies that participated was \$1.7 billion.

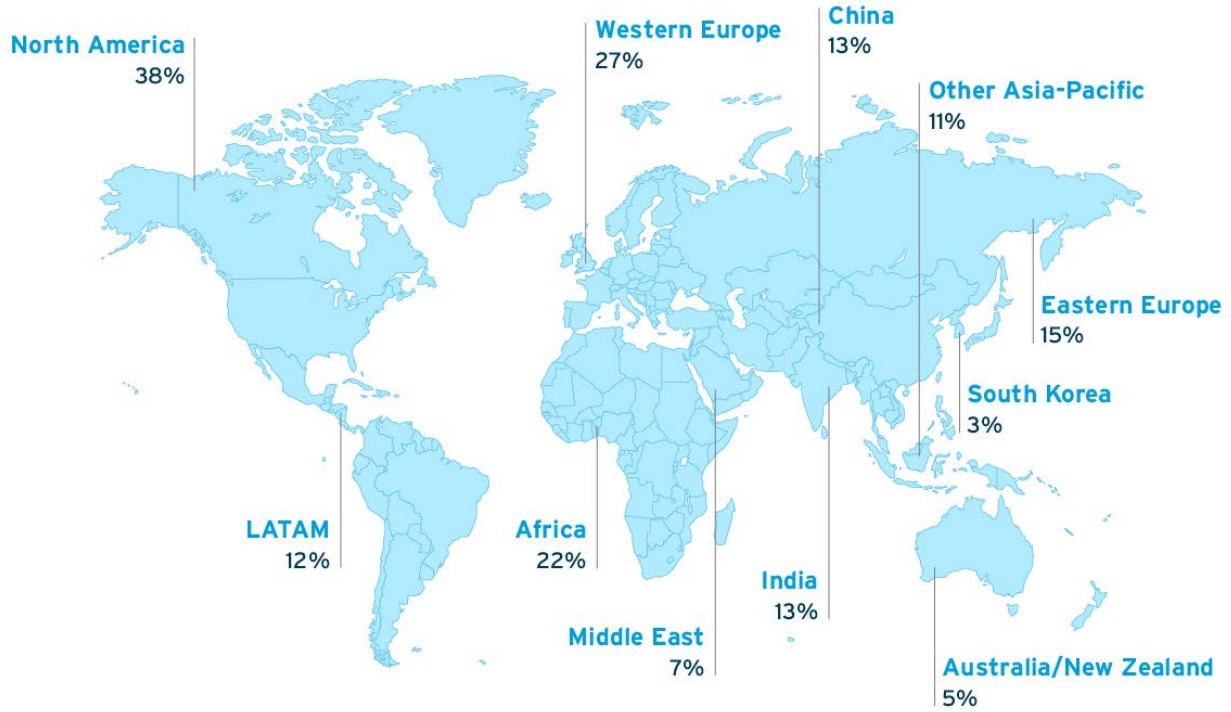
The surveys yielded powerful insights into the challenges facing companies large and small around the world. Five themes emerged from the two surveys.

1. The effects of rising prices, rising interest rates, and high inflation are impacting supply chains globally. Chief financial officers (CFOs) and treasurers are taking steps to ensure the resilience of their financial supply chains.
2. Corporates and their suppliers want to strengthen relationships to mitigate further disruption. Shifts in order patterns have complicated demand forecasting. Both have embraced track and trace technologies, but tools to help forecasting future sales remain immature.
3. Disruptions caused by the pandemic have given way to geopolitical tensions as the primary threat to supply chain funding stability.
4. Despite economic headwinds, respondents from both surveys are optimistic about the prospects for exports and international sales growth in the next six months.
5. ESG is an area of focus at the head office level. However, a lack of clarity around ESG definitions and measures has impeded meaningful progress.

⁵ An SME is defined as having under 500 employees and/or less than or equal to \$100 million in revenue.

Figure 14. Citi Supplier Survey

 Supplier Locations - 1,169 Respondents



92% were from small & medium-sized enterprises (SMEs)



87% had fewer than 500 employees



68% had 2021 revenue of less than \$20 million



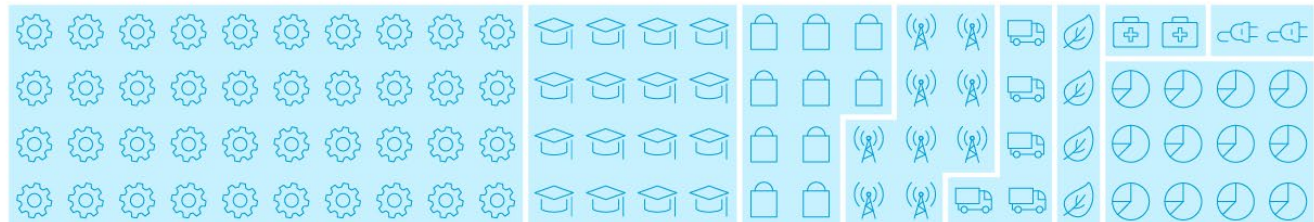
66% had customers located in NAM and EMEA



40% supplied the Industrial sector

Respondents' Supplied Sectors

-  Industrial
-  Services
-  Consumer
-  Tech, Media & Telecom
-  Transportation
-  Materials / Natural Resources
-  Healthcare
-  Utilities
-  Other

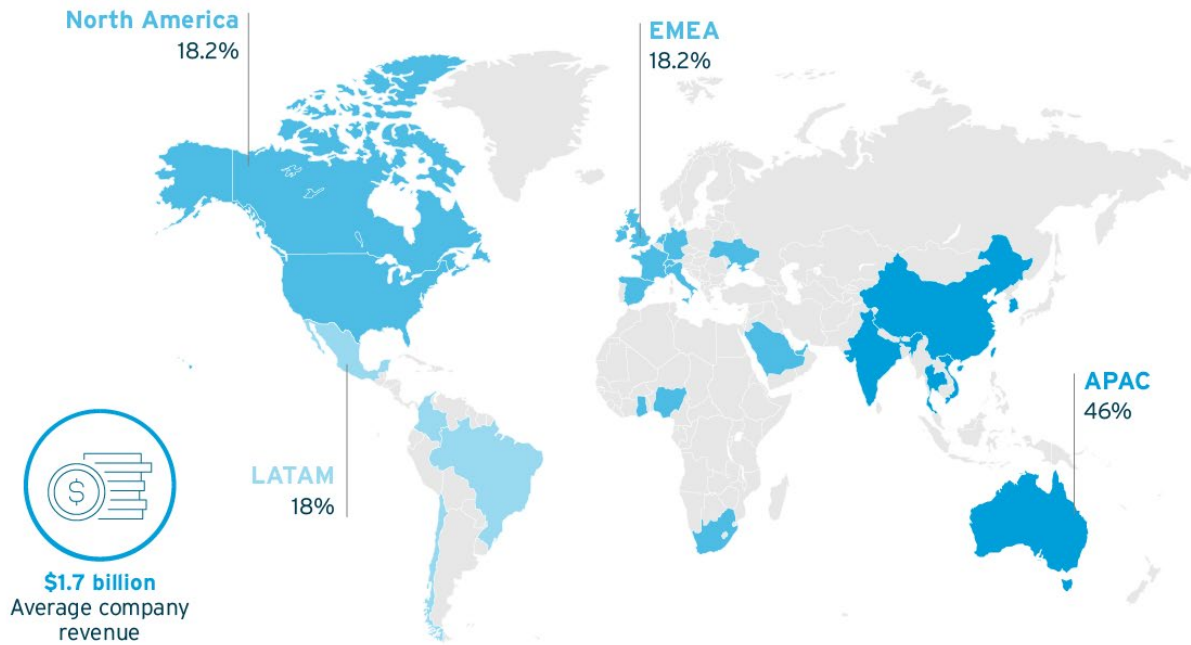


Source: Citi Treasury and Trade Solutions, Citi GPS

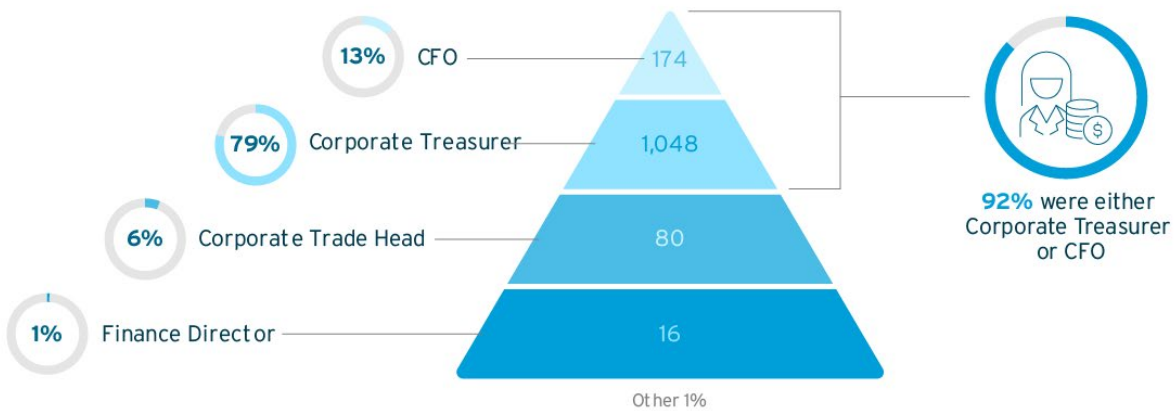
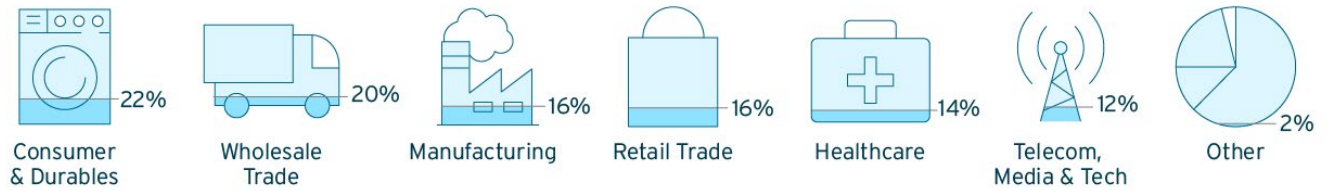
Figure 15. East & Partners-Citi Survey of Large Corporates



1,327 Respondents across four regions

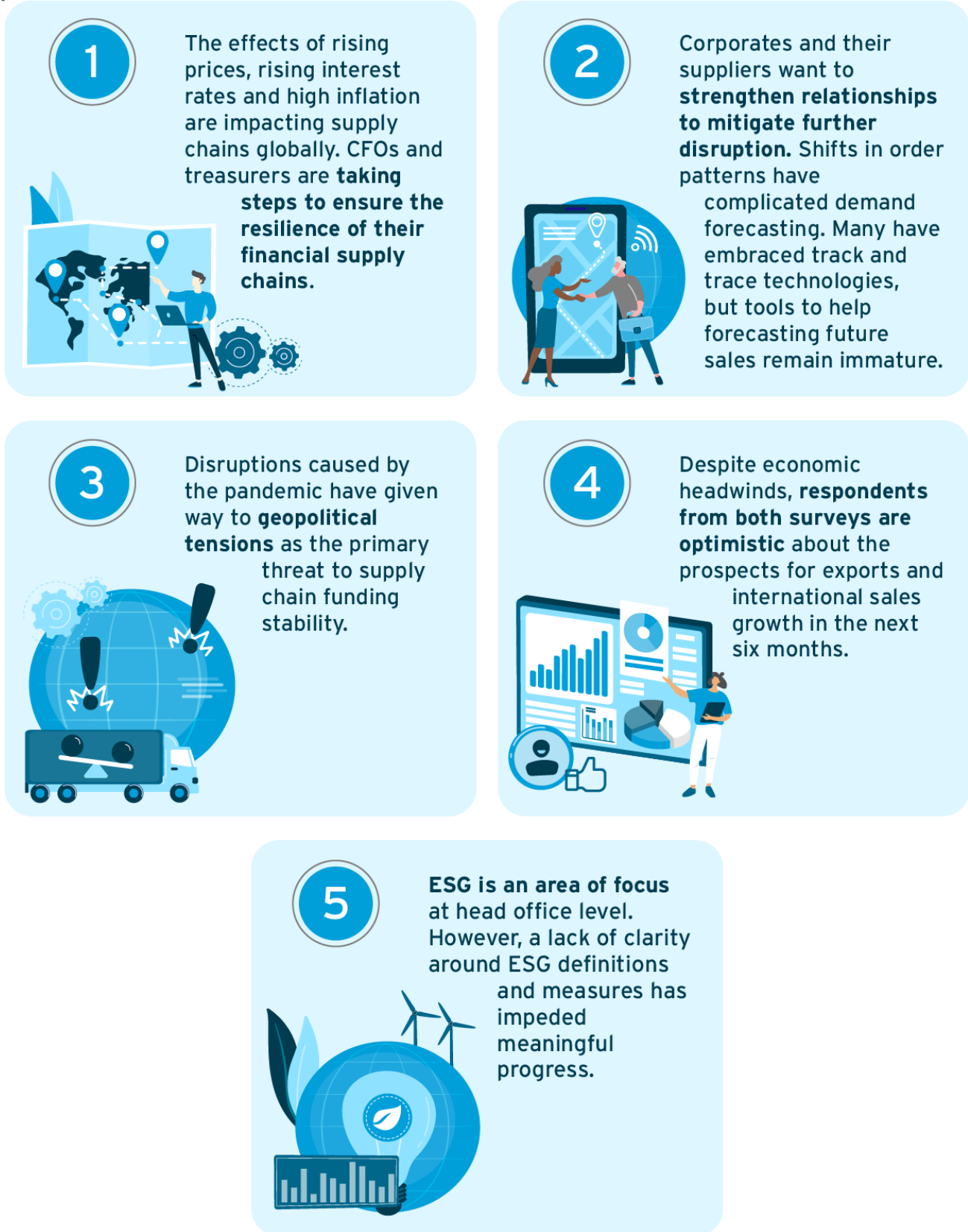


Industry Distribution



Source: East & Partners, Citi Treasury and Trade Solutions, Citi GPS

Figure 16. Five Themes Emerging from Citi Surveys of Suppliers and Large Corporates



Source: Citi Treasury and Trade Solutions, Citi GPS

To address these top supply chain challenges, corporates and banks are working to focus on accessibility of efficient liquidity to suppliers, and particularly SMEs. Supply chain finance (SCF) and dynamic discounting (DD) programs are tools to support supply chain resilience. Citi continues to digitize and simplify outreach and onboarding for this purpose.

To help inject liquidity further into supply chains, and in all parts of the world, banks and corporates can partner with development agencies and FinTechs. These partnerships can help enable purchase order financing, deep-tier financing, and ESG financing programs. By leveraging these supplier finance tools, buyers and suppliers can build resiliency and strengthen relationships.

What Suppliers Are Saying

Suppliers globally have experienced material disruptions to their businesses over the past two years. There is an increasing emphasis on mitigating future supply chain shocks by implementing new working models and re-evaluating the prerequisites for success.

Respondents most commonly identified rising costs as the greatest disruption or challenge experienced by their organization. This was consistent across small and large suppliers, location, and customer industry. Additionally, suppliers frequently cited difficulty in forecasting buyer demand. Over the past year there were significant shipping delays and demand fluctuations, which limited market visibility. Such factors can leave suppliers vulnerable to future shocks, leaving them unable to meet demand or having an excess of inventory.

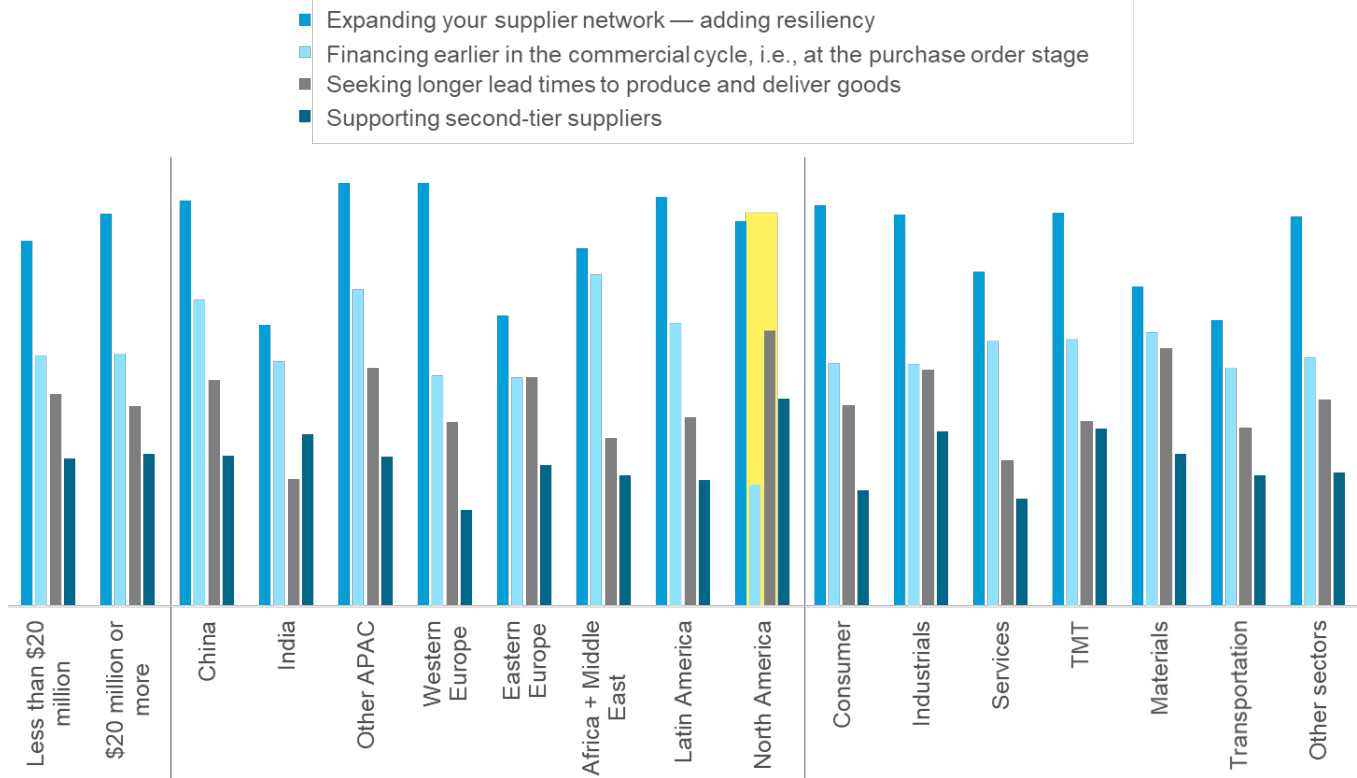
Figure 17. What Supply Chain Challenges Has Your Organization Faced in the Past Two Years?

| | | Increased costs of goods sold / raw materials, components | Labor shortage / COVID Restrictions | Difficulty forecasting and planning for customer demand | Shipment of goods to customer destination / port delays/trucking shortages | Prohibitive financing costs and/or difficulty accessing financing | Difficulty procuring from downstream suppliers | Foreign currency risk / volatility |
|---------------------------|------------------------------|---|-------------------------------------|---|--|---|--|------------------------------------|
| 2021 Revenues | Less than \$20 million | 63% | 41% | 37% | 27% | 23% | 23% | 18% |
| | \$20 million or more | 71% | 49% | 45% | 50% | 14% | 23% | 28% |
| Headquarters Location | China | 59% | 44% | 47% | 44% | 21% | 21% | 47% |
| | India | 63% | 41% | 29% | 23% | 21% | 14% | 19% |
| | Other APAC | 69% | 53% | 43% | 41% | 29% | 24% | 25% |
| | Western Europe | 67% | 52% | 46% | 38% | 9% | 30% | 24% |
| | Eastern Europe | 75% | 28% | 45% | 25% | 16% | 22% | 17% |
| | Africa and Middle East | 60% | 24% | 29% | 23% | 43% | 19% | 29% |
| | Latin America | 67% | 29% | 31% | 34% | 22% | 5% | 21% |
| Sector Primarily Supplied | North America | 77% | 62% | 47% | 45% | 11% | 37% | 11% |
| | Consumer | 74% | 51% | 45% | 47% | 15% | 20% | 30% |
| | Industrials | 77% | 42% | 44% | 40% | 20% | 30% | 23% |
| | Services | 45% | 40% | 27% | 14% | 23% | 12% | 12% |
| | Technology, Media, Telecom | 54% | 43% | 34% | 26% | 24% | 21% | 15% |
| | Materials/ Natural Resources | 67% | 41% | 48% | 48% | 15% | 26% | 28% |
| | Transportation | 51% | 54% | 41% | 33% | 25% | 16% | 7% |
| Others | 65% | 46% | 39% | 35% | 22% | 22% | 23% | |

Source: Citi GPS

In the current inflationary environment, addressing rising cost of goods sold (COGS) is critical for suppliers. Globally, 46% of respondents indicated they are passing costs directly on to customers. Notably, that number rose to 71% for North American suppliers, highlighting higher pricing power in the region.

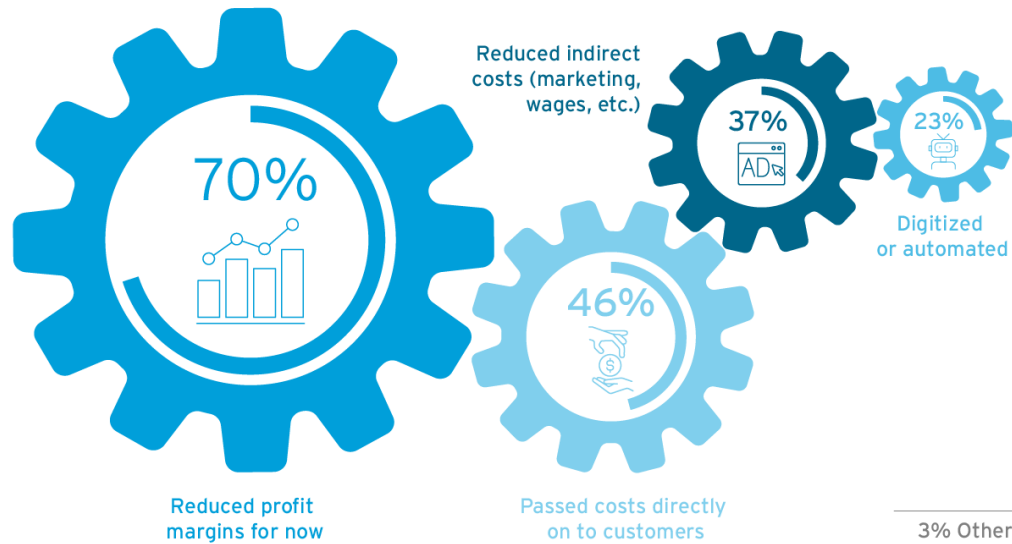
Figure 18. Strategies to Counter Supply Chain Disruption



Source: Citi Treasury and Trade Solutions, Citi GPS

Globally, suppliers that cited rising COGS as a challenge are addressing it with a multi-pronged approach, accepting the inevitability of reduced profit margins as well as passing on a portion of the costs directly to their customers. Many suppliers are also looking for ways to cut costs and streamline their business processes.

Figure 19. Impact of Increase in Cost of Goods Sold



Source: Citi Treasury and Trade Solutions, Citi GPS

Over 50% of respondents expect some level of disruption to persist into 2023. In response, they are implementing new practices to embed resilience into their businesses. These include diversifying and expanding downstream supplier networks and seeking financing earlier in the production cycle. Taking financing at the purchase order stage enables suppliers to more effectively manage and optimize their working capital. Difficulty in forecasting order sizes and lead times due to fluctuations has intensified this need.

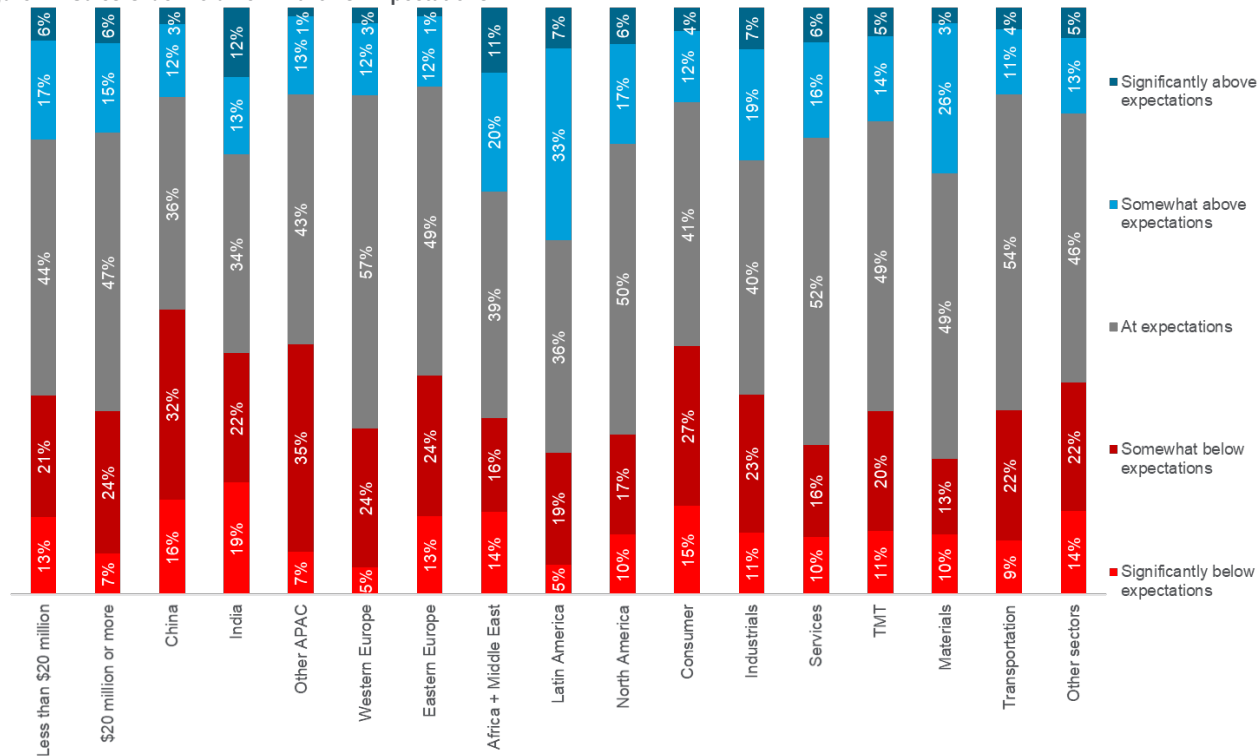
Figure 20. Strategies to Counter Supply Chain Disruptions



Source: Citi Treasury and Trade Solutions, Citi GPS

At the time of the survey (September to October 2022), suppliers' forward-looking orders remained strong. Two out of three suppliers indicated 2023 orders were at or above their expectations. This, paired with the expectation that disruptions will remain, explains why many suppliers are adopting new business practices. Interestingly, suppliers in China and those supplying to the consumer sector are the most pessimistic about 2023 sales volumes, perhaps reflecting ongoing COVID-19 disruption in China and fears for consumer spending as economic growth slows.

Figure 21. Sales Order Volume in 2023 vs. Expectations



Source: Citi Treasury and Trade Solutions, Citi GPS

The View from North America

While suppliers around the world face many similar challenges, there are also important regional differences. For instance, suppliers in North America are disproportionately impacted by labor shortages. Labor force participation has remained below pre-pandemic levels, as confirmed in a Bureau of Labor Statistics report from December 2, 2022. The high number of job openings also reflects hiring difficulties faced by corporates.

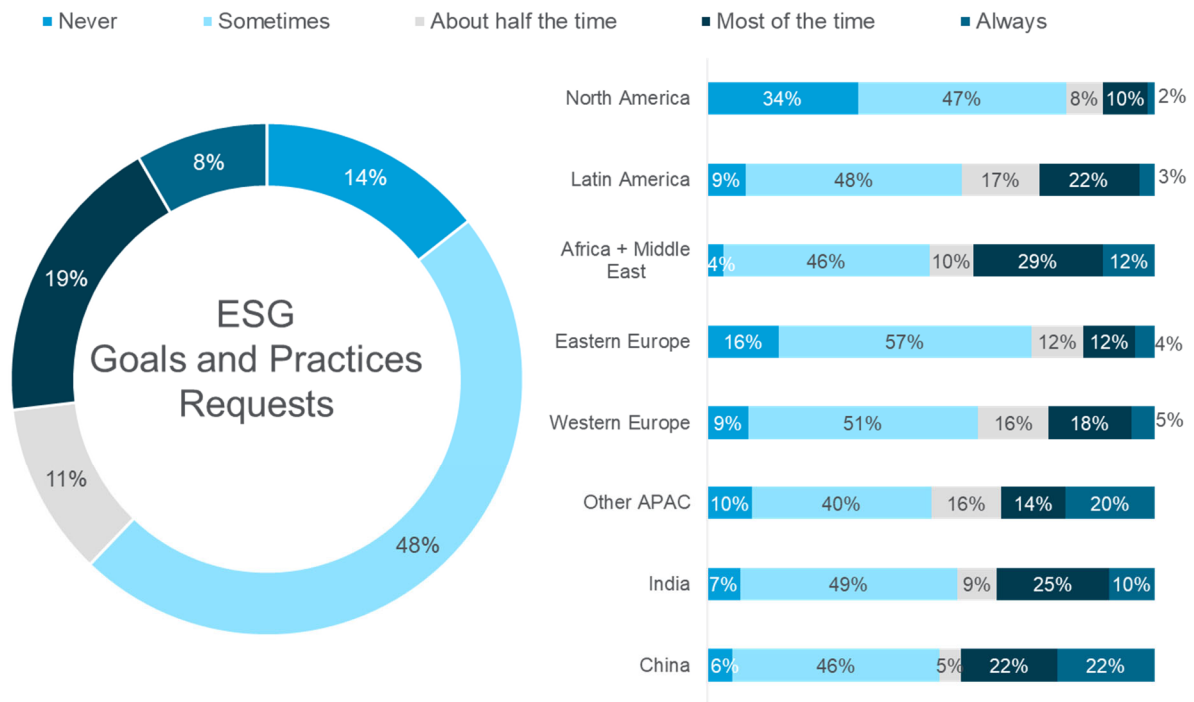
In addition to labor-related issues, North American suppliers face two additional challenges that are less important to suppliers elsewhere:

1. A reliance on imports across large networks of downstream suppliers.
2. The need to navigate complex global trade routes.

Effects experienced downstream are often amplified upstream to the end-recipient of goods. These contingencies can leave suppliers more susceptible to supply chain shocks, and sudden increases or decreases in demand can be difficult to respond to.

When asked about the likelihood for disruptions to continue into 2023, North American suppliers had a significantly more pessimistic outlook than those in other regions. Suppliers in North America were more likely than those in other regions to seek longer lead times to help address future disruptions. More positively, compared to those in other regions, North American suppliers felt less impacted by rising rates, and fewer have experienced difficulties in accessing financing. Corporates are placing increased emphasis on ESG goals and practices. Engagement is often top down, being instigated by large buyers and cascading down to their supplier networks. Our survey showed that North American suppliers are less likely to be asked about ESG practices by their buyers than suppliers located in any other region. Adopting ESG practices can improve buyer-supplier relations, or even lead to incentivized pricing.

Figure 22. Frequency of Customers' Request for Supplier's ESG Goals and Practices (n=993)

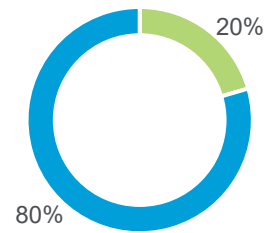


Source: Citi Treasury and Trade Solutions, Citi GPS

What Large Corporates are Saying

Over 75% of respondents across all regions indicated they are experiencing higher inventory costs. To help alleviate the burden of higher COGS, corporates are borrowing against their balance sheets and pushing inventory onto their suppliers' balance sheets.

As a result, 80% of respondents in all regions were concerned that customer credit profiles are weakening as margin compression strains profitability. Over one in five corporates with predominately large suppliers felt they were being impacted by rising interest rates; that share increased to 33% for smaller suppliers. To help reduce pressure, large corporates may seek bank financing against their receivables to the extent possible, but this option may not be available to smaller entities with weaker credit profiles. Irrespective of the funding mechanism, over nine out of ten global corporates said that working capital finance is a key tool in helping them stimulate revenue growth and bridge short-term cash flow constraints.

Figure 23. Are You Seeing Weakening Customer Credit Profiles?

- Do not see material weakening of customer credit profiles
- See material weakening of customer credit profiles

Source: East & Partners-Citi Large Corporate Survey, Citi GPS

To ensure resilience, corporates are focused on solidifying relationships, with over 50% prioritizing greater integration/communication with existing suppliers. Suppliers are seeking shorter payment terms and longer-term contracts as they contend with the challenges of forecasting demand in an era of just-in-case inventory practices. Three-quarters of all corporates have adopted technology to track goods; North American corporates were twice as likely as EMEA corporates and three times as likely as Latin American corporates to have digitized supplier onboarding. Distributed ledger technology (DLT) and demand forecasting solutions provide an opportunity to enhance the buyer-supplier relationship.

Figure 24. Top Strategies to Improve Supply Chain Resilience, % of Total Responses

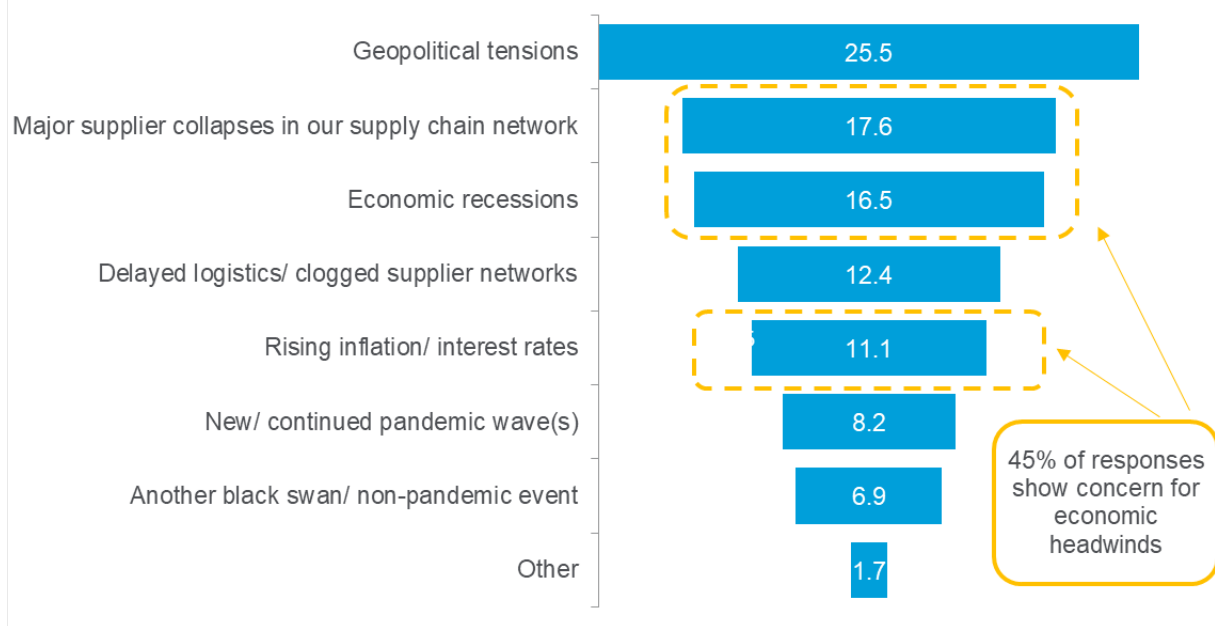


Source: East & Partners-Citi Large Corporate Survey, Citi GPS

All regions (apart from Latin America) view geopolitical tension as the top risk to supply chain funding stability, with roughly 25% of all respondents signaling that this is their chief concern. In comparison, concern related to continued disruption from COVID-19 or another "black swan" event is now minimal in comparison, with only 7% of respondents saying this is their top concern. Respondents in Asia Pacific were most likely to voice concern about disruption from COVID-19, which is unsurprising given that the region has endured some of the most persistent lockdown measures. Organizations see value in diversifying their supplier bases as a way to mitigate further disruption.

While corporates viewed geopolitical tension as the most likely catalyst for disruption, economic pressures also loomed large: 23% of respondents in Latin America felt a major supplier collapse represented the biggest threat to supply chain funding stability. Corporates are almost at the point at which further costs cannot be passed onto consumers. Both small and large suppliers are passing on carrying costs, with large suppliers more likely to do so.

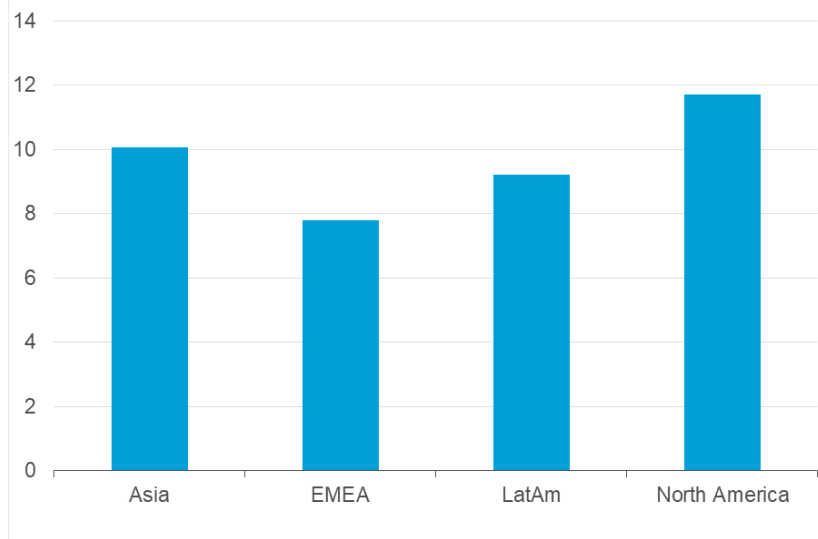
Figure 25. Next Biggest Supply Chain Funding Stability Challenge, % of Total Responses



Source: East & Partners-Citi Large Corporate Survey, Citi GPS

Globally, 50% of corporates expected their sales of goods internationally to increase in the coming six months. North American firms expected exports to grow by 11.6% on average, followed by 10.2% in Asia Pacific; 9.3% in Latin America; and 7.7% in EMEA. These results are broadly in line with the Citi supplier survey, which showed that two-thirds of respondents' saw orders at or above expectations. However, only one in ten corporate CFOs or treasurers felt their supply chain partners were ready to expand at their pace without additional support. CFOs and treasurers in Asia Pacific were the exception to this, with 45% confident that their suppliers were able to grow with them. These findings underpin the importance of buyer-led financing programs and their role in supporting suppliers.

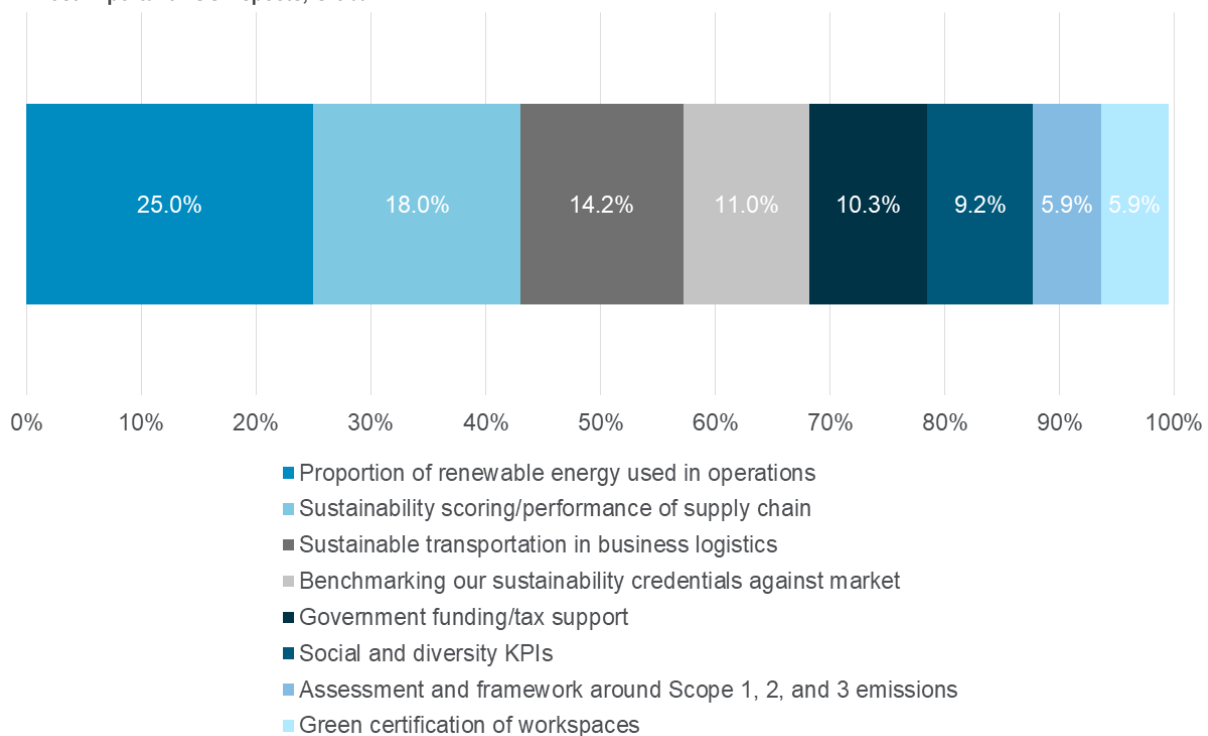
Figure 26. Anticipated Change in Exports, Next Six Months



Source: East & Partners-Citi Large Corporate Survey, Citi GPS

Against a backdrop of supply chain disruption and a rising interest-rate environment, corporates have not lost sight of their ESG goals. Globally, 25% of respondents cited increasing the proportion of renewable energy used by their business as their top ESG initiative. Benchmarking sustainability credentials against the market and accessing government funding and tax relief related to ESG were also important to respondents. The slow adoption of ESG measures is due to multiple factors, but one stood out for survey respondents. As a treasurer from one large wholesale trader in Singapore noted: “One big issue for us is the shifting set of standards around ESG; given the level of investment this is going to take, not having consistency around these is a real barrier to moving forward.” Overall complexity and a lack of consistent definitions continue to be a drag on corporates’ ability to meet their ESG goals. Embedded ESG solutions represent an opportunity to help corporates make progress on their ESG mandates.

Figure 27. Most Important ESG Aspects, Global



Source: East & Partners-Citi Large Corporate Survey, Citi GPS

Conclusion

Amid high inflation and a rising interest-rate environment, our surveys show that buyers and suppliers recognize they are in it together. U.S. Federal Reserve Chairman Jerome Powell has signaled that while rate increases may slow, they are likely to continue; similar trends are likely, to varying degrees, in many other major economies. The disruption of highly complex supply chains for myriad reasons in recent years has highlighted the interconnectedness of buyers and suppliers’ ecosystems. Should credit availability begin to dwindle, both parties will want to be sure they are able to access all the funding channels available to them. For buyers and suppliers, supporting each other’s physical supply chains means supporting each other’s financial supply chains.

The Role of International Finance Institutions in Supply Chain Finance

John Finnigan

Head of Development Organizations,
Public Sector Group, Citi

The Role of IFIs in Supply Chain Finance

International trade finance is essential to global commerce and often referred to as the lifeblood of the global economy. It powers innovation, stimulates efficiency and competitiveness, and spurs economic growth and social development. Access to trade finance is especially important for small and medium-sized enterprises (SMEs) in emerging markets and developing economies. Becoming part of international supply chains is a proven way for companies to increase their operational sophistication and scale, foster new relationships, and access opportunities that drive growth and deeper integration into the global economy.

Global trade faces significant headwinds as it recovers from the economic consequences of COVID-19, including ongoing logistics problems, accelerating inflation in many countries, high commodity prices, and a complex geopolitical environment that threatens to fragment some important trade routes that have emerged in recent decades. Despite this, the International Chamber of Commerce, working with Global Credit Data and Boston Consulting Group, expects global goods trade to grow at a 5.6% compound annual rate over the next 10 years on a nominal basis.⁶

If that goal is to be achieved, then more finance must be made available. Solutions such as supply chain finance (SCF) have become increasingly important for many suppliers in developed markets over recent years. SCF programs decouple the moment a supplier receives payment from the buyer making that payment; a bank acts as a bridge between the two and provides financing to enable suppliers to be paid faster than usual. Moreover, by using the superior credit quality of the buyer, the supplier's cost of funds is lower than would ordinarily be possible.

But companies in developing countries often face greater challenges than their counterparts in developed markets when it comes to accessing finance, including SCF. While global banks, including Citi, have relationships with thousands of suppliers in emerging markets, there are necessarily limits to the scale of the support they can provide, especially to SMEs.

It is in such situations that multilateral agencies (MLAs) and development finance institutions (DFIs) can play a crucial role. These highly specialized institutions, established by one or more sovereign governments, are mandated to support the public policy of their owners. In developing markets, these goals include promoting economic and social development, reducing poverty and improving living conditions, addressing climate change, increasing financial inclusion, enhancing governance standards and building market capacity, supporting infrastructure improvements, and facilitating and expanding cross-border trade.

Critical Risk Mitigation

Many MLAs and DFIs invest directly in private sector projects in low- and middle-income countries to promote job creation and sustainable economic growth, leveraging the creditworthiness derived from their sovereign support to access the international capital markets and provide financing on competitive terms. But these institutions also play a critical risk mitigation and support function, enabling banks and other financial institutions to lend and provide solutions such as SCF to companies in developing markets that would otherwise be limited in scale.

⁶ International Chamber of Commerce (ICC), "[Credit Risk in Trade, Supply Chain and Expert Finance Back to Pre-Pandemic Levels, ICC Confirms](#)," October 19, 2022.

Inflationary pressures and rising interest rates are putting additional pressure on suppliers' working capital. To prosper in this new environment, suppliers — especially in developing economies — will need greater assistance. Support from MLAs and DFIs, especially regarding their ability to amplify the efforts of the private sector, will therefore become more important. Many institutions have an explicitly countercyclical mandate: They increase their activity as macroeconomic and financial conditions become tougher for the companies they target. MLAs and DFIs are already stepping up their involvement and expanding their balance sheets given today's challenges, while carefully managing their risk to maintain their triple-A credit ratings.

While MLAs and DFIs can do much to shore up global trade, they need to leverage the capabilities, networks, capital, and distribution capabilities of global banks with ambitions to expand their engagement with companies that have traditionally been challenging to finance due to credit ratings or market risk. Citi acts as a counterparty to MLAs and DFIs, supporting their access to debt capital markets and providing a broad range of solutions around treasury, trade, security services, and markets. Citi also leverages these institutions' risk defeasance solutions (such as grants, guarantees, and co-lending structures) to create capacity and enable lending to the private sector, financial institutions, sovereigns, and state-owned enterprises.

While the capabilities of MLAs and DFIs will be essential to many developing countries as economic conditions worsen, their commitment to longer-term economic and social development is equally important. Finance linked to efforts to strengthen the ESG characteristics of companies in developing countries is critical in this regard. All MLAs and DFIs have made commitments to embed ESG criteria in their lending — aligning with the UN Sustainable Development Goals (SDGs) and the Paris Agreement on climate change — and many are rapidly transitioning their loan portfolios.

There is a \$2.5 trillion average annual funding gap for the world to achieve its 2030 SDG agenda.⁷ MLAs and DFIs will be instrumental in helping to bridge that gap — and SCF can play a role in helping institutions to achieve their ESG targets.

SCF (and similar solutions such as dynamic discounting) can be tailored to reward suppliers that meet specific ESG criteria with discounts on their cost of funds. Independent providers of sustainability assessments are used to evaluate suppliers' performance, with specific ESG targets (usually linked to UN SDG criteria) established for each supplier depending on their characteristics. ESG-linked SCF programs help corporates to manage and mitigate their ESG risks by finding ways to improve ESG performance throughout their supplier ecosystems. With the support of MLAs and DFIs, banks can inject liquidity at the grassroots level via ESG-linked SCF programs, helping SMEs and last-mile suppliers in developing countries strengthen their working capital and their ESG credentials.

⁷ United Nations, "[Citing \\$2.5 Trillion Annual Financing Gap During SDG Business Forum Event, Deputy Secretary-General Says Poverty Falling Too Slowly](#)", September 25, 2019.

Case Study: British International Investment

Countercyclical Strategy Swings Into Action



Admir Imami

Investment Director, Head of Trade & Supply Chain Finance
British International Investment plc

British International Investment (BII) — formerly known as CDC Group — is the U.K.'s development finance institution. It leverages its experience of impact investing and a deep-rooted knowledge of the markets in which it invests to solve global development challenges by deploying flexible capital to support private sector growth and innovation. One way it does this is by supporting financing to last-mile suppliers.

“Working with global banks, we have a toolbox we can use to achieve these objectives,” explains Admir Imami, Director and Head of Trade and Supply Chain Finance at BII. “Different banks need different things: Some simply need liquidity but for others credit guarantees and risk participations are important. Whatever the need, the goal is to enable financing to those last-mile suppliers, which are the foundation of any sustainable economy, but which often have limited access to working capital or trade facilities.”

To this end, BII has a \$100 million risk sharing facility for supply chain finance with Citi, enabling the bank to target SME suppliers in Africa, as well as boosting Citi's volumes in the region by up to \$400 million. BII also operates the Trade Access Program, which directly funds SMEs and trade intermediates, such as AgriTech; FinTechs; and alternative trade financiers whose technological and digital solutions help BII to reach much smaller borrowers that are part of local supply chains. “It's important that we have the tools to target both ends of the value chain,” says Imami.

As a patient, long-term investor, BII has a deliberately countercyclical strategy with the objective of providing greater stability and certainty to supply chains. During challenging periods, such as the COVID-19 pandemic or today's unsettled economic environment, it seeks to extend its partnerships with global banks and other institutions by increasing its provision of risk mitigation products.

One challenge in the current environment is that many banks' limits for particular countries or counterparties have remained the same while inflation has raised prices, increasing working capital requirements for SMEs. As a result, without BII's support, fewer imports could be financed. “We aim to provide greater comfort to providers so that they can increase their limits and do more to support suppliers in developing countries (and especially in countries with a higher risk profile),” says Imami.

Many suppliers also now find they need to allow for longer lead times — and therefore longer financing periods — given shipping delays and resource constraints. This further increases SMEs' working capital requirements. Again, BII endeavors to mitigate risk so that banks and other providers have sufficient comfort to deploy their working capital tools.

A Sustainable Development Agenda

BII is committed to inclusive and sustainable development and specifically targets SMEs that are led by women or operate in sectors that support a response to climate change. “Again, our objective is to help our partners in the financial sector to boost their limits and risk appetite for these companies so that these SMEs have competitive access to credit for trade,” says Imami. “The program is extremely flexible, so banks can decide when they need to use us and when they don't.”

Most recently, BII has targeted companies in the food value chain in an effort to improve food security in developing countries by supporting food imports and distribution throughout Africa in the wake of higher food prices and uncertainty in the global agriculture industry. In March 2022, BII also announced support for the implementation of the African Continental Free Trade Area, which is the largest free trade area in the world, encompassing 54 member states. It is expected to lift 30 million people out of extreme poverty, create jobs, and provide new commercial opportunities for businesses across Africa.

BII seeks to support trade because it believes it is a critical way to create modern, stable, and flourishing economies. However, economic growth should not come at the cost of environmental or social progress, according to Imami. “Our aspiration is to uphold the environment and social (E&S) agenda across all of our investments by applying robust environmental and social standards as set out in our Policy on Responsible Investment,” he says. BII monitors its trade book and pays particular attention to high-risk commodities.

Applying E&S standards can be difficult in supply chain finance because transaction tenures are short and transaction volumes are high. It is particularly challenging when considering complex nuanced risks like labor and human rights.

BII works with its financing partners to enhance their E&S practices, by providing either training or technical support to its partner banks and FinTechs so that their trade teams can better identify and manage ESG risks. “For example, in the last year, we have run two training programs for our trade partner banks: a general E&S training to help trade teams understand how to identify and manage E&S risks in their transactions and a second to help trade teams understand the risks associated with gender-based violence and harassment in their transactions with the ready-made garment sector in Bangladesh,” says Imami. “Using this training and support, partner banks can put in place the systems, policies, and processes to promote strong ESG practices and manage environmental and social risks through their supply chain and be selective about the suppliers that they in turn finance.”

Case Study: European Bank for Reconstruction and Development

Achieving Net Zero in Supply Chains: A Major Challenge



Paolo Monaco

Director, Financial Products - SME Finance & Development
European Bank for Reconstruction and Development (EBRD)

Note: The contents of this publication reflect the opinions of the individual author and do not necessarily reflect the views of the EBRD.

While not the only challenge, addressing climate change is one of the biggest challenges of our times. The enormity and urgency of the task is increasingly coming into focus for policy makers and business leaders alike. In the latest Global Risks Perception Survey (GRPS) by the World Economic Forum, respondents ranked “climate action failure” as the number one long-term threat to the world and the risk with potentially the most severe impacts over the next decade.⁸ Climate (in)action is connected to several other environmental (extreme weather and biodiversity loss) and societal (social cohesion erosion and livelihood crises) risks. This should put climate change mitigation at the center of attention for policymakers and business communities.

However, actions to combat climate change also need focus on areas that are harder to address. One of these is the decarbonization of supply chains. Emissions in supply chains (i.e., Scope 3 emissions) often exceed those created by a company’s own operations. In some industries, including food, fashion, and electronics, Scope 3 emissions represent multiples of Scope 1 and 2 emissions.⁹ However, to date, most firms have focused on emissions reductions that are within their direct remit. While shifting attention to supply chains will have a bigger impact, it will also require greater efforts — one challenge is supply chains’ spread across actors, industries, and jurisdictions. Another is the necessary change in the way many larger corporates work with suppliers: Cascading standards through a supply chain and ensuring adoption requires significantly more support and monitoring than many large corporates have been prepared to provide in the past. Although some supply chains are based on close collaboration with features such as pre-financing and suppliers’ training, many are characterized by a more hands-off approach, in which technical requirements and pricing expectations are passed down along the chain, with little visibility at the buyer’s level of the standards by which inputs are actually produced.

Pressure from regulators and consumers to adopt more sustainable standards is also increasing, as awareness of supply chain-related issues gain wider public attention. Initiatives in large consumer markets can have ramifications for producers globally. For example, as the European Union (EU) is one of the largest trading partners globally, its new policy initiatives will put pressure on larger buyers, and hence their suppliers, to improve ESG standards. Two initiatives stand out: (1) the introduction of the Carbon Border Adjustment Mechanism (CBAM), which internalizes carbon cost into goods produced outside the EU; and (2) the new upcoming Directive on Corporate Sustainability Due Diligence, which establishes a due diligence duty to address negative human rights and environmental impacts in a company’s own operations, as well as their value chains.

Therefore, access to lucrative markets with (potential) price premiums will increasingly depend on the incorporation of sustainability considerations into production processes. The resulting requirements in terms of adoption by multinational companies (MNCs) will lead to a commensurate increase in requirements for SMEs to integrate into global value chains (GVC).

⁸ World Economic Forum, *The Global Risks Report 2022 17th Edition*, January 2022.

⁹ World Economic Forum, *Net-Zero Challenge: The Supply Chain Opportunity*, Insight Report with Boston Consulting Group, January 2021.

This puts increasing responsibility on buyers to know who their suppliers are and how they operate, reaching into deeper tiers of their own supply chain. For many products, supply chains consist of a large number of smaller, specialized companies. In the pursuit of cheaper production costs, over the past 30 years, many of these suppliers have been de-localized to emerging and developing economies, where regulation and monitoring with regards to production standards have traditionally also been less stringent. However, it is exactly those suppliers that tend to struggle more with the adoption of better standards. In the context of supply chains, this puts more onus on buyer requirements to effect change.

SMEs and emerging markets are lagging when it comes to the adoption of ESG standards

On a global scale, representative data about the extent to which companies, in particular SMEs, apply ESG standards is lacking. However, some selective evidence exists, especially regarding environmental standards and carbon emissions reduction. First, firms need to know what they emit in order to identify the best way to reduce those emissions, but awareness tends to be low among SMEs. A recent survey of business customers by NatWest in the U.K. suggests that close to 90% of SMEs are unaware of their carbon emissions.¹⁰ Similarly, a survey by the Turkish Enterprise and Business Confederation (TÜRKONFED) found that 77% of Turkish suppliers who participated do not measure their carbon footprint and those who do are mainly large companies.¹¹ Typically, the know-how around decarbonization and the adoption rate for green technologies is lower in emerging markets. This means that a huge number of businesses are only at the very beginning of the journey.

Even when firms are aware, taking action is not straightforward. Another survey, of mainly U.S. and U.K. businesses, suggests that key reasons for delaying climate action are a lack of skills, funding, and time.¹² These constraints tend to be even stronger in emerging markets. For instance, the sixth round of the Business Environment and Enterprise Performance Survey (BEEPS VI) — conducted by the European Bank for Reconstruction and Development (EBRD), European Investment Bank (EIB), and World Bank Group (WBG) — suggests that even those firms located in emerging markets that are good at data collection (in the Eastern neighborhood region or the Western Balkans, for example) struggle to translate this monitoring activity into specific targets.¹³ When it comes to the actual application of ESG standards, firms in middle-income economies performed significantly worse (especially on environmental and governance metrics) than peers in Southern Europe.

¹⁰ NatWest Group, "[9 out of 10 SMEs Don't Know Business Carbon Emissions](#)," March 21, 2022.

¹¹ TÜRKONFED and Konrad-Adenauer-Stiftung Turkey, *Risks, Opportunities and Expectations in Green Transition*, September 2022.

¹² SME Climate Hub, "[New Data Reveals Two-Thirds of Surveyed Small Businesses Concerned Over Navigating Climate Action](#)," February 23, 2022.

¹³ European Bank for Reconstruction and Development (EBRD) and European Investment Bank (EIB), *Business Resilience in the Pandemic and Beyond: Adaptation, Innovation, Financing and Climate Action from Eastern Europe to Central Asia*, 2022.

Building more dependable relationships with suppliers is a prerequisite for improving standards

Against this backdrop, and with increasing responsibility for raising sustainability standards, buyers face a challenging task of fostering awareness, improving monitoring across the supply chain, and encouraging suppliers to adopt better standards. Therefore, disseminating higher ESG standards in supply chains requires major efforts from both buyers and suppliers. Stable buyer relationships that encourage improvement are more likely to evolve when buyers commit to suppliers through training, capacity-building, or financial support for implementation of standards and/or certification. Therefore, supplier programs that provide technical assistance and capacity-building can be important contributors to productivity improvements and standard raising at the supplier level.¹⁴

Access to finance is a key factor in facilitating the adoption of ESG standards in emerging markets

However, access to finance is crucial to be able to upgrade machinery, implement energy efficiency measures, and shift to less carbon-intensive technologies. This naturally disfavors SMEs that lack the structured credit history and collateral to access finance, including short-term finance to plug the regular working capital shortfalls that are often associated with supplying to MNCs that are able to leverage their stronger negotiating positions to dictate longer payment terms.

An estimated \$25 trillion to \$50 trillion of the more than \$100 trillion investment needed globally to deliver net zero supply chains will have to be directed towards SMEs.¹⁵ This represents a substantial challenge in terms of market access for suppliers and an ambitious risk appetite for financial institutions. This challenge is even greater in emerging markets, where SMEs face difficulties in accessing finance at reasonable terms.

In the region where EBRD operates, around half of SMEs are credit constrained, compared to 25% of larger firms, according to the BEEPS VI survey.¹⁶ In some of these economies, nearly four out of five SMEs report issues obtaining credit, owing to high interest rates and collateral requirements. This paints a particularly stark picture that also applies to working capital needs. For instance, the same survey shows that on average, firms only finance around 10% of their working capital through banks. Customer or supplier credits are also a potential source, but their use varies widely from, for instance, 2.9% of businesses in Uzbekistan to more than 50% in Serbia. Therefore, making external sources of funding more accessible or reducing the cost of existing sources is a central objective for improving access to finance for SMEs.

¹⁴ International Trade Centre (ITC) and European University Institute (EUI), *Social and Environmental Standards: Contributing to More Sustainable Value Chains*, September 22, 2016.

¹⁵ BCG and HSBC, [Delivering Net Zero Supply Chains](#), October 2021.

¹⁶ EBRD invests in 36 economies across Central and South-eastern Europe, Eastern Europe and the Caucasus, Central Asia, the Southern and Eastern Mediterranean and Turkey. A credit-constrained firm is defined as a firm that says it needs a loan but was either rejected or discouraged from applying. See EBRD, "Business Environment and Enterprise Performance Survey VI, 2018-20 (BEEPS VI)," October 2020.

Again, scrutiny from policymakers regarding the alleviation of pressures on suppliers is increasing. In 2013, a Late Payments Directive came into force in the EU, capping days payable to 30 days for public entities and 60 days for private businesses. However, globally, the power balance between large buyers and small suppliers often still favors the former. In addition to this, the compounding crises of the COVID-19 pandemic and the war in Ukraine have placed an enormous strain on supply chains, with companies in nearly every country affected. A shift from “just in time” to “just in case” is leading to higher inventory levels, which in turn means that more working capital is tied up.¹⁷ The SME credit shortfall also weakens the ability of firms to comply with international sustainability standards turning sustainable supply chain finance into an important instrument to address various challenges.

The challenges are clear

If we want to successfully tackle the issue of improving ESG standards across the globe, it is paramount to raise the necessary funding, help buyers to re-think how they engage with their supply chains, and support SMEs to adopt better practices. Therefore, expanding the reach of supply chain finance opportunities and embedding sustainability targets into these structures could be a powerful way to address the challenges highlighted in this report.

How Can International Financial Institutions (IFIs) Help?

There are several ways in which international financial institutions (IFIs) can support the roll-out of sustainable supply chain finance (SCF) solutions to reach smaller suppliers in emerging and developing markets. Combining their knowledge of emerging markets with their long-standing experience in outcome-based and blended financing, IFIs can be a major driver of encouraging private sustainability-linked investment in less developed markets. More specifically, IFIs can help expand the access to sustainable supply chain finance solutions in emerging markets in three major ways: by using blended finance to mitigate risks and encourage private investment, by facilitating legal and regulatory reforms, and by encouraging the use of outcome-based financing mechanisms to incentivize the adoption of ESG standards in a credible way.

Encouraging private investment through risk mitigation

Supply chain financing is a promising tool for financing small businesses, but concrete data on the extent of available funding is difficult to obtain. The most recent estimates by BCR, a market intelligence provider, suggest that SCF volumes have increased to \$1,803 billion globally in 2021, compared to \$330 billion in 2016. Activity is skewed toward Europe and North America, whereas in developing markets, SCF solutions are often only at a nascent stage or completely absent: The share of funding available in Africa and Asia represents only 20% of the global total.¹⁸ There is significant potential to expand this kind of financing to developing markets, but private investors often shy away due to the uncertainty that investments in these markets usually entails. At the same time, the ability to access a stable funding solution for working capital needs can be transformative in these economies, where access to finance tends to be expensive and operating conditions more volatile.

¹⁷ BCR, *World Supply Chain Finance Report 2022*, April 2022.

¹⁸ Ibid.

Working with finance providers, IFIs can provide liquidity or take on risk in a way that allows banks and other SCF providers to expand their programs, both to new clients and new markets. By using blended finance options, such as first-loss risk covers and similar risk mitigation mechanisms, IFIs can mobilize private capital flows and facilitate investments in emerging markets. They can do so unilaterally, or in cooperation, by sharing risk together where market circumstances and country coverage are conducive. IFIs can also reduce uncertainty by sharing expertise, which is often more readily accepted coming from a non-commercial organization seen as impartial. On the one hand, they can introduce local stakeholders to the concept of SCF where it is not yet present to encourage take-up. On the other hand, they can facilitate the entrance of new finance providers by sharing their knowledge of the market.

Facilitating legal and regulatory reforms required for supply chain financing

In order for SCF solutions to thrive, it is important to have a robust legal framework for secured transactions and to adjust regulation in order to realize the full benefits of SCF. For instance, secured transaction laws that allow for the collateralization of movable assets, a modern legal framework for factoring, and effective enforcement mechanisms in case of default support the implementation of SCF. EBRD, as well as a number of other IFIs such as the World Bank, have worked in developing countries to support legal reform. In a more recent example, EBRD has supported governments in Georgia and Uzbekistan to update their legal frameworks for factoring to reflect international best practice and provide a more predictable legal and regulatory environment that would encourage uptake. In addition, the availability of e-invoicing and e-signatures can make the reverse factoring process more efficient. For reverse factoring in particular, it is also crucial that the banking regulator recognizes the difference in risk profile between payables finance based on the creditworthiness of a buyer compared to traditional lending products, and capital and provisioning requirements should be adjusted accordingly.¹⁹

These activities can accompany advocacy to raise awareness among market participants, particularly SMEs. In markets where SCF is absent or at a nascent stage, outreach to stakeholders and facilitation of dialogue around this new product can be important factors to help increase confidence and uptake. IFIs such as EBRD can leverage their existing networks among banks, business associations, SMEs, government authorities and other stakeholders, domestically and internationally, to facilitate cooperation and transfer of knowledge and know-how. Activities can include trainings, issuing of guidelines, advisory services, and providing a framework for cooperation among market participants. Reaching out to SMEs is particularly important, as they tend to show less awareness of different financing products, and targeted awareness-raising is key to build confidence in a new product. Based on decades of advisory work with SMEs through its Advisory for Small Business program, EBRD has built extensive outreach capacity to be able to engage with SMEs, either directly, or in partnership with local business associations.

¹⁹ International Finance Corporation (IFC), *Supply Chain Finance by Development Banks and Public Entities*, 2021.

Embedding ESG objectives into supply chain financing

Based on their extensive experience in linking investments with impact, IFIs can also contribute to turning SCF into outcome-based financed mechanisms that help deliver on ESG targets. Climate change mitigation is a priority objective that many IFIs pursue, and they have built a track record of incorporating greening objectives into investment activities over decades. EBRD, for instance, set up a department dedicated to energy efficiency improvements in 1994 and added a mandate to specifically combat climate change in 2005-06. Since then, the bank has built extensive experience in helping clients, large and small, to green their operations. The EBRD's focus on greening was further strengthened by the launch of the Green Economy Transition approach in 2016. Under this approach, the EBRD is committed to achieving a green finance ratio of more than 50% by 2025 and aligning its activities with the Paris Agreement by the end of 2022.²⁰

In the context of SCF, buyers can act as an important anchor for incentivizing suppliers to improve their carbon footprints. IFIs can support buyers in re-designing their supplier programs in a way that sets greening targets in line with robust frameworks (such as the Science Based Targets initiative). However, there are challenges: To begin with, buyers often lack the kind of data from their supply chains that would allow them to identify high-emissions sources and set targets for abatement. In addition, simply setting a target will likely not be sufficient to induce change. Although strong advocacy and governance mechanisms at the buyer level can help, many suppliers — especially SMEs — will need support to implement change. They often struggle to identify the most promising technologies to invest in and to set up an internal management system for the monitoring and improvement of their carbon footprint on a continuous basis.

To address these challenges, EBRD has partnered with Citi to incorporate sustainability targets into a pilot SCF program in Turkey. Under this program, the buyer, Citi, and EBRD agree on appropriate key performance indicators (KPIs) for the greening of the buyer's supply chain. Based on its extensive experience in providing advisory services for SMEs, EBRD is building a dedicated advisory team to help suppliers achieve their individual greening targets. Advisors will be able to review existing processes to pinpoint sources of high emissions, advise on required investments and appropriate technologies, and help build internal green management systems. To further incentivize change at a time when carbon emissions are typically not priced into production costs, the SCF incorporates a pricing mechanism whereby the achievement of greening milestones results in a discount on the supplier's SCF interest margin. In this case, we combine stricter requirements with dedicated support and incentives to achieve an overall better and more sustainable outcome. However, applying selected elements of this approach may be enough to bring about change, depending on the specific circumstances of a supply chain.

²⁰ EBRD, *Green Economy Transition Approach 2021-2025*, 2020.

The way forward

Working in partnership with private finance providers and leveraging public funding and IFI experience, EBRD aims to scale up its engagement significantly over the coming years. Doing so will require developing a better understanding of the current SCF situation in emerging markets and identifying key obstacles to the development of this product. The ultimate aim is to find a scalable and replicable model that will enable the expansion of sustainable supply chain financing to other countries, buyers and suppliers, including those in deeper tiers of the supply chain. Given IFIs' track record of supporting the development of new funding mechanisms and the adoption of sustainable practices, they are uniquely positioned to help market players in the SCF space expand to new markets, reach new clients, and do so in a way that addresses a core challenge in today's world: achieving net zero.

Case Study: International Finance Corporation

How IFC Makes Supply Chain Finance Work for Developing Markets



Nathalie Louat

Director, Trade and Supply Chain Finance
International Finance Corporation

International Finance Corporation (IFC) is the private sector investment arm of the World Bank Group (WBG) and supports the organization's goals of ending extreme poverty and boosting shared prosperity. IFC's mandate is to advance economic development and improve the lives of people — creating jobs and raising living standards — by encouraging and supporting the growth of the private sector in emerging markets.

To this end, IFC established a Global Trade Finance Program (GTFP) in 2004 to extend and complement banks' capacity to deliver trade financing by providing risk mitigation in new or challenging markets where trade lines are constrained. Over the past 18 years, IFC has issued guarantees covering over 68,000 transactions totaling more than \$66.5 billion in over 100 countries.²¹ Its focus is on low income and fragile countries: Over 70% of the IFC's investments go to the world's poorest economies.

In 2012, IFC launched its Global Trade Supplier Finance Program (GTSF) to provide short-term, post-shipment capital to suppliers in emerging markets immediately after the buyer agrees to pay. IFC's GTSF program has disbursed about \$3 billion to almost 1,000 suppliers across 14 countries. The average invoice size financed is approximately \$13,000, reflecting the IFC's commitment to support SMEs globally.

A Growing Need

There is a consensus among market participants that demand for supply chain finance (SCF) is increasing, especially in emerging markets. "There are several reasons for this, including COVID-19-related supply chain disruption, complications resulting from the war in Ukraine, and the worsening macroeconomic environment — including accelerating inflation, which will increase production costs and erode real incomes — across emerging markets," explains Nathalie Louat, Director, Trade and Supply Chain Finance at IFC.

At the same time, many international and domestic banks are seeking ways to further expand their engagement with companies that have traditionally been challenging to finance due to credit ratings or market risk. SMEs, which account for around 90% of all global companies according to IFC, fit this description — especially those in developing countries. More than half of the SMEs in Africa, for example, currently do not have access to finance.

"That's where we step in," says Louat. "Our priority is to support SMEs and last-mile suppliers, and we bring various parties together to mitigate risk and facilitate finance." As trade receivables account for 40% of their assets on average, deferred credit payment terms are the largest driver of financial uncertainty for SMEs. "Supply chain finance can address this uncertainty and provide a financing solution for SMEs and last-mile suppliers," adds Louat.

²¹ IFC, "[Global Trade Finance Program](#)," accessed November 28, 2022.

IFC encourages and facilitates SCF in three ways:

1. Working with regulators alongside the World Bank to help countries institute effective legal and regulatory frameworks for SCF and digitalization. In several countries, IFC has supported the creation of national supply chain finance programs by working with central banks.
2. Providing support for capacity building by offering technical assistance to banks as well as directly to suppliers. IFC has a SCF advisory program to help banks develop solutions (including onboarding, if required) and organizes workshops for SMEs.
3. Partnering with institutions to share the risk of SCF portfolios to help drive volumes. This enables global banks to expand their emerging markets financing while increasing IFC's ability to reach small suppliers in developing economies.

Aligning SCF with IFC's Evolving Development Agenda

Sustainability has become a more important focus for the WBG in recent years. Its climate change action plan aligns with the Paris Agreement by bolstering efforts to promote biodiversity, improve access to renewable energy sources and clean water, and support a just transition to a low-carbon economy. In line with the WBG's green, resilient, and inclusive development approach, IFC promotes three critical goals:

1. The deployment of energy-efficient technologies that can cut carbon emissions in emerging markets and promote sustainable operations and supply chains.
2. The development of sustainable commodity supply chains. IFC does this by partnering with the Banking Environment Initiative to support banks in directing capital towards environmentally and socially sustainable finance.
3. The promotion of greater gender inclusion, by supporting companies that are owned or led by women.

IFC uses SCF and trade finance to advance these objectives by supporting price discounts to suppliers that implement strategies that align with its goals. "For instance, we support supply chain finance linked to sustainability or gender so that supply chains begin to reflect those priorities," says Louat. "The first step is to work with partner banks to identify the characteristics of the SMEs they work with so that, for example, women-led organizations can be identified and targeted with trade and supply chain finance that supports their growth."

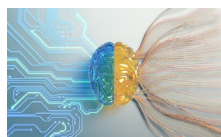
IFC works with Citi on a number of SCF programs. For example, IFC has partnered with Citi to finance suppliers in developing countries selling herbs and spices to McCormick & Company. The solution, which is part of IFC's GTSF program, rewards suppliers with preferential finance rates in return for meeting criteria relating to labor conditions, health and safety practices, crop management, environmental impact, farmer resilience, and women's empowerment; an independent provider of sustainability assessments is used to evaluate suppliers' performance.

“Partnering with Citi adds value to our Trade Supplier Finance Program, as its network aligns with the supplier base we are targeting in order to achieve our development objectives,” says Louat. “And Citi’s relationships and ability to broadly distribute supply chain finance assets enables us to increase the scale of programs and ensure an attractive cost of finance and the widest possible benefits for SMEs and last-mile suppliers in developing countries.”

As our premier thought leadership product, **Citi Global Perspectives & Solutions (Citi GPS)** is designed to help readers navigate the most demanding challenges and greatest opportunities of the 21st century. We access the best elements of our global conversation with senior Citi professionals, academics, and corporate leaders to anticipate themes and trends in today's fast-changing and interconnected world.



All Citi GPS reports are available on our website www.citi.com/citigps



Disruptive Innovations IX
Ten More Things to Stop and Think About
December 2022



Antimicrobial Resistance
The Silent Pandemic
December 2022



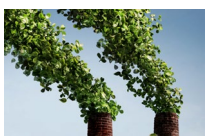
Climate Finance
Mobilizing the Public and Private Sector to Ensure a Just Energy Transition
November 2022



Food Security
Tackling the Current Crisis and Building Future Resilience
November 2022



Energy Transition: Vol 1
Mixed Momentum on the Path to Net Zero
November 2022



Energy Transition: Vol 2
Building Bridges to Renew Momentum
November 2022



China's Inward Tilt
The Pursuit of Economic Self-Reliance
October 2022



Philanthropy v2.0
Reinventing Giving in Challenging Times
October 2022



Food and Climate Change
Sustainable Foods Systems for a Net Zero Future
July 2022



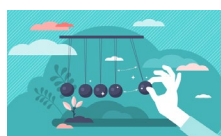
Home of the Future 2
PropTech – Towards a Frictionless Housing Market?
June 2022



Global Supply Chains
The Complexities Multiply
June 2022



Space
The Dawn of a New Age
May 2022



Investing for Outcomes
Why Impact Is Relevant Beyond Impact Investing
April 2022



Metaverse and Money
Decrypting the Future
March 2022



Global Art Market Disruptions
Pushing Boundaries
March 2022



Women Entrepreneurs
Catalyzing Growth, Innovation, and Equity
March 2022



Eliminating Poverty
*The Importance of a
 Multidimensional Approach*
 February 2022



Global Supply Chains
*The Complicated Road Back
 to "Normal"*
 December 2021



**Philanthropy and the Global
 Economy**
*Opportunities in a World of
 Transition*
 November 2021



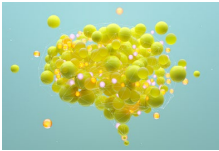
Education: Learning for Life
*Why L&D is the Next Frontier
 in Global Education*
 November 2021



Home of the Future
Building for Net Zero
 October 2021



Global Carbon Markets
*Solving the Emissions Crisis
 Before Time Runs Out*
 October 2021



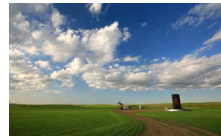
Disruptive Innovations VIII
*Ten More Things to Stop and
 Think About*
 October 2021



Holistic Digital Policy
*Nation States Must Lead in
 Building Equitable Human-
 Centric Digital Economies*
 October 2021



Biodiversity
*The Ecosystem at the Heart of
 Business*
 July 2021



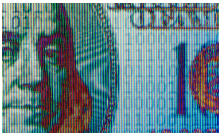
Natural Gas
*Powering Up the Energy
 Transition*
 July 2021



Technology at Work v6.0
*The Coming of the Post-
 Production Society*
 June 2021



**Hard to Abate Sectors &
 Emissions**
The Toughest Nuts to Crack
 May 2021



Future of Money
*Crypto, CBDCs and 21st
 Century Cash*
 April 2021



Systemic Risk
*Systemic Solutions for an
 Interconnected World*
 April 2021



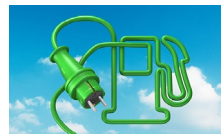
**The Global Art Market and
 COVID-19**
Innovating and Adapting
 December 2020



Bitcoin
At the Tipping Point
 March 2021



Financing a Greener Planet
Volume 1
Volume 2
 February 2021



Electric Vehicle Transition
 February 2021



Investment Themes in 2021
 January 2021



**Education: Fast Forward to
 the Future**
 October 2020

If you are visually impaired and would like to speak to a Citi representative regarding the details of the graphics in this document, please call USA 1-888-800-5008 (TTY: 711), from outside the US +1-210-677-3788

IMPORTANT DISCLOSURES

This communication has been prepared by Citigroup Global Markets Inc. and is distributed by or through its locally authorised affiliates (collectively, the "Firm") [E6GYB6412478]. This communication is not intended to constitute "research" as that term is defined by applicable regulations. Unless otherwise indicated, any reference to a research report or research recommendation is not intended to represent the whole report and is not in itself considered a recommendation or research report. The views expressed by each author herein are his/ her personal views and do not necessarily reflect the views of his/ her employer or any affiliated entity or the other authors, may differ from the views of other personnel at such entities, and may change without notice.

You should assume the following: The Firm may be the issuer of, or may trade as principal in, the financial instruments referred to in this communication or other related financial instruments. The author of this communication may have discussed the information contained herein with others within the Firm and the author and such other Firm personnel may have already acted on the basis of this information (including by trading for the Firm's proprietary accounts or communicating the information contained herein to other customers of the Firm). The Firm performs or seeks to perform investment banking and other services for the issuer of any such financial instruments. The Firm, the Firm's personnel (including those with whom the author may have consulted in the preparation of this communication), and other customers of the Firm may be long or short the financial instruments referred to herein, may have acquired such positions at prices and market conditions that are no longer available, and may have interests different or adverse to your interests.

This communication is provided for information and discussion purposes only. It does not constitute an offer or solicitation to purchase or sell any financial instruments. The information contained in this communication is based on generally available information and, although obtained from sources believed by the Firm to be reliable, its accuracy and completeness is not guaranteed. Certain personnel or business areas of the Firm may have access to or have acquired material non-public information that may have an impact (positive or negative) on the information contained herein, but that is not available to or known by the author of this communication.

The Firm shall have no liability to the user or to third parties, for the quality, accuracy, timeliness, continued availability or completeness of the data nor for any special, direct, indirect, incidental or consequential loss or damage which may be sustained because of the use of the information in this communication or otherwise arising in connection with this communication, provided that this exclusion of liability shall not exclude or limit any liability under any law or regulation applicable to the Firm that may not be excluded or restricted.

The provision of information is not based on your individual circumstances and should not be relied upon as an assessment of suitability for you of a particular product or transaction. Even if we possess information as to your objectives in relation to any transaction, series of transactions or trading strategy, this will not be deemed sufficient for any assessment of suitability for you of any transaction, series of transactions or trading strategy.

The Firm is not acting as your advisor, fiduciary or agent and is not managing your account. The information herein does not constitute investment advice and the Firm makes no recommendation as to the suitability of any of the products or transactions mentioned. Any trading or investment decisions you take are in reliance on your own analysis and judgment and/or that of your advisors and not in reliance on us. Therefore, prior to entering into any transaction, you should determine, without reliance on the Firm, the economic risks or merits, as well as the legal, tax and accounting characteristics and consequences of the transaction and that you are able to assume these risks.

Financial instruments denominated in a foreign currency are subject to exchange rate fluctuations, which may have an adverse effect on the price or value of an investment in such products. Investments in financial instruments carry significant risk, including the possible loss of the principal amount invested. Investors should obtain advice from their own tax, financial, legal and other advisors, and only make investment decisions on the basis of the investor's own objectives, experience and resources.

This communication is not intended to forecast or predict future events. Past performance is not a guarantee or indication of future results. Any prices provided herein (other than those that are identified as being historical) are indicative only and do not represent firm quotes as to either price or size. You should contact your local representative directly if you are interested in buying or selling any financial instrument, or pursuing any trading strategy, mentioned herein. No liability is accepted by the Firm for any loss (whether direct, indirect or consequential) that may arise from any use of the information contained herein or derived herefrom.

Although the Firm is affiliated with Citibank, N.A. (together with its subsidiaries and branches worldwide, "Citibank"), you should be aware that none of the other financial instruments mentioned in this communication (unless expressly stated otherwise) are (i) insured by the Federal Deposit Insurance Corporation or any other governmental authority, or (ii) deposits or other obligations of, or guaranteed by, Citibank or any other insured depository institution. This communication contains data compilations, writings and information that are proprietary to the Firm and protected under copyright and other intellectual property laws, and may not be redistributed or otherwise transmitted by you to any other person for any purpose.

IRS Circular 230 Disclosure: Citi and its employees are not in the business of providing, and do not provide, tax or legal advice to any taxpayer outside of Citi. Any statements in this Communication to tax matters were not intended or written to be used, and cannot be used or relied upon, by any taxpayer for the purpose of avoiding tax penalties. Any such taxpayer should seek advice based on the taxpayer's particular circumstances from an independent tax advisor.

© 2023 Citigroup Global Markets Inc. Member SIPC. All rights reserved. Citi and Citi and Arc Design are trademarks and service marks of Citigroup Inc. or its affiliates and are used and registered throughout the world.

NOW / NEXT

Key Insights regarding the future of Supply Chains



INFRASTRUCTURE

Amid disruption and the uncertain geopolitical landscape, shifts in the geographical distribution of global production remain unclear. / [Although we expect some “re-shoring” to take place, most firms will likely seek increased geographical diversity among their suppliers and will prepare for worst-case scenarios.](#)



SUSTAINABILITY

There is a \$2.5 trillion average annual funding gap for the world to achieve its 2030 Sustainable Development Goal agenda. / [Multilateral agencies and development finance institutions will be instrumental in helping to bridge that gap.](#)



POLICY

The effects of rising prices, rising interest rates, and high inflation are impacting supply chains globally. / [In this current inflationary environment, addressing rising cost of goods sold is critical for suppliers while large corporates are concerned that customer credit profiles are weakening as margin compression strains profitability.](#)

