



Trade finance in the Mekong region

A study of Cambodia, the Lao People's Democratic Republic and Viet Nam

About the IFC

The International Finance Corporation – a member of the World Bank Group – is the largest global development institution focused on the private sector in emerging markets. It works in more than 100 countries, using its capital, expertise and influence to create markets and opportunities in developing countries.

About the WTO

The World Trade Organization is the international body dealing with the global rules of trade between nations. Its main function is to ensure that trade flows as smoothly, predictably and freely as possible, with a level playing field for all its members.

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Foreword

The expansion of trade depends on reliable, adequate and cost-effective sources of trade financing, which help to fill the time gap during which goods are produced, shipped and paid for. Trade finance is routinely supplied to exporters and importers by banks and other financial intermediaries, which mitigate the financial and payment risk involved in cross-border trade. While developed countries can often rely upon large and advanced economic sectors mobilizing sophisticated trade finance instruments, such as supply chain finance, significant shortages exist in developing countries. These shortages can have many reasons, both international (inflation, availability of correspondent banking relationships, country risk) and local (level of development and expertise of the financial sector, cost, access to finance by local firms).

To better understand the trade finance ecosystem in developing countries, the constraints to trade finance and gaps in provision, the International Finance Corporation (IFC) and the World Trade Organization (WTO) pledged in November 2021 to enhance their cooperation in this area. They engaged in a series of surveys aimed at examining the specific obstacles faced by lenders and borrowers in low-income regions. In

2022, the first study looked at the trade finance markets of the four largest economies of the Economic Community of West African States (Côte d'Ivoire, Ghana, Nigeria and Senegal, referred to as the ECOWAS-4).

This report focuses on trade finance in Cambodia, the Lao People's Democratic Republic and Viet Nam – the Mekong-3. It examines the characteristics of trade finance in these fast-growing markets, helping to quantify how much trade is supported by trade finance, at what cost and how much trade could grow further if obstacles to trade finance were reduced. The report offers insights into which solutions could be promoted, locally and internationally, for trade finance to be a driver of greater trade inclusiveness.

The IFC and the WTO are committed to further fostering of trade growth to support development outcomes, drawing on our knowledge and track record of mobilizing capital. We are thankful to the joint IFC–WTO team that produced this report and look forward to the findings and recommendations that will inform debates and decision-making across various stakeholders.



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Executive summary

Cambodia, the Lao People's Democratic Republic (PDR) and Viet Nam – referred to here as the Mekong-3 – have established themselves as one of the most dynamic and trade-led regions of the world. In 2022, the value of trade flows surpassed GDP in all three economies. The trade-to-GDP ratio was particularly high in Cambodia and Viet Nam at over 210 and 185 per cent, respectively – several times higher than the global average of 62 per cent. The value of total trade flows has tripled in Cambodia and Viet Nam and more than doubled in the Lao PDR in the past decade.

The rapid trade growth reflects a complex web of domestic and international factors. The integration into global supply chains has been a key driver of trade growth and development, underpinned by better export performance and a favourable environment for foreign direct investment. Cambodia and Viet Nam have also benefited from the relocation of production away from economies with higher manufacturing costs, trade diversion linked to trade conflicts between large countries and the fostering of foreign investment.

However, trade growth in Cambodia and Viet Nam has not been even. It has followed a two-speed trajectory, with exports from subsidiaries of foreign-owned firms outpacing exports from locally owned supply chains. Foreign investments, most notably in the electronics and garment sectors, have in the past decade shifted the structure and direction of imports and exports in favour of these products, towards large suppliers (China) and buyers (United States) who now jointly account for over 40 per cent of the region's total trade.

As a result, exports in a narrow set of activities controlled by foreign subsidiaries outpace exports from locally owned supply chains, for example in (agri-)food and fisheries, industrial parts and manufactures, where growth has also been strong and a source of economic diversification for these countries. Viet Nam's import and export product basket is the largest and most diversified, expanding recently into chemicals, machinery and electric batteries. Starting from a lower base, the respective import and export baskets of Cambodia and the commodity-oriented Lao PDR have been diversifying faster than Viet Nam's.

A question is the extent to which the local financial sector has contributed to the integration and internationalization prospects of the region. In 2023, the IFC conducted a survey of banks in the Mekong-3 and a second survey of hundreds of traders in Viet Nam to gather information on trade finance needed by exporters and importers. The surveys revealed that local trade finance is not only relatively scarcely used in the Mekong-3 but also segmented and traditional. In terms of size, coverage of trade, sector diversity and range of trade finance instruments, Viet Nam's trade finance market can be regarded as more advanced.

In 2022, Vietnamese banks supported 21 per cent of the country's exports and imports, with funds representing 22 per cent of the country's total banking assets. The local banking sector in Cambodia supported a much smaller share of the country's import-export operations, some 3 per cent of total trade, accounting for only 2.5 per cent of banks' total assets. These numbers are low – not only compared to developed country levels of 60-80 per cent but also relative to the coverage of trade recorded in other developing regions, such as West Africa.

Viet Nam's local trade finance market is estimated at US\$ 150 billion in value, about 100 times that of Cambodia, at US\$ 1.6 billion, even though the difference in trade flows is only 12 to 1. Data collected for the Lao PDR suggest that local trade finance supports an even smaller share of trade than Cambodia. Moreover, while the distribution of trade finance between imports and exports is relatively balanced in Viet Nam, with assets concentrating on intermediate goods and inputs, in Cambodia and the Lao PDR trade finance is mainly supplied for imports, notably goods for wholesale distribution and construction.

The segmentation of local trade finance markets in Viet Nam follows the dynamics of trade in reverse: high-growth and high-value exports of electronics and garments production tend to rely less on local trade finance. Local banks are more likely to support intra-regional trade than global trade operations. Lacking more evidence, the existence of alternative, foreign supply chain finance (SCF) arrangements provided by large multinational companies to their subsidiaries and

tier 1 suppliers may explain the limited share of trade finance provided by local banks. However, it is unlikely that local, lower-tier suppliers within foreign-controlled supply chains benefit from such SCF. This would be even more unlikely in the case of Cambodia and the Lao PDR.

Removing constraints to trade finance would significantly boost trade flows further and increase trade inclusiveness. Data collected from banks and traders surveyed in the Mekong-3 were analysed with the WTO Global Trade Model. According to the simulations for Cambodia and Viet Nam, increasing the coverage of trade by local trade finance by an additional 20 percentage points while reducing the cost of loans and letters of credit to international benchmarks would raise imports by more than 5 and 6 per cent, respectively, and raise exports by more than 8 and 9 per cent annually. This corresponds to annual increases in merchandise trade of more than US\$ 3.5 billion in Cambodia and US\$ 55 billion in Viet Nam.

Improving the coverage of trade by bank-intermediated finance holds the greatest potential to expand trade. The sectors delivering the largest contribution are textiles, wearing apparel and leather. The electronics sector plays a moderate role in this expansion owing to large shares of related-party trade (i.e. trade with subsidiaries of multinational enterprises and large conglomerates), which are less likely to use domestic trade finance. The trade partners that stand out as the largest beneficiaries of this scenario are China and East and Southeast Asia on the import side and Europe (for Cambodia) and North America, China and East Asia (for Viet Nam) on the export side.

Increasing the share of trade supported by local trade finance would require local supply and demand constraints be addressed. The surveys point to macroeconomic constraints weighing on both the demand and supply of trade finance, such as persisting disruptions to mobility and operations due to the impact of the COVID-19 pandemic, inflation and limited availability of low-cost funding. Structural constraints include the lack of information about new trade finance instruments, and for which technical and financial assistance is sought. High collateral requirements and onerous application processes are moreover highlighted by hundreds of traders as reasons for not approaching banks in Viet Nam.

Women find it more difficult than men to access trade finance. Only four in ten banks in the survey report that they provide trade finance to women-owned or led small and medium-sized enterprises (SMEs). The gender disparity

in access to trade finance appears more accentuated in Cambodia and the Lao PDR, where only 37 per cent and 33 per cent of banks, respectively, report allocating trade finance to women-owned or led SMEs, compared to 47 per cent in Viet Nam. However, over half the banks in the Mekong-3 do not track whether or not they provide trade finance to female entrepreneurs, which makes it difficult to capture fully the gender gap in accessing trade finance.

Only a small fraction of the banks surveyed fund climate-related trade activities. The share of banks in the Mekong-3 which report that they provide trade finance to climate-related trade activities is low. Only 11 and 29 per cent of the banks in Cambodia and Viet Nam, respectively, report that they provide trade finance to climate-related trade activities. Of the banks surveyed in the Lao PDR, none reports providing trade finance for this category of trade activity.

Harnessing trade opportunities through global value chains (GVCs) and expanding into new products will also require deeper and more diverse trade finance markets. The bank survey confirms the prevalence of traditional trade finance instruments (letters of credit and other guarantees, pre-export loans), routinely provided by nearly all banks involved in trade finance.

Short-term working capital lines are often used by importers and exporters as a substitute to more structured and documented trade finance instruments – particularly in Cambodia, where 40 per cent of total trade finance is provided in this form. Working capital loans are preferred for their flexibility but are also typically more expensive and accessible only to clients with sufficient land or building collateral.

Innovative trade finance instruments are still nascent: although a quarter of banks surveyed envisage expanding its provision within the next two years, SCF currently supplied by local banks in Cambodia and Viet Nam accounts only for 2 per cent of available trade finance. The potential for growth stems from the fact that, while SCF is provided by foreign banks to large subsidiaries of foreign firms for the export of finished products, the number of local producers of parts and components not involved in such arrangements but involved in international trade is growing.

In general, unlocking meagre cash resources trapped in those supply chains is a necessity for local firms – particularly SMEs – to survive, invest and move-up technologically within the value chain. However, many of them still do not have access to

trade finance, as exemplified by the low share of trade covered by trade finance. At best, some firms will have access only to expensive working capital.

Coordinated action by the corporate sector, financial institutions, national policymakers and international organizations could help to increase the uptake of trade finance in the Mekong-3. The most effective measures vary by country. In Viet Nam and to some extent Cambodia, they include: diversifying the range of trade finance instruments; strengthening the regulatory framework; broadening the local customer base for trade finance to SMEs; and improving banks' agility, risk management capacity and international relationships.

In Cambodia and the Lao PDR, the capacity of the local banking system to support the internationalization of the economy is more limited than in the case of Viet Nam. Actions in these two countries could focus on the expansion of traditional trade finance instruments such as letters of credit and basic capabilities of banks, without neglecting ways to promote the use of innovative instruments such as SCF to facilitate the integration of smaller, local producers into GVCs. Examples of successful engagements of development finance institutions in other countries in Asia suggest that progress towards these objectives is possible. Making data available to support decision-making, offering a modern and predictable legal framework on recourse for SCF creditors and providing for effective enforcement of rules for collateral could all significantly broaden access to trade finance in the Mekong-3.

SCF expansion is a priority given the region's growing integration into GVCs. This will require technological solutions and training for staff in managing credit risk, which according to the survey is in demand. Technological solutions could also facilitate the adoption of supply chain mapping and digital financing, while simultaneously helping banks to develop more sophisticated internal credit risk assessment systems for SMEs and new entrants in the trade finance markets.

A higher level of digitalization could help to reduce the processing costs for trade finance, which remain high in less developed countries of the Mekong region. Banks and other institutions can also provide training and outreach to firms currently excluded, to better inform them of which trade finance solutions are available and help them access markets.

Further evidence-based studies of trade finance and additional efforts by the research community would be welcome in identifying markets where shortages occur and the potential for trade finance expansion exists. This present study on the Mekong-3 and the earlier IFC–WTO study on West Africa outline how trade finance can lead to increased trade inclusion and economic integration for countries with different trade structures and comparative advantages. They serve as guides to explain how the level of development of domestic financial sectors and their orientation towards cross-border transactions impact the ability of economies to participate more fully in the global trading system.

CHAPTER 1

Trade profiles of the Mekong-3



A worker checks circuit boards at an electronics factory in Hung Yen Province, Viet Nam.

Key findings

- The Mekong-3 – Cambodia, the Lao People's Democratic Republic (PDR) and Viet Nam – form one of the most dynamic and trade-led group of countries in the world. In 2022, the value of trade flows surpassed GDP in all three economies. The trade-to-GDP ratio was particularly high in Cambodia and Viet Nam at over 210 and 185 per cent, respectively – several times higher than the global average of 62 per cent.
- China and the United States have grown to become the main export destinations from the Mekong-3, jointly accounting for over 40 per cent of the region's total trade.
- Trade growth in Cambodia and Viet Nam has followed a two-speed trajectory. Exports to China and the United States have grown by a factor of five since 2012, while exports to other regions also grew, albeit at a slower pace. East Asia and Pacific countries continue to account for most of imports into Cambodia and the Lao PDR at over 58 and 70 per cent in 2021, respectively. Although intra-regional trade among the Mekong-3 has grown in value, its relative importance has declined.
- The growth of Viet Nam's electronic industry and Cambodia's textile exports are primarily driven by foreign investors. In 2021, multinational enterprises contributed to around 70 per cent of Viet Nam's total imports and exports. Large and mega firms contributed more than 80 per cent of exports from the country.
- The Mekong-3 rely significantly on the import of intermediate goods and inputs, which more frequently require letters of credit. As a share of total imports in 2020-2022, intermediate goods comprised 64 per cent in Cambodia, 45 per cent in the Lao PDR and 60 per cent in Viet Nam.
- Cambodia and the Lao PDR are diversifying fast. They have both expanded imports considerably, connecting with new markets. From 2012 to 2021, the number of products imported by Cambodia and the Lao PDR increased by more than 13 and 10 per cent, respectively. There has been significant growth in chemical products imported in Viet Nam, as well as machinery components in all of the Mekong-3.
- Exporters in all of the Mekong-3 have improved their performance. The expanded global footprint of Mekong-3 exporters can be attributed to distinctive developments within each country – including excess capacity from trade diversion, high-value exports along these routes and significant improvements in the productivity of their exporters.
- Trade costs remain a challenge for the Mekong region. While Cambodia witnessed reductions in trade costs of 13-22 per cent to its top ten partner economies between 2008 and 2018, trade costs for Viet Nam fell only for exports. The Lao PDR experienced a sharp rise in average costs for exports of more than 35 per cent and 15 per cent for imports – both of which from a high initial base.



This chapter provides a summary of key trade dynamics in the Mekong-3 that are relevant to trade finance, starting with trade flows in the region and an overview of what is traded and with whom. The chapter then explores: product diversification; the trade of goods at different stages of processing; the competitiveness of exporters in the Mekong-3 and the trade costs incurred; participation in global value chains; and the role of multinational enterprises and firms of different sizes as drivers of growing demand for trade finance.

Trade dynamics in the Mekong-3

Export-oriented nations depend disproportionately on trade, and by extension on trade finance, as a driver of prosperity (see Box 1.1).

The Mekong-3 have established themselves as one of the most integrated and trade-led regions of the world, with a trade-to-GDP ratio surpassing 100 per cent in all three economies and over 210 and 185 per cent in Cambodia and Viet Nam, respectively (see Figure 1.1). This is over three times higher than the global average of 62 per cent and has turned Cambodia and Viet Nam into trade leaders in Southeast Asia.



Cambodia and Viet Nam have become trade leaders in Southeast Asia.

Cambodia and Viet Nam

While a high trade-to-GDP ratio is common in smaller economies, its growth over the last decade points to accelerating internationalization, with trade flows steadily outpacing GDP growth of between 5 and 8 per cent annually – well above the average for East Asia and Pacific. Viet Nam exemplifies and leads this trend for the region as a whole. Since 2012, the value of total trade flows more than tripled to US\$ 754.8 billion in 2022 – and is now valued at more than 185 per cent of GDP (see Figure 1.1).

Cambodia has followed a similar trajectory, tripling the value of its trade since 2012 to US\$ 60.2 billion and surpassing 210 per cent of GDP in 2022 (see Figure 1.1). For comparison, Malaysia and Thailand, two notable economies in the region, have trade flows that exceed GDP at 146 and 123 per cent,

Trade-to-GDP ratio in 2022

210%

Cambodia

185%

Viet Nam

respectively. These economies have also tended to depend less on trade over time, while Cambodia and Viet Nam have consistently increased trade flows relative to GDP.

Lao People's Democratic Republic

The Lao PDR presents a separate case within the Mekong-3. Unlike Cambodia and Viet Nam, it has only recently experienced a sizeable increase in its trade-to-GDP ratio, surpassing 100 per cent of GDP for the first time in 2022 (see Figure 1.1). Since 2014, trade as a share of GDP had fluctuated around 75 per cent, which is still above the global average of 62 per cent and is a reflection of the continued importance of imports and exports for the country's development.

The two-speed growth of trade

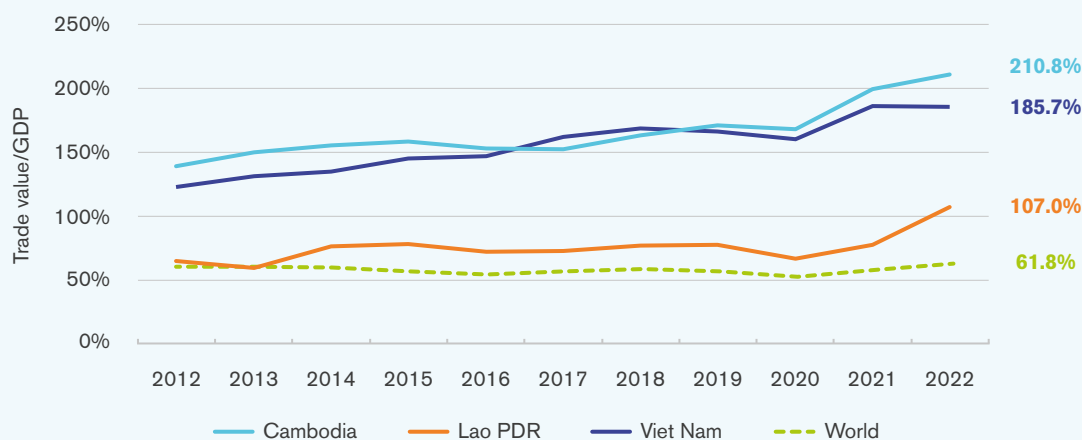
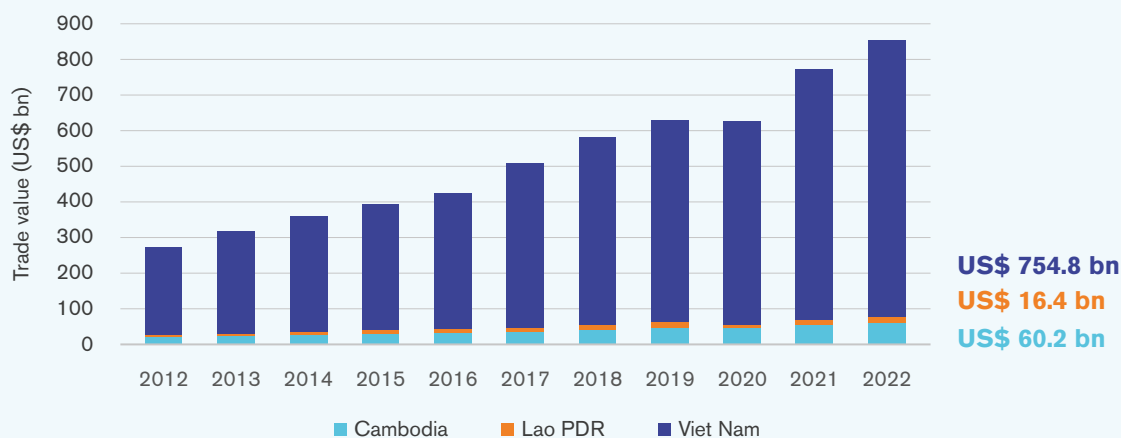
To comprehensively gauge the requisites and provisions of trade finance in Mekong-3, the dynamics of trade across origins, destinations and beneficiaries are examined. The structure of imports and exports from the Mekong-3 has undergone significant changes in the past decade – driven not only by local development but also by the global geopolitical landscape.

China and the United States began mutually escalating tariffs on hundreds of billions of dollars' worth of trade flows in 2018. The study by Fajgelbaum *et al.* (2021), revised in 2023, argues that, while the two economies largely taxed each other

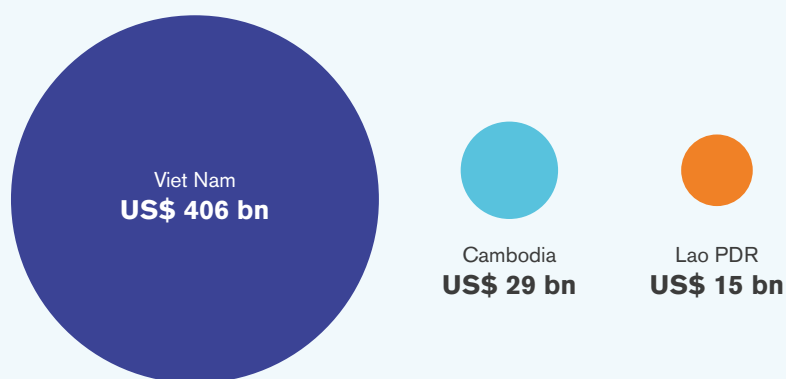
FIGURE 1.1

Trade flows and GDP in the Mekong-3

(in current US\$ billion and as a share of GDP, and total GDP in 2022)



GDP in 2022



Source: IFC–WTO calculations using WTO–UNCTAD estimates for goods trade and IMF WEO and Balance of Payments for GDP and services trade, respectively.

What is trade finance and why it matters?

International trade is an important driver of productivity, jobs and development – but, to be effective, adequate trade finance is essential. Trade finance, an umbrella term including a variety of financial instruments, helps to oil the wheels of trade by bridging the gap between exporters' and importers' differing expectations about when payment should be made. Trade finance includes loans and working capital facilities needed by exporters to process or manufacture products and by importers to buy inputs, raw materials and equipment. Insufficient trade finance increases the risks of the trade transaction (i.e. not receiving payment or delivery) and trade costs (i.e. opportunity costs of using scarce cash resources).



Trade finance at high interest rates or with expensive fees is also a trade cost.

Trade finance is important for businesses because access to finance at affordable rates is an important element of a business's competitiveness and its integration into global markets. Trade finance thus matters for societies as a whole by enabling producers to create better paid jobs and to diffuse technologies for a range of purposes, including, for example, lowering greenhouse gas emissions and adapting to climate change (for a recent review, see Engel *et al.*, 2021). Trade finance can also enhance the benefits of trade for a wide range of market participants, such as smaller enterprises and younger entrepreneurs, which can be exposed to greater risks in cross-border transactions.

More generally, trade finance matters for trade because it is not just demand driven. Research finds that an increase in the supply (or cost) of trade finance is associated with an increase (or decrease)

of global trade volumes (Auboin and Engemann, 2014). The share of merchandise trade supported by trade finance is relatively low in many developing countries: 40 per cent in Africa as a whole and only 25 per cent in West Africa, as opposed to 60-80 per cent across high-income economies.

Rejections rates for trade finance requests in developing countries can be high. In particular, small and medium-sized enterprises (SMEs) are disproportionately affected by high rates of rejection. As a result, even though trade finance is one of the largest sources of cross-border capital flows (valued at over US\$ 10 trillion annually), major gaps still persist. The Asian Development Bank reports that the global trade finance gap – the difference between requests and approvals for financing to support trade – grew to US\$ 2.5 trillion in 2022, and mostly in developing countries.* Hence over time, trade finance has taken a more prominent position in the development agenda.

Global trade finance gap in 2022 estimated at US\$ 2.5 trillion

In IFC–WTO studies, local banks are surveyed to estimate the amount of trade finance supported by the local financial sector in each country and how it relates to trade flows.

Although the surveys do not capture financing by foreign banks provided outside the country, they nevertheless provide an important measure of the ability of local financial institutions to support the country's participation in international trade. The surveys examine the following elements:

- the trade finance instruments used;
- the cost at which trade finance is available;
- the rejection rate of trade finance requests.

Using general equilibrium analysis from the WTO Global Trade Model, these metrics are then used to explore the trade impacts of any potential

improvements to accessing local trade finance. For example, how much more trade would be generated by: (i) greater availability of trade finance (a higher share of trade finance covering trade); (ii) a reduced rejection rate for trade finance; and (iii) reduced interest rates and fees to align closer to international benchmarks. In this way, a combination of trade effects of these counterfactual scenarios can be explored.

As shown in Chapter 3, most of the trade effects are generated by an increase in the availability of trade finance. In certain countries where the uptake of trade finance is very low, a reduction in rejection rates only impacts the few traders who seek trade finance and thus only marginally increases the coverage of trade by trade finance.

* See <https://www.adb.org/news/global-trade-finance-gap-expands-25-trillion-2022>.



Money to service a microloan, Lao PDR.

and depressed their bilateral trade flows relative to non-taxed products, bystander countries increased their exports to the United States and the rest of the world. Cambodia and Viet Nam have been two of the major beneficiaries in a relocation process that started before 2018, owing to an increase of production costs in China.



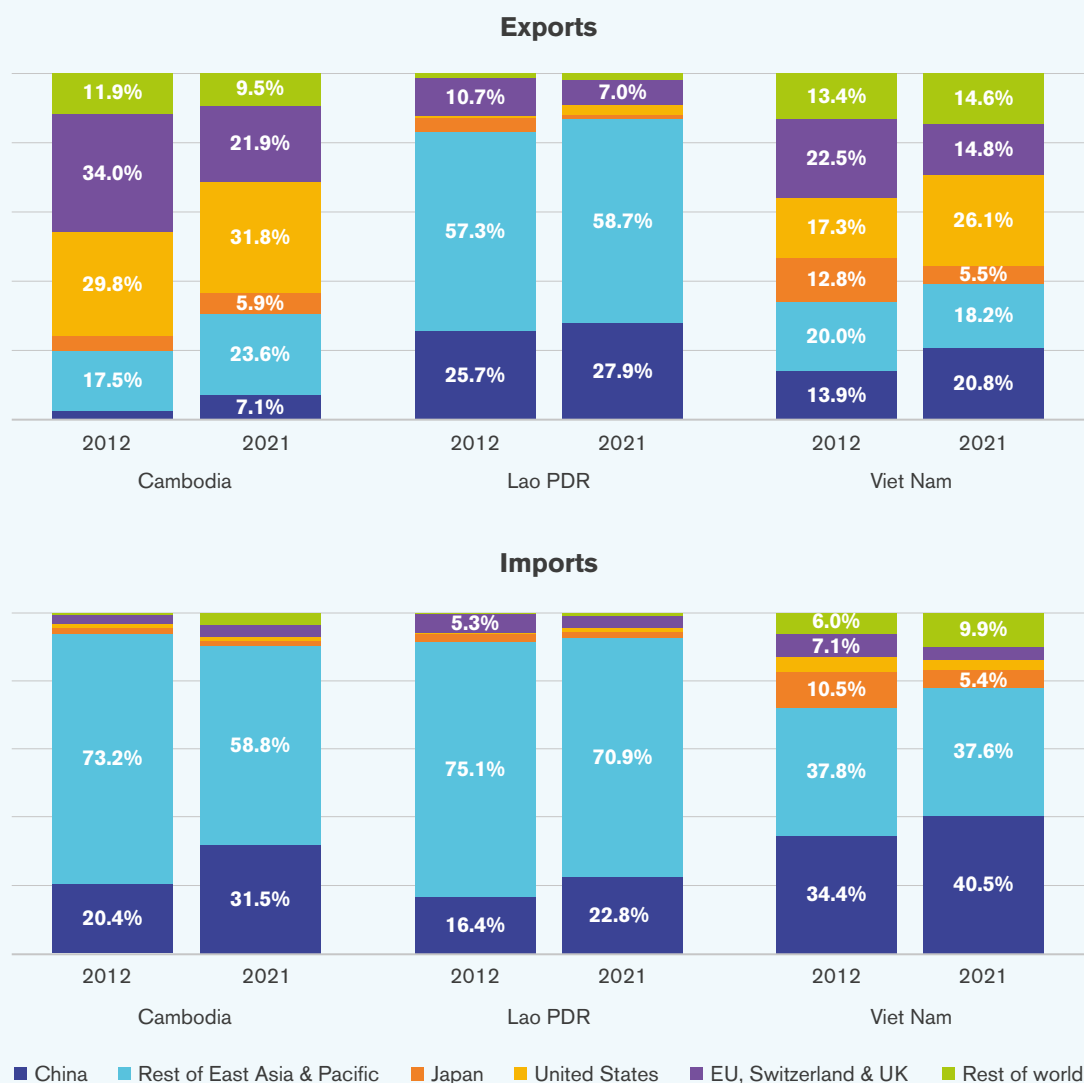
China and the United States have become the top export destinations from the Mekong-3.

Over the past decade, China and the United States have emerged as dominant destinations for exports from the region. In 2021, the United States was the primary export destination for Cambodia and Viet Nam, representing more than 31 and 26 per cent of the total value of exports, respectively (see Figure 1.2, Exports). The Lao PDR, on the other hand, remains heavily oriented towards China and the rest of East Asia and Pacific in both trade directions.

The share of Mekong-3 exports to Europe and Japan has dropped by over 10 percentage points for Cambodia, 6 percentage points for the Lao PDR and 15 percentage points for Viet Nam; while intra-regional exports, excluding China, have been stable in relative terms at one fifth of the total value over the last decade.

FIGURE 1.2

Trade in value in the Mekong-3 as a share of total exports and imports, 2012 and 2021 (in per cent)



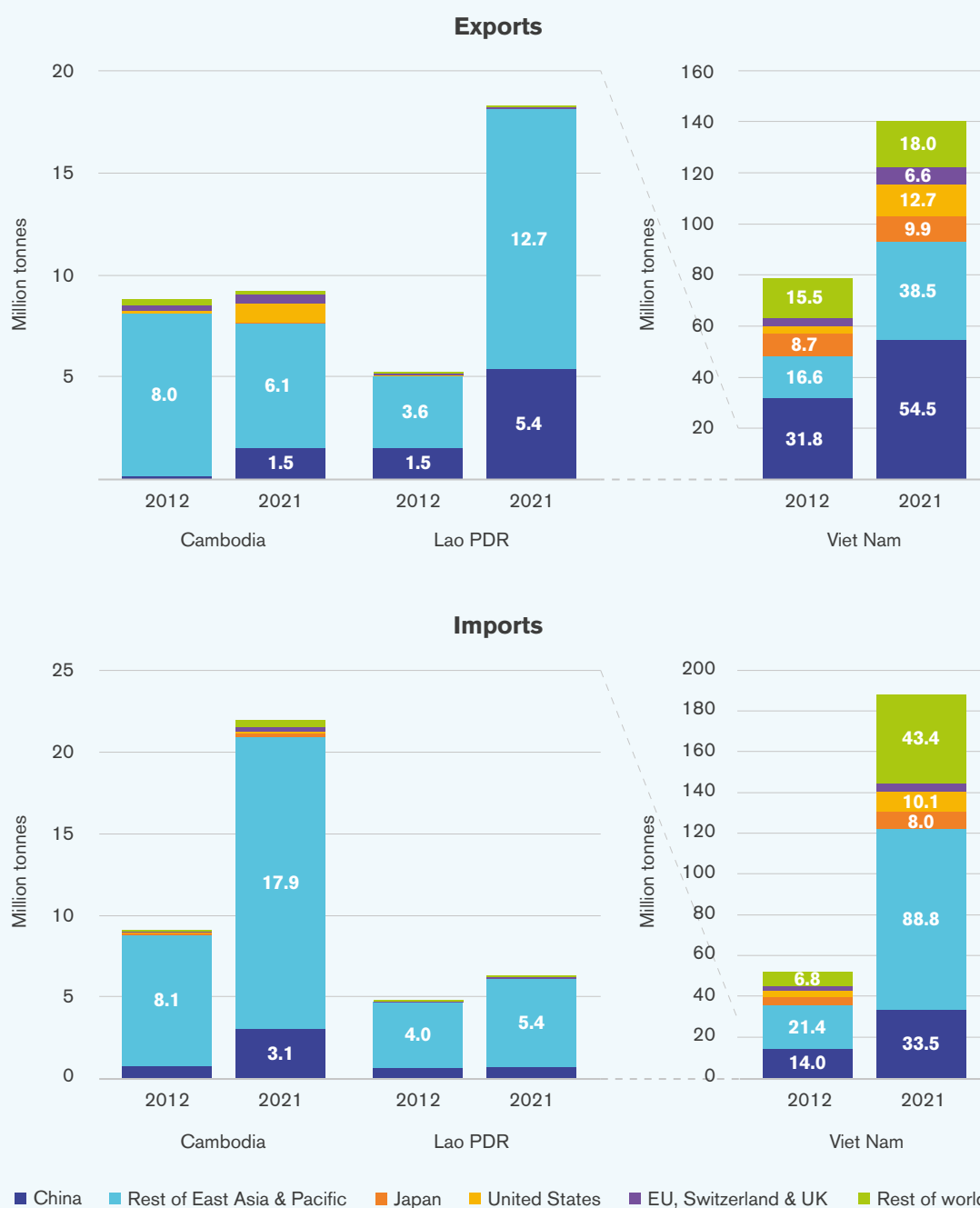
Source: IFC–WTO calculations based on World Bank WITS data.

In quantity terms, shipments to all countries and regions have grown. China and the rest of the East Asia and Pacific region account for over 70 per cent of the total export volumes from the Mekong-3. Despite the decrease of their relative importance, Mekong-3 exports to Europe and Japan remain significant in volume and continue to grow (see Figure 1.3, Exports).

Trade flows among the Mekong-3 have also grown over the last decade, although they still rank low relative to other destinations. Exports from Cambodia and the Lao PDR to Viet Nam increased by a factor of three to four since 2012, albeit from a low base. Trade flows from Viet Nam to Cambodia at least doubled and marginally increased to the Lao PDR.

FIGURE 1.3

Trade volume in the Mekong-3, 2012 and 2021 (in million tonnes)



Source: IFC–WTO calculations based on World Bank WITS data. Missing volumes are imputed using average unit values. Average unit values of trade are calculated by dividing trade values in US dollars by the net weight values in kilograms, for observations with records of both value and quantity in kilograms. The averages are calculated by HS2 sector, origin, destination and year. Average unit values are then used to estimate the volumes where quantity is not reported, or reported in units different than kilogram, by dividing the value reported by its corresponding average unit value. Existing data in the net weight values in kilogram are unaffected by the process.

Two-speed growth trajectory of Cambodia and Viet Nam

Trade growth in Cambodia and Viet Nam exhibits a two-speed trajectory. Exports to China and the United States have grown by a factor of five since 2012. This growth has outpaced exports to all regions, which have also grown – albeit at a slower pace. Notably, exports to Europe have more than doubled in value and volume over the last decade, which indicates expanding market opportunities. Exports to Japan have grown similarly in both value and volume as trade ties with the Japanese market strengthen.

It is worth noting that while the value of exports from Cambodia and Viet Nam to the United States is high, it still represents less than 10 per cent of export volume. This indicates that these shipments are relatively more expensive than exports to other destinations. The same holds for shipments from China to the Mekong-3, where the value of imports has outpaced the growth in volume, suggesting high relative unit values of imported intermediates (see Figures 1.2 and 1.3, Imports). Combined, these two observations point to the rise of global value chains (GVCs) in the region whereby high-value intermediate components are imported, assembled and shipped to the United States as expensive final goods. Shipments from Viet Nam to China and Japan have also grown in value by more than volume; albeit not at the scale observed for shipments to the United States.

The two-speed growth trajectory has also been clear in imports to Cambodia and Viet Nam. While trade from China and to the United States has been growing significantly faster than trade with other regions, imports to Cambodia and Viet Nam from all regions have increased in volume (see Figure 1.3, Imports). China and the rest of East Asia and Pacific collectively account for 65 per cent of the total import volume into Viet Nam. However, imports from China and the United States tend to be considerably more expensive than imports from other sources. This disparity in aggregate statistics conceals moderate growth of the second-tier routes and trade flows.

Imports to the Mekong-3 from China and East Asia and Pacific

China has become the largest supplier of imports to the Mekong-3, at par with the imports from all other regions combined. By 2021, the total value of imports from China was three times its 2012 level. Although East Asia and Pacific continues to represent the largest share of imports into Cambodia and the Lao PDR, the share has dropped since 2012. In Cambodia, imports from Viet Nam in 2021 increased in value by a factor of three since 2012; although the country's



China has become the largest supplier to the Mekong-3.

relative importance has declined behind Chinese imports, which grew much faster.

The consequences of increasing reliance on imports from China have a nuanced impact on trade finance markets. According to interviews conducted in the Mekong-3, imports from China often involve payment arrangements that bypass the local banking system. These arrangements, together with the robust competition among Chinese producers in the global market, are some of the unique characteristics of Chinese trade. Moreover, payment terms often depend on relationships, favouring importers with established, long-term partnerships, which can yield more advantageous import terms.

Net trade in the Mekong-3 and comparator countries

Viet Nam's increasing participation in GVCs has cemented its status as a net exporter, with the value of exports consistently surpassing imports since 2016 (see Figure 1.4). This trend highlights the role of trade as a financing mechanism for the country's development. Viet Nam's trade performance follows the trajectory of more advanced economies in the region, such as Malaysia and Thailand. Meanwhile, Cambodia and the Lao PDR maintain a relatively balanced trade, with marginal net imports, as their trading activities steadily expand.

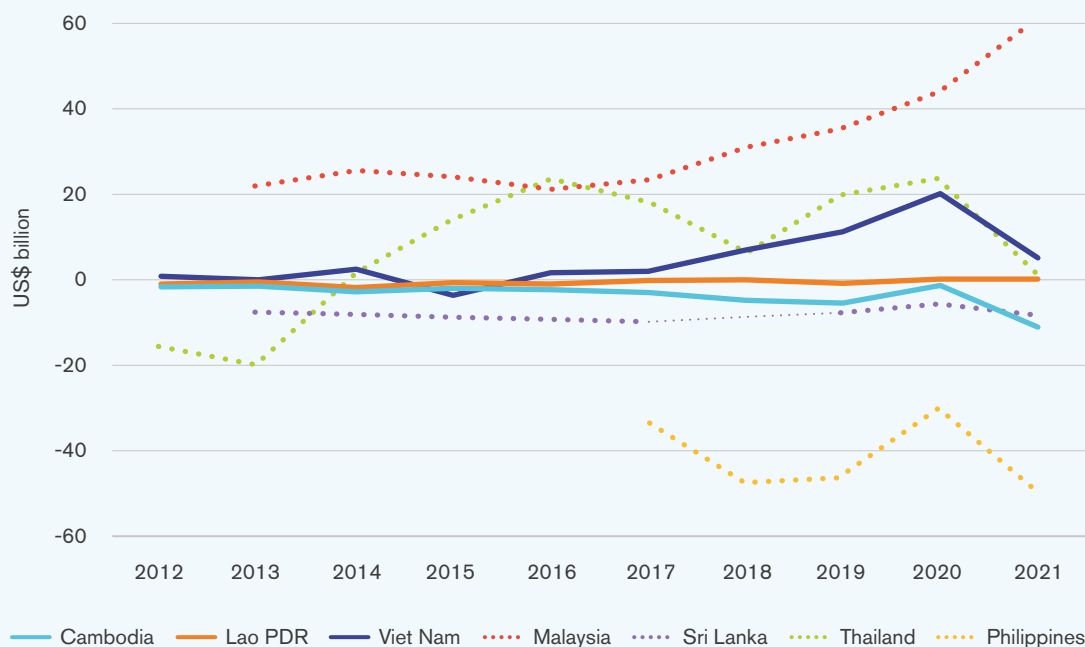
Product diversification

The diversification of the product mix crossing borders has an impact on trade finance markets. Research shows that different products vary in the coverage by bank-intermediated finance when traded across borders (Crozet *et al.*, 2022). In addition, young traders expanding into new markets have a greater need to mitigate risks with new clients, making them more prolific users of trade finance (Antràs and Foley, 2015).

As the demand for finance rises, banks may be hesitant to assume these risks for activities or participants with which they may be less familiar. By expanding trade into uncharted territories, there is thus a greater need for market intelligence and adaptable instruments to support importers and exporters active in these markets.

FIGURE 1.4

Net trade in the Mekong-3 and comparator countries, 2012-2021 (in US\$ billion)



Source: IFC–WTO calculations based on World Bank WITS data. Net trade corresponds to the total value of exported goods and services minus the total value of imported goods and services.

The economy in Viet Nam is more diversified than Cambodia and the Lao PDR, both in terms of imports and exports. Viet Nam's range of products traded has thus remained relatively stable, with only a marginal annual growth rate in the number of products exported (see Figure 1.5). However, the value of Viet Nam's exports has been surging at growth rates of 15 per cent annually, which would suggest an ongoing process of qualitative improvement in similar product categories. The same applies to Viet Nam's imports, indicating a steady and diversified influx of goods from various sources.

Value of exports, Viet Nam

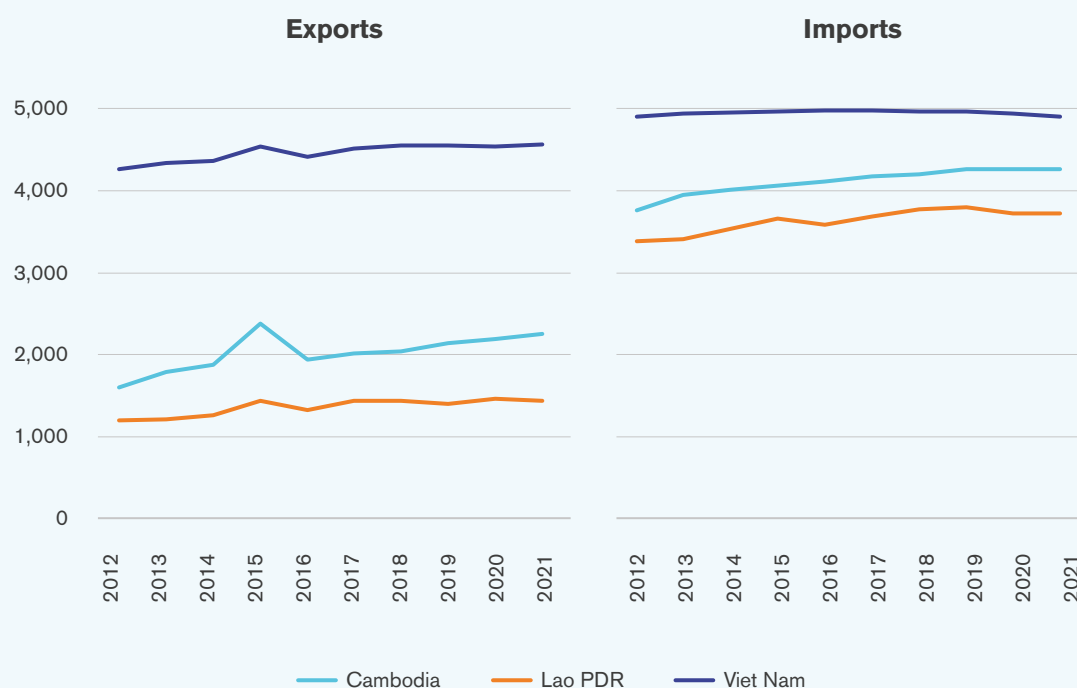
+15% per annum

With regard to the types of product traded by the Mekong-3, electronics, machinery, textiles and food form the bulk of both imports and exports in Viet Nam (see Figure I.1 in Annex I). Just three products – integrated circuits, telephones and rubberized fabrics – have consistently accounted for around 20 per cent of Viet Nam's imports from China since 2016; while broadcasting equipment substantially increased its share in the value of exports to the United States, from around 2 per cent in 2012 to approximately 18 per cent in 2021.

Cambodia relies heavily on its garment and textile industry, which comprises nearly half of its exports, with machinery and other consumer goods making up the remaining portion (see Figure I.1 on Annex I). A handful of key products and services, including garments, footwear, rice, cassava and tourism in services, dominate the export basket of the country (World Bank, 2021).

FIGURE 1.5

Number of products traded by the Mekong-3 (HS 6-digit products)



Source: World Bank WITS (mirror data). Figures from different sources show similar trends, although the number of products exported/imported seems higher when based on World Bank WITS (mirror data).

The Lao PDR primarily exports energy resources, while heavily relying on imports for various other products. Notably, gold has emerged as a significant import commodity for both Cambodia and the Lao PDR, possibly accounting for previously underreported trade flows.

Cambodia and Lao PDR are diversifying fast

Cambodia and the Lao PDR have considerably expanded their imports, connecting with new markets. In 2021, Cambodia and the Lao PDR imported more than 13 and 10 per cent of additional products since 2012, respectively (see Figure 1.5). Similarly, exported products have grown remarkably, expanding from 1,597 to 2,250 for Cambodia (an increase of over 40 per

cent) and from 1,204 to 1,440 for the Lao PDR (an increase of nearly 20 per cent). Starting from a highly diversified base, the expansion of Viet Nam's export basket has been more moderate than Cambodia or Lao PDR. However, among the categories that have experienced significant growth over the extensive margin are chemical products in Viet Nam, as well as machinery components in the Mekong-3 (see Table 1.1).

The dynamics of these sectors highlight the growing capabilities of the manufacturing base in the Mekong-3, albeit from considerably different starting points. This expansion of opportunities for new traders in new markets generates expectations of demand for trade finance that requires adaptation, as it concerns clients active in markets with which the financial system may be less familiar.

TABLE 1.1

Top five HS2 sectors in the Mekong-3 as a share of new products exported, 2012-2021

	Difference (2012-2013 vs 2020-2021)	Share of total difference (%)	Harmonized System 2
Cambodia	66	12.5	Machinery and mechanical appliances; nuclear reactors, boilers
	36	6.7	Electrical machinery and equipment and parts thereof
	35	6.5	Optical, photographic, cinematographic, medical instruments
	24	4.4	Plastics and articles thereof
	20	3.8	Iron or steel articles
Lao PDR	25	10.1	Machinery and mechanical appliances; nuclear reactors, boilers
	24	9.5	Plastics and articles thereof
	15	6.0	Electrical machinery and equipment and parts thereof
	13	5.2	Paper and paperboard
	12	4.6	Iron or steel articles
Viet Nam	48	18.2	Organic chemicals
	27	10.1	Inorganic chemicals
	13	5.0	Machinery and mechanical appliances; nuclear reactors, boilers
	11	4.2	Chemical products n.e.c.
	11	4.0	Meat and edible meat offal

Source: IFC–WTO calculations based on World Bank WITS.

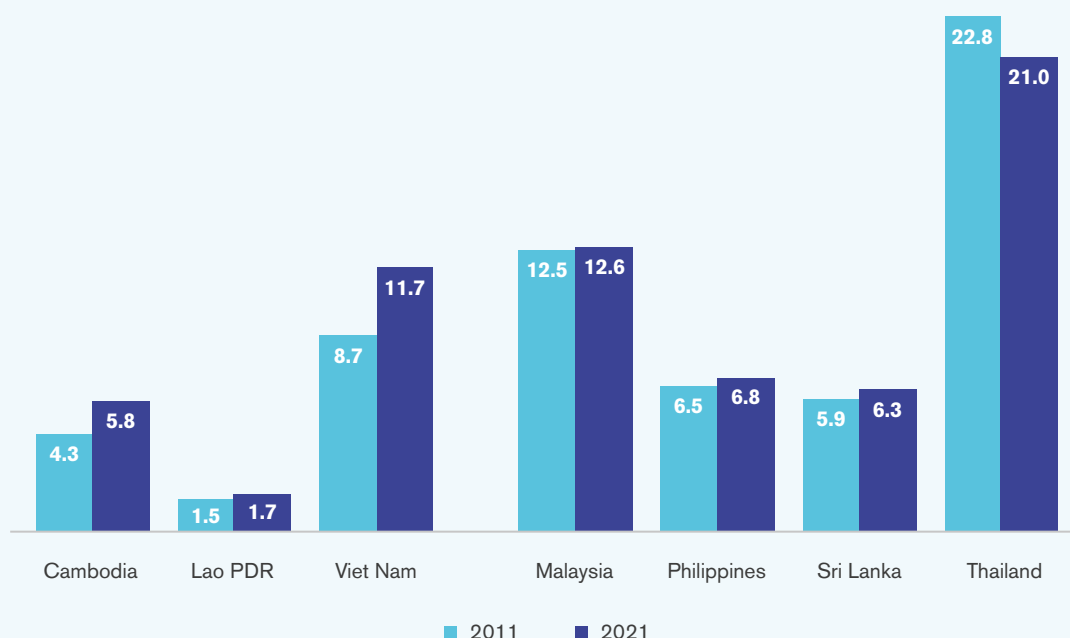
The Mekong-3 are expanding their access to new export markets

Cambodia and Viet Nam have made remarkable strides in expanding their reach of export markets, achieving significantly higher export penetration. Exporters in Viet Nam in particular have achieved a level of market access on par with their counterparts in Malaysia and Thailand (see Figure 1.6). The Lao PDR has also managed to increase its export penetration – albeit from a modest base.

While the number of exported products from Viet Nam has not experienced a substantial growth, exporters have succeeded in diversifying their market reach. This trend suggests that the surplus capacity built in Viet Nam from global trade reconfiguration has led to an expansion of trade beyond the routes from China to the United States. A striking example of this development is evident in the export of broadcast equipment, a dominant category in Viet Nam's exports to the United States: exporters in this sector found their way to 113 global markets in 2010, expanding to 130 markets by 2021 – a 15 per cent increase in market access.

FIGURE 1.6

Index of Export Market Penetration, 2011 and 2021



Source: World Bank WITS. The index follows Brenton and Newfarmer (2007) by comparing for each exported product, the number of countries to which the country exports that product relative to the total number of countries which import that product, and then sums across all products exported. The ratio yields the Index of Export Market Penetration (IEMP), which measures the extent to which a country is exploiting the market opportunities from the existing set of export products.

Trade of goods at different stages of processing

Goods at different stage of processing vary systematically both in the utilization of trade finance instruments they require and in the demand itself for coverage (see Box 1.2 for a description of trade finance instruments). An analysis of letters of credit usage, independently of transaction timing or destination, reveals that capital and intermediate goods are more often covered by this type of finance instrument when they cross borders, compared to consumer goods or raw materials (see IFC/WTO, 2022, based on Crozet *et al.*, 2022). While variations exist across categories, this pattern suggests that overall dependence on bank-intermediated trade finance is, to an important extent, associated with the structure of trade and its dynamics.



The Mekong-3 rely significantly on the import of intermediate goods.

The Mekong-3 rely significantly on the import of intermediate goods, which utilize letters of credit more intensively. Imports into Cambodia and Viet Nam largely comprise intermediate goods, surpassing global and regional average shares (see Table 1.2, Share of total imports). Viet Nam, in particular, imports intermediate and capital goods in proportions comparable to more advanced economies in the region, such as Malaysia and Thailand.

TABLE 1.2

**Share of trade in the Mekong-3 by stage of processing,
2020-2022 (including comparator economies and the world)**
(in per cent)

Share of total imports

	Primary	Consumer	Intermediate	Capital	Other
Cambodia	9	16	64	9	2
Lao PDR	11	19	45	22	3
Viet Nam	9	15	60	14	1
Malaysia	16	17	52	14	1
Philippines	8	25	51	14	2
Sri Lanka	13	15	57	14	1
Thailand	13	14	58	15	1
East Asia & Pacific	19	18	45	15	3
World	14	21	44	15	5

Share of total exports

	Primary	Consumer	Intermediate	Capital	Other
Cambodia	6	83	10	1	0
Lao PDR	34	19	47	0	0
Viet Nam	5	45	37	13	0
Malaysia	19	12	55	14	0
Philippines	15	14	46	25	0
Sri Lanka	5	67	25	3	0
Thailand	7	25	42	23	3
East Asia & Pacific	10	21	46	20	3
World	19	19	43	14	4

Source: World Bank WITS (mirror data).

Trade finance instruments

Trade finance instruments can be broadly categorized as the following:

- instruments that enable cross-border payments;
- instruments that guarantee payments over time;
- credit that enables production;
- mixed instruments with more than one of the above objectives.

In the absence of any intermediation, payments for goods that cross borders are made in advance of shipment, with the full risk of default borne by the importer. These cash-in-advance payments therefore represent the highest risk benchmark for any service provided by banks in this type of intermediation.

Payment methods

In order from least secure to most secure for the importer, payment methods include the following:

1. Cash-in-advance payments require the importer to pay for goods well in advance of receiving them – sometimes by as much as a year. This provides the exporter with payment certainty but leaves significant delivery risk for the importer.
2. Letters of credit are the most widely used instrument within the category of documentary trade finance. In its simplest form, a letter of credit is a written commitment to pay and is typically issued by a bank on behalf of the buyer (importer) to the seller (exporter) or its bank. Letters of credit carry a number of obligations to the buyer (delivery conditions, submission of documentation) and the seller (notably the guarantee that if the buyer is unable to pay, the bank will cover the outstanding amount).
3. Documentary collections refer to the handling of documents by banks according to instructions received, typically by an exporter or their bank, in order to obtain either direct payment or acceptance of deferred payment. This differs to a letter of credit in that the bank

faces no liability in the case of payment default or non-conformity of final goods.

4. Open account payments usually indicate payments that occur following shipment or receipt of goods. While cash-in-advance payments provide full certainty to the exporter, open account payments provide certainty to the importer against any risk. Similar to cash in advance, these payment arrangements are not bank intermediated.

Payment guarantees

In addition to payments, there are a number of trade finance instruments that guarantee future payments to the seller/exporter or the delivery of goods or services. Payment guarantees and stand-by letters of credit are bank guarantees to pay the exporter on delivery of the goods. Bid bonds and performance bonds also fall into this category and help the recipient to mitigate counterparty risk in the delivery of goods or services.

Capital loans

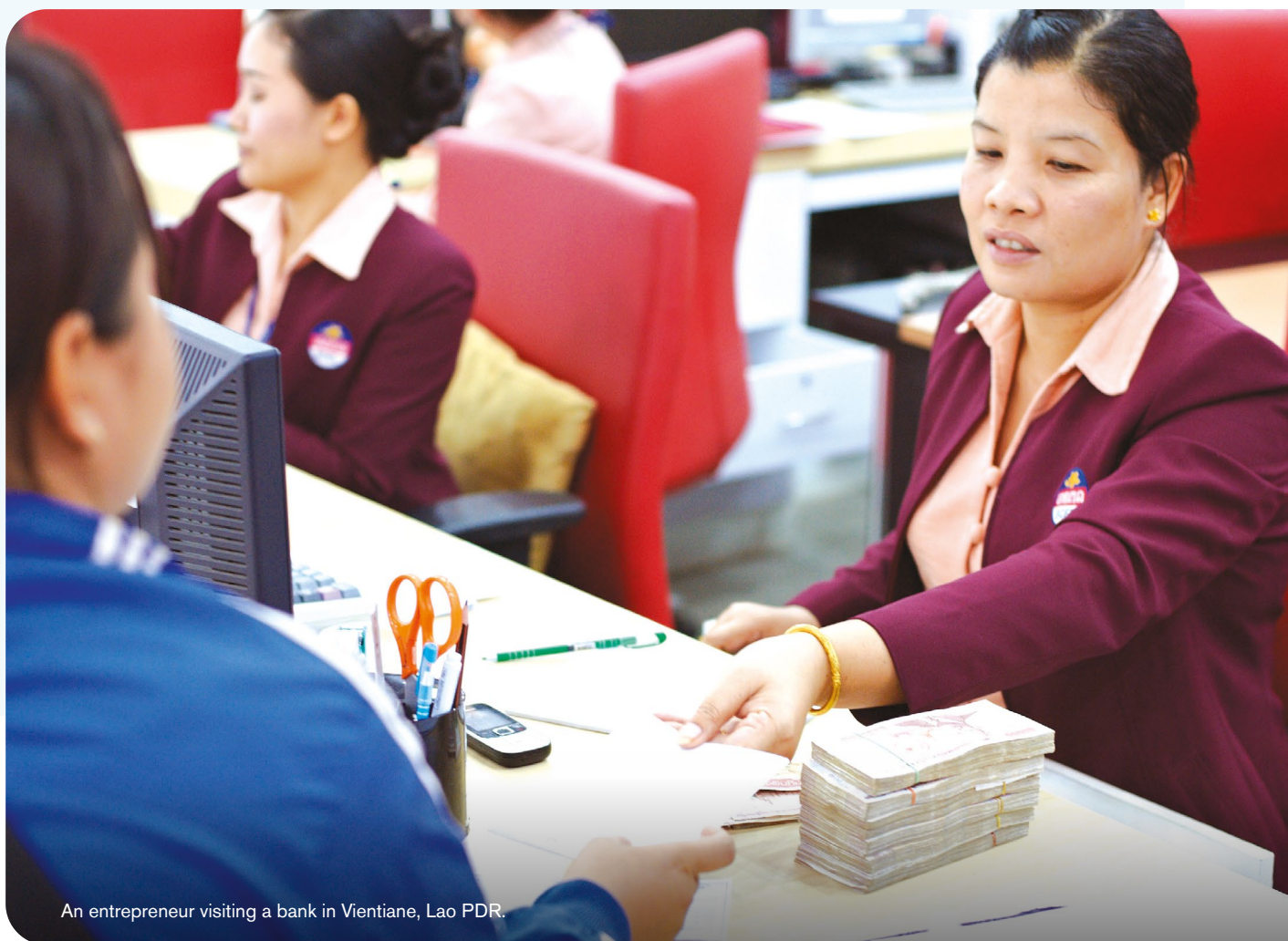
Trade finance also includes instruments to enable production for an overseas destination in the form of capital loans, such as: (i) pre-export finance, which finances expenditures before export deliveries take place; (ii) post-shipment/import finance to enable the importer to pay the exporter at a subsequent stage once the goods have been sold; and (iii) working capital loans, which are more flexible ways to pre-finance imports and exports.

Supply chain finance

Purpose-defined categories such as supply chain finance (SCF) refer to the open account payments discussed above combined potentially with risk mitigation practices to optimize the management of working capital and liquidity invested in supply chain processes. SCF can refer, for example, to supplier finance or reverse factoring. These are financing solutions in which suppliers can receive early payment on their invoices.

Reverse factoring refers to an arrangement whereby the supplier receives early payment based on the credit rating of the buyer. The term SCF can also be used generically to describe a broader range of

supplier financing arrangements, including solutions such as dynamic discounting, in which the buyer enables suppliers to access early payment on invoices in exchange for an early payment discount.



An entrepreneur visiting a bank in Vientiane, Lao PDR.

The Lao PDR imports a higher share of all other categories – consumer, capital and primary goods – which is likely a reflection of its stage of economic development. With regard to intermediate goods, the Lao PDR mirrors the import patterns of its neighbouring countries.

Similarly, the composition of exports from the Mekong-3 reflects the level of development of the three countries (see Table 1.2). Exports from Viet Nam encompass a wide range of products, including intermediate and consumer goods, showcasing the country's growing industrial capabilities. Cambodia primarily exports consumer goods (over 80 per

cent of total export value), while the Lao PDR focuses heavily on exporting primary products (34 per cent of the total) and energy to China. Both economies lag behind in exports of intermediate and capital goods combined compared to more advanced economies in the region, such as Malaysia, the Philippines and Thailand.

This dynamic, however, has been changing. In 2020, there was a slight shift in Cambodia, with a marginal increase in intermediate goods exports. Exports of intermediate goods from the Lao PDR steadily increased from 30 per cent of total exports in 2012 to more than 50 per cent in 2021.

Competitiveness and trade costs

Trade finance and competitiveness in international markets are inherently intertwined. In a mutually reinforcing cycle, an economy's competitive edge in international markets reflects its capacity to sustain and expand trade flows, which in turn impact the demand for trade finance. Moreover, a strong trade position enhances exporters' returns and creditworthiness, facilitating access to favourable terms for trade finance.

Exporters in the Mekong-3 have improved their export performance, despite adverse conditions. They have significantly enhanced their global presence throughout the last decade – outperforming counterpart economies in the broader East Asia and Pacific.

Analysis based on the World Bank Measuring Export Competitiveness (MEC) Database,¹ updated through 2021, shows that the expanded global footprint of Mekong-3 exporters is not primarily driven by an upsurge in global demand for the products they specialize in, nor is it driven by stronger demand across the board in their primary export destinations (see the sectoral and geographical effects, respectively, in Figure 1.7). Rather, this expansion can be attributed to residual performance associated with distinctive developments within each of the three countries – broadly captured as “performance” or “competitiveness effect”. This residual performance includes possible excess capacity from trade diversion: that is, the shift of production away from China; high-value exports along these trade routes; as well as improvements in the productivity of local exporters (see ILO, 2022).²



Although trade diversion effects can be short-lived, improvements in productivity underpin a more resilient export growth trajectory for Cambodia and Viet Nam.

Local producers progressively develop both the capacity and capabilities to compete internationally, should future geopolitical alignments favour different locations.

Exporters in the Mekong-3 notably secured disproportionately larger shares of the Chinese market in product categories experiencing a simultaneous surge in demand and prices (see Table I.1 in Annex I for more details). Exporters in the Lao PDR experienced the same in the rest of East Asia and Pacific, resulting in a largely positive geographical effect on their export competitiveness. Conversely, Mekong-3 exporters to Japan faced the opposite trends relative to average growth of demand and prices.

With regard to specific sectors, electronics exporters in Viet Nam expanded their footprint in products which had concurrent above-average growth in volume, despite below-average growth in prices for the products exported (see Table I.2 in Annex I for more details). It is noteworthy that, at the onset of the COVID-19 pandemic, both the price and volume effects were positive for Viet Nam's exports in this sector – that is, price conditions were favourable for the products in which Viet Nam had been specializing. Garment exporters in Cambodia managed to expand their footprint in products experiencing a below-average increase in both global demand and global prices. Collectively, the specialization and scale effect in these garment segments outweighed the adverse conditions.

Trade costs in the Mekong-3

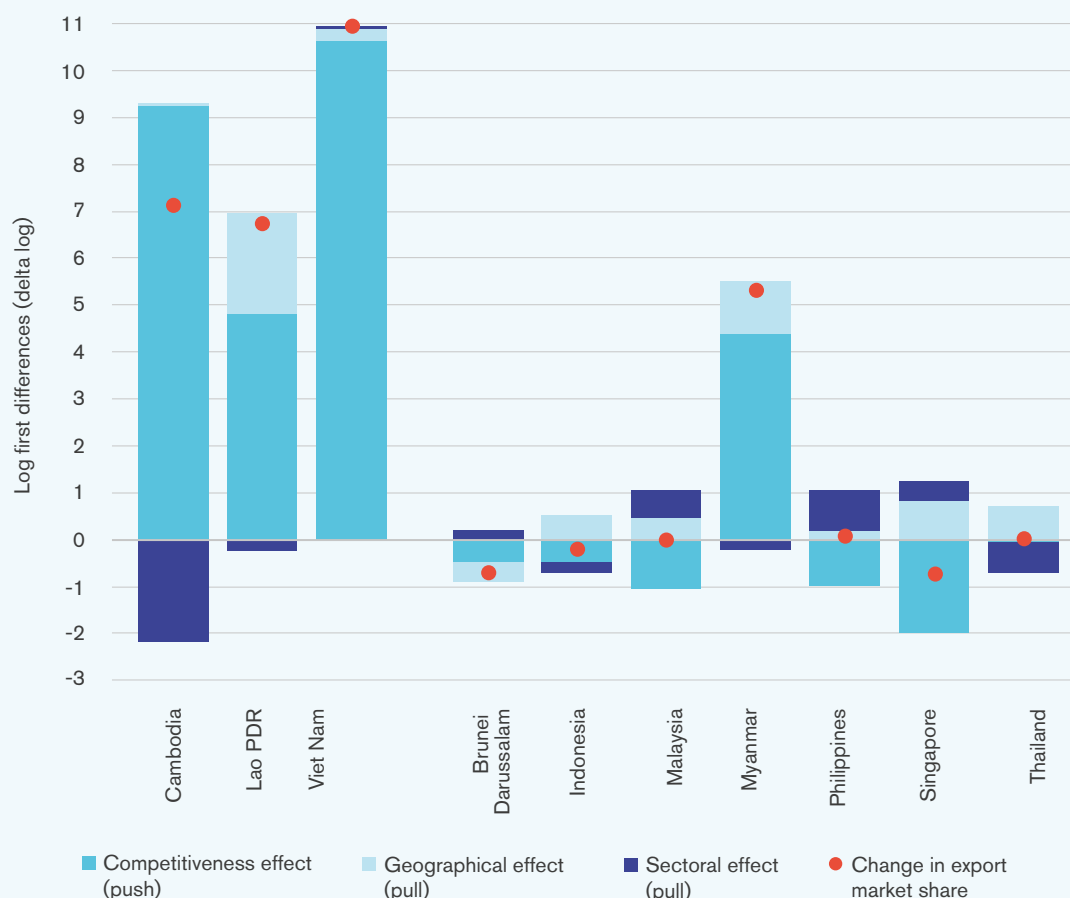
Trade involves various costs arising from transportation, regulatory adherence, currency conversion and trade-related levies such as import tariffs. As an economy's infrastructure strengthens and trade agreements are established, many of these associated costs will tend to diminish. WTO statistics reveal that global trade costs fell by approximately 15 per cent between 2000 and 2018 (WTO, 2021).

In the Mekong-3, however, progress has been less pronounced, with disparities in improvements across countries. In Cambodia, there were substantial reductions of 13-22 per cent in both import and export costs to its top ten partner economies between 2008 and 2018. In Viet Nam, however, trade costs fell only for exports, with costs for imports marginally increasing. Over the same period, the average trade costs in the Lao PDR for exports to its top ten partners rose sharply by more than 35 per cent, and import costs were 15 per cent higher than in 2012 – both of which, moreover, from an already high initial base (see Figure 1.8).

Importing costs from the region generally followed an upward trend during the first half of the last decade but subsequently improved in the latter half. Trade costs with China – the major import partner of the Mekong-3 – on both sides have followed a similar trajectory over the last decade.

FIGURE 1.7

Decomposition of change in export market share (trade values), period averages 2010-2021



Source: World Bank MEC Database. The numbers reported in the tables are log first differences. They represent an approximation of the percentage change in the variable of interest. Strictly speaking, the percentage change in a variable Y at period t is defined as $(Y(t) - Y(t-1))/Y(t-1)$, which is approximately equal to $\log(Y(t) - Y(t-1))$. The approximation is almost exact if the percentage change is small.

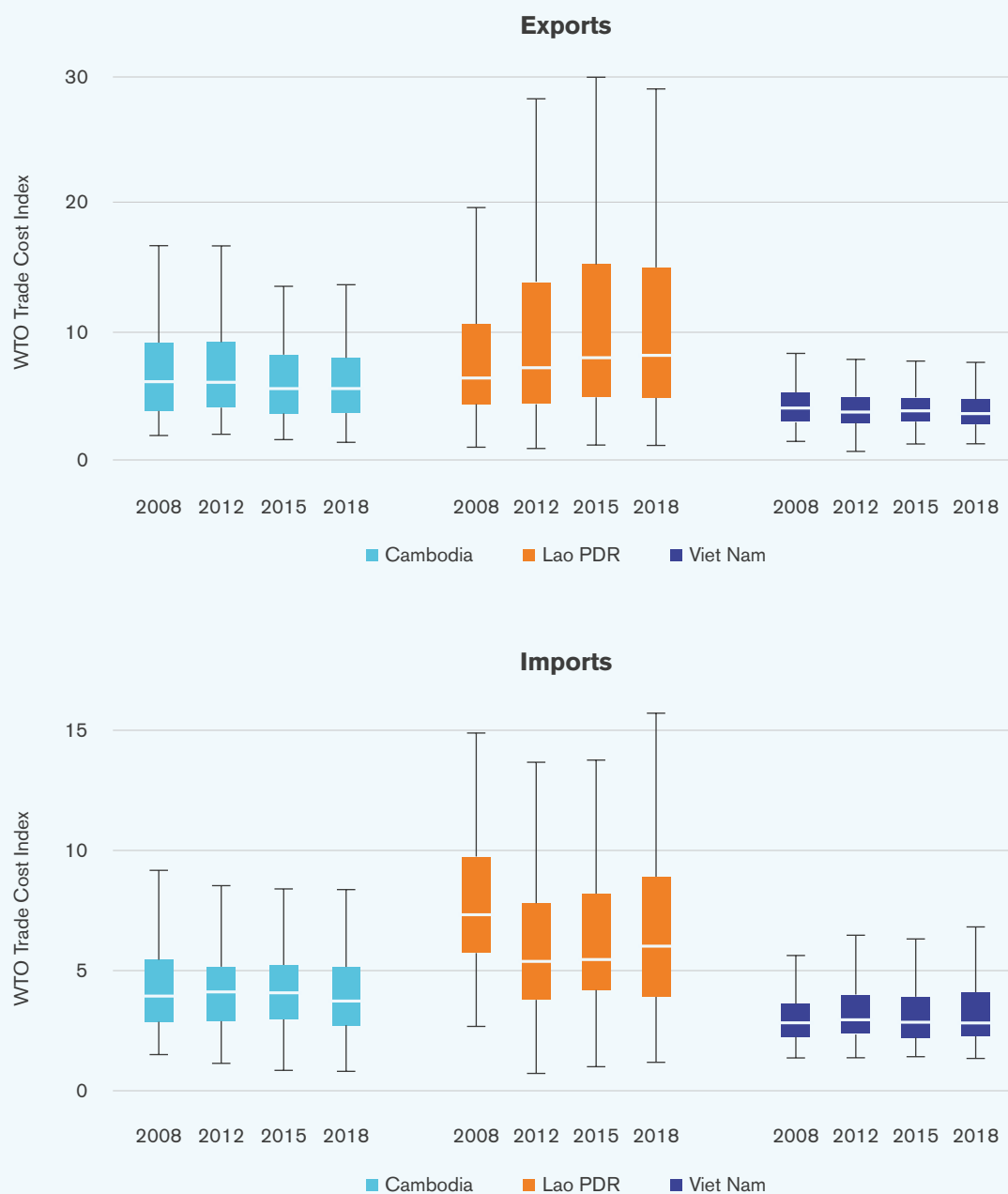


Trade costs are falling slowly in Cambodia and Viet Nam, while increasing in the Lao PDR.

It is important to recognize that higher trade costs not only impose direct constraints on trade but can also impede access to trade finance. When trade becomes less lucrative and profit margins are squeezed, extending trade finance services to importers and exporters becomes riskier for financial institutions.

FIGURE 1.8

WTO Trade Cost Index in the Mekong-3, 2008-2018



Source: IFC–WTO calculations based on the WTO Trade Cost Database. The index of global trade costs can be interpreted as how many times higher international trade costs are compared to domestic trade costs (WTO, 2021). For example, a value of 2 means that international costs are double the domestic trade costs (*ad valorem* equivalent of 200 per cent). The box plots display a three-number summary of the trade cost distribution across the Mekong-3 and their top partners (top ten origin countries for imports, top ten destinations for exports). The bottom of each box represents the first quartile, the horizontal line the median, and the top of the box the third quartile of trade costs in each year.

Participation in global value chains

Seizing trade opportunities in GVCs through expansion into new products and services requires deeper and more diverse trade finance instruments. Over time, the Mekong-3 have experienced greater GVC integration both in terms of backward participation (i.e. the share of imported intermediates in exports) and forward participation (i.e. the share of intermediate exports from the Mekong-3 in third countries' exports) (see Box 1.3 for definitions). Leading the way in the East Asia and Pacific region, Cambodia and Viet Nam have demonstrated remarkable growth in their participation levels (see Figure 1.9).

Two sectors account for the majority of this development. Since the late 2000s, when Viet Nam made a pivotal entry into GVCs, the country has been recognized as a second-tier global supplier for computer, communication and consumer products. Yet despite its prominent position, Viet Nam's role within electronic GVCs has primarily involved a transition from being a mere integrator of components to engaging in midstream activities that still generate relatively lower value (OECD, 2021). These midstream activities encompass subassemblies such as displays and special parts, as well as finished products such as consumer electronics, communications and computers. An essential aspect of Viet Nam's electronic industry involves significant imports of components and subassemblies, which accounted for about 65 per cent of imports in 2019.

Cambodia's garment manufacturing sector has experienced a flourishing trajectory. A distinctive feature of this sector is the prevalence of cut–make–trim firms, which rely heavily on imported materials for their production processes and often operate along narrow profit margins. This unique model has contributed to the sector's growth and impact on the broader economy.

Foreign investment drives trade growth in Cambodia and Viet Nam

The landscape of Viet Nam's trade is prominently shaped by the activities of multinational enterprises, which contributed to roughly 70 per cent of the merchandise imports and exports in 2021 (see Figure 1.10).³ Large and mega firms (conventionally defined as those employing over 5,000 employees) contributed more than 80 per cent of goods exports from the country. These shares are significant in terms of trade finance, as subsidiaries of multinational enterprises and large conglomerates tend to rely to a greater extent on intra-firm financial solutions and syndicated arrangements with international banks (Nguyen and Almodóvar, 2018).⁴



The growth of both Cambodia's textile exports and Viet Nam's electronic industry is primarily driven by foreign investors.

New evidence from the 2023 IFC survey of traders in the Mekong-3 lends support to the key take-away – that foreign affiliates rely significantly less on local bank-intermediated trade finance than domestic firms or firms of smaller sizes (see Chapter 2).

A closer examination of the electronics sector in 2021 reveals that multinational firms accounted for nearly all of the imports and exports of these goods – domestic firms accounted for 0.5 per cent of imports and 1.6 per cent of exports (see Figure 1.11). Most shipments to Viet Nam (62 per cent) and over 50 per cent of exports were undertaken by businesses with more than 5,000 employees – so-called mega-firms.

A similar structure can be found in Viet Nam's garment sector; although a more considerable share of domestic firms engage in trade and there is a greater presence of large rather than mega firms. Small and medium-sized enterprises (SMEs) are concentrated in other exports (39 per cent) and imports (23 per cent). Combined, these observations help to explain the two-speed trajectories of trade growth in Viet Nam – where large multinational conglomerates outpace smaller, albeit growing, domestic sectors.

The prospects of local bank-intermediated trade finance in the region will likely depend on further integration of local firms into GVCs – a process that has been gaining traction. Tier 1 and 2 suppliers in Viet Nam to Samsung, a manufacturer based in the Republic of Korea, witnessed a ten-fold increase from 2014 to 2022, from 25 local companies to 257.⁵ Furthermore, Samsung has partnered with 400 Vietnamese firms to improve product quality in this supply chain – generating US\$ 72 billion in local revenue.

The situation in Cambodia is similar, although access to firm-level information is more challenging. The garment industry relies heavily on foreign capital, with approximately 90 per cent of garment enterprises under foreign ownership, primarily from: China; Hong Kong, China; the Republic of Korea; and Chinese Taipei (Calabrese and Balchin, 2022). The advantage of these foreign entities lies in their access to capital, expertise, well-established networks and a skilled labour force – resources that are not as readily accessible to their domestic Cambodian counterparts.

Forward and backward participation in global value chains

Economies participate in global value chains (GVCs) by importing foreign inputs to produce the goods and services they export and also by exporting domestically produced inputs to partner economies in charge of further production stages.

Forward GVC participation

Forward GVC participation is the share of domestic value-added content of exports to an economy's total gross exports. This is the supply side in GVCs, where an economy exports intermediate goods to third economies for further processing.

Backward GVC participation

Backward GVC participation is the share of foreign value-added content of exports to an economy's total gross exports. This is the sourcing side in GVCs, where an economy imports intermediates to produce its exports.

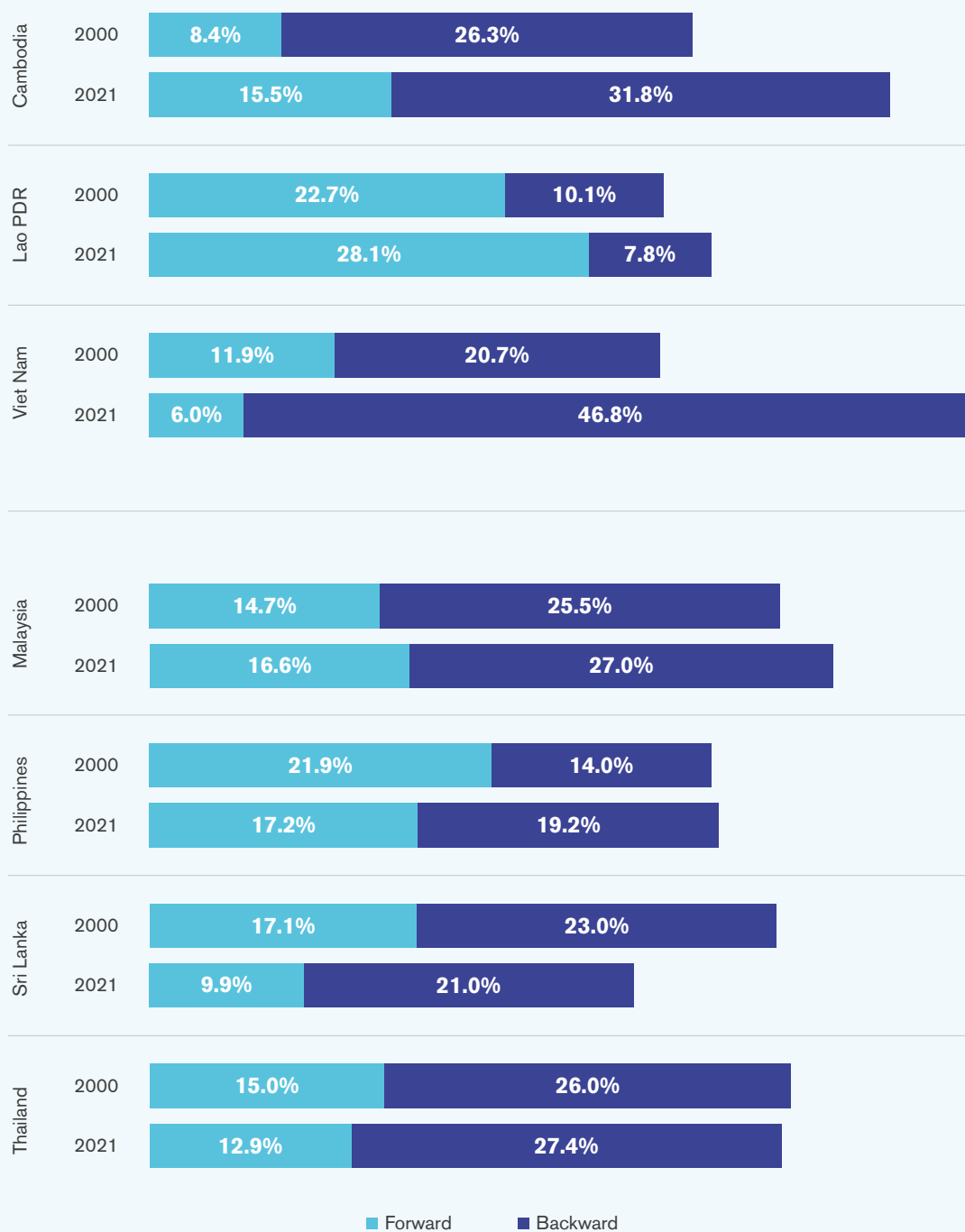
Source: See https://www.wto.org/english/res_e/statis_e/miwi_e/explanatory_notes_e.pdf.



A local footwear manufacturing plant, Cambodia.

FIGURE 1.9

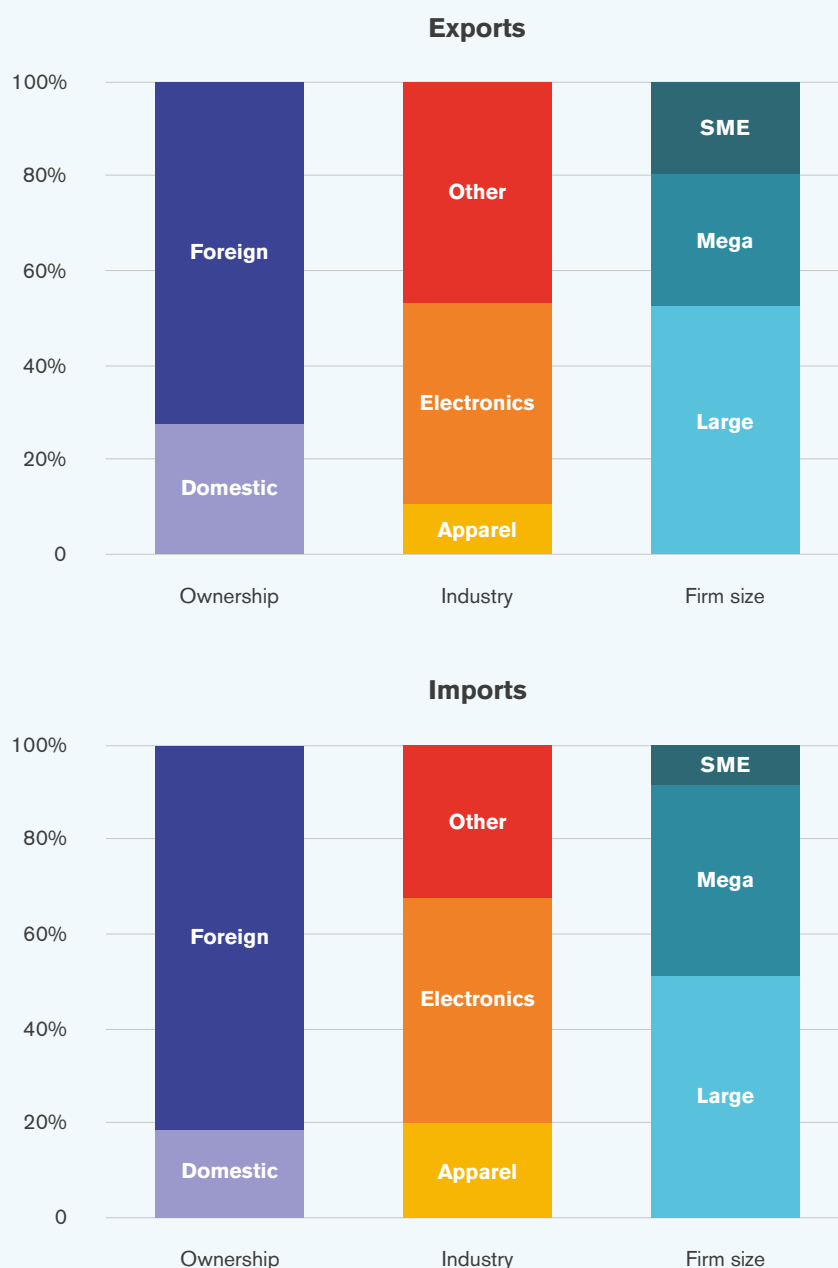
Forward and backward GVC participation in the Mekong-3, 2000 and 2021 (in per cent of trade)



Source: World Bank WITS, GVC Trade Table.

FIGURE 1.10

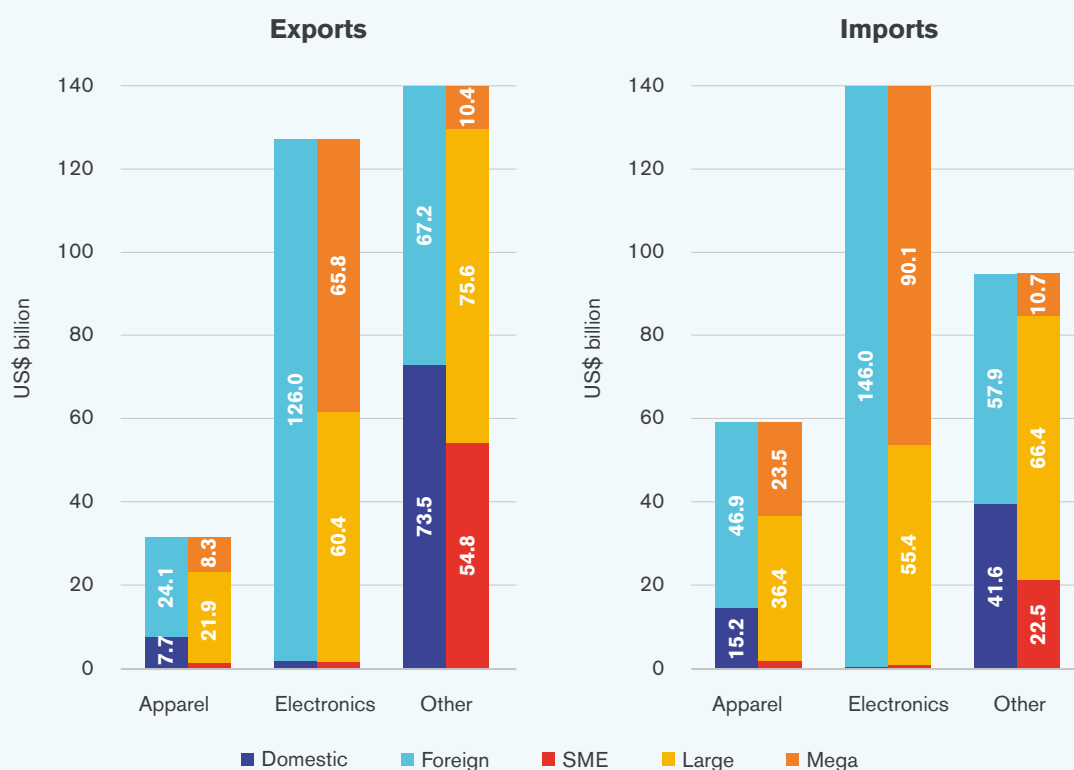
Viet Nam: Share of exports and imports by ownership, industry and firm size, 2021 (in per cent)



Source: IFC–WTO calculations based on 2021 Vietnam Enterprise Survey and Custom data from the General Statistics Office of Vietnam, excluding data from the services sector, except wholesale and retail. Foreign – firms with at least 10 per cent foreign ownership; SME – 1–100 employees; large – 101–4,999 employees; mega – 5,000+ employees. Electronics includes ISIC Rev. 4 divisions 26 and 27 and apparel includes divisions 13–15.

FIGURE 1.11

Viet Nam: Share of exports and imports in apparel and electronics industries by ownership and firm size, 2021 (in US\$ billion)



Source: IFC–WTO calculations based on the 2023 IFC firm-level survey of trade finance. Foreign – firms with at least 10 per cent foreign ownership; SME – 1-100 employees; large – 101-4,999 employees; mega – 5,000+ employees. Electronics includes ISIC Rev. 4 divisions 26 and 27 and apparel includes divisions 13-15.

Endnotes

1. See Gaulier *et al.* (2013) for more details on methodology and indicators of the shift-share analysis.
2. The International Labour Organization (ILO, 2022) notes that from 2010 to 2019, Viet Nam experienced the fastest growth in the average annual real minimum wage in Southeast Asia (11.3 per cent); exceeding the annual productivity growth over the same period by a factor of two. The ILO (2022) concludes that: "While this may signal lower competitiveness for low-cost manufacturing activities, Viet Nam's average minimum wage is still lower than other competitor production countries in the region. It also reflects that labour productivity can be raised to match higher wages by increasing the value-added of production activity".
3. The Centre d'Études Prospectives et d'Informations Internationales (CEPII) reports similar results for 2019 (Fouquin and Caponnière, 2020).
4. The United States Census Bureau's Related Party Trade database reveals that 31 per cent of the total US\$ 101 billion goods imported into the United States from Viet Nam in 2021 were between related parties, with the electronics goods category representing the overwhelming majority (90 per cent, equivalent to US\$ 28 billion). A share (possibly high) of these intra-company flows is likely to be financed by large global banks outside Viet Nam and not captured in this publication.
5. See <https://vir.com.vn/vietnamese-suppliers-to-become-part-of-samsungs-global-value-chain-99735.html>.

CHAPTER 2

Trade finance in the Mekong-3



Bank transactions during the COVID-19 pandemic in Cambodia.

Key findings

- Local trade finance markets in the Mekong-3 were worth nearly US\$ 152 billion in 2022. Vietnamese banks supported about 21 per cent of exports and imports with trade finance, a substantial contribution which represents 22 per cent of total banking assets in the country. The local banking sector in Cambodia supported a much smaller share of the country's import and export operations, some 3 per cent of total trade, accounting for only 2.5 per cent of banks total assets. Data collected for the Lao People's Democratic Republic (PDR) are rather weak, but a rough estimate suggests that local trade finance supports an even smaller share of trade.
- In Cambodia and Viet Nam, the existence of alternative, foreign supply chain finance (SCF) arrangements provided by large multinational companies to their subsidiaries and tier 1 suppliers may explain the limited share of trade finance provided by local banks. The extent and nature of these arrangements is not captured by the data.
- Local banks have a limited role in supporting trade arising from the production of consumer electronics, textiles and clothing by foreign-owned firms. Greater involvement is found in locally owned sectors of wholesale and retail trade, agriculture and fishing, and intermediary industrial products (metals, plastics). Local banks are also more likely to support intra-regional trade than global trade.
- Supply and demand constraints impact the availability of locally provided trade finance. On the supply side, 60-80 per cent of banks surveyed identified disruptions to mobility and operations due to the COVID-19 pandemic as the main constraint. The banks also report the need for technical and financial assistance to create trade finance capacity for instruments that they do not provide. On the demand side, the high cost of finance, along with collateral requirements and unfamiliarity with trade finance are highlighted by survey.
- Banks offer mostly traditional trade finance instruments such as letters of credit, guarantees and pre-export loans. Short-term working capital lines are often used as a substitute to trade finance, particularly in Cambodia, while SCF supplied by local banks in Cambodia and Viet Nam accounts for only 2 per cent of available trade finance. Promisingly, a quarter of surveyed banks intend to introduce SCF in the next two years.
- Trade finance usage differs significantly across different types of firms. Large firms (at least 100 employees) are over 65 per cent more likely to use external trade finance than firms with 5-99 employees. Perhaps more counterintuitively, foreign-owned and high-tech manufacturing firms tend to use trade finance much less often: domestic companies are twice as likely to use trade finance than foreign-owned companies. Similarly, the share of wholesalers and retail traders using trade finance is almost twice that of firms in high-tech manufacturing.



This chapter uses new primary data collected by the IFC through two surveys covering the supply side (banks) and the demand side (exporters and importers) of trade finance. The 2023 IFC survey of trade finance in the Mekong-3 covers the banks currently in operation in the region. The 2023 IFC firm-level survey of trade finance is based on a nationally representative sample of firms engaged in international trade in Viet Nam.

Local trade finance markets

Based on the data collected from local banks, the current value of the local trade finance market is estimated to be US\$ 1.6 billion in Cambodia and US\$ 150 billion in Viet Nam (see Table 2.1). There is insufficient data to estimate the local trade finance market in the Lao PDR. However, rough calculations indicate it to be around US\$ 0.5 billion – less than a third of Cambodia’s market.¹

There is a significant difference in magnitude among finance markets in the Mekong-3 – Viet Nam accounts for 98 per cent of the total – and the extent to which local financial sectors contribute to supporting trade flows. Local banks supported 21 per cent of trade flows in Viet Nam, 3 per cent in Cambodia and possibly less in the Lao PDR (see Table 2.1).

As described in Chapter 1, Viet Nam’s share of trade (exports plus imports) expanded to 185 per cent of GDP² in 2022, which reflects its growing participation in global supply chains. The mobilization of domestic financial assets for trade facilitated the fast expansion of trade operations in Viet Nam. The estimated share of trade finance in the total banking assets of Viet Nam is about 22 per cent – a large share by any international estimate.

Although the local trade finance market in Viet Nam supports only one-fifth of total trade flows, the survey did not cover SCF arrangements provided by foreign banks to subsidiaries of foreign firms in Viet Nam producing goods for export. Only a global survey involving, for example, global banks and banks from China, Europe, the Republic of Korea and the United States could capture additional trade finance flows.



Local trade finance markets in the Mekong-3 are worth nearly US\$ 152 billion.

Bank-intermediated trade finance as share of total bank assets

2.5% **22%**

Cambodia

Viet Nam

Source: IFC–WTO staff calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

SCF programmes have recently been introduced by local banks. KPMG, a major consulting firm, estimates the potential of the SCF market in Viet Nam to be close to US\$ 50 billion annually. However, only a minor part of such potential has yet been exploited.³ According to the survey, SCF supplied by local banks accounts for only 2 per cent of the total estimated trade finance.

The local trade finance market in Cambodia is smaller both in absolute and relative terms (see Table 2.1). The estimated trade finance portfolio of banks was about US\$ 1.6 billion, out of US\$ 52 billion in trade flows in 2022. Cambodia shares a common characteristic with Viet Nam of having a high trade-to-GDP ratio, which exceeded 210 per cent in 2022. Support by the financial sector to the integration effort of Cambodia is therefore important for the competitiveness of its traders in international markets. However, the survey confirms previous analysis (Kingdom of Cambodia, 2018), according to which the 3 per cent share of trade supported by formal trade finance instruments was relatively small by international standards. These differences may result from a range of triggers, such as:

- underreporting in the survey owing to a narrow interpretation of trade finance by respondent banks;
- the existence of foreign financing flows sourced outside Cambodia;
- intra-company financing from abroad;
- the existence of temporary imports – where garment factories are directly provided with inputs for local processing before re-exporting to the country of origin.

TABLE 2.1

Bank-intermediated trade finance in the Mekong-3

	Total	Cambodia	Lao PDR	Viet Nam
No. of banks surveyed	143	61	39	43
No. of respondent banks	61	33	8	20
Respondent banks' share of total banking assets	75%	81%	61%	74%
Share of respondent banks involved in trade finance	87%	82%	88%	95%
Total merchandise trade (US\$ billion)	798	52	15	731
Size of bank-intermediated trade finance (US\$ billion)	152	1.6	0.5*	150
Average share of bank-intermediated trade finance	19%	3%	<3%	21%

Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3 (see Box 2.1). * The estimated size of bank-intermediated trade finance in the Lao PDR is based on data received from three banks providing this information. Total bank assets for the Lao PDR refer to the 2021 due to unavailable estimates for 2022.

While foreign finance was outside the scope of the survey, it should not be assumed that such financing arrangements are systematic. Survey interviews indicated both a variety of financing models and no financing at all. In some cases, the import of inputs is provided by the parent company and does not involve any financing. In other cases, foreign suppliers require cash-in-advance payments, with either local banks or foreign banks of the suppliers offering overdraft or working capital credit lines to local factories (normally fully collateralized by property) to purchase the imported goods. Local producers may also apply for collateralized lines of credit via the subsidiary of the bank operating with the main exporting country.

Trade finance instruments

Local trade finance is mainly supplied by large banks, through traditional trade finance instruments and working capital. Scale matters in trade finance, as international trade operations of banks require infrastructure, such as correspondent banking relationships (CBRs), and skills in handling trade finance

instruments and associated risks. There are clear leaders in the Mekong-3.

In Viet Nam, the five largest banks by assets account for over 50 per cent of the trade finance market by US dollar value, and the ten largest banks account for over two-thirds of total estimated trade finance assets. Although the banking sector has historically experienced high levels of concentration in East Asia (Lapid *et al.*, 2023), the shares of assets of the top three banks have declined considerably in Cambodia and Viet Nam over the last decade and are below levels of more advanced countries in the region such as Malaysia, the Philippines or Thailand. Despite remarkable progress, the Lao PDR still records high levels of concentration of banking assets, which reflects its level of financial development.⁴

Certain subsidiaries or branches of international banks might not have large domestic asset portfolios in the Viet Nam. However, compared to their local banks' assets, they have rather important trade finance assets. The survey generally finds that a relatively wide range of trade finance products and solutions are offered by banks in the Mekong-3 (see Figure 2.1).

The 2023 IFC survey of trade finance in the Mekong-3

Following the model of the IFC Global Trade Finance Program (GTFP) survey and the expanded regional survey of trade finance in the Economic Community of West African States in 2021, the IFC surveyed banks in Cambodia, the Lao PDR and Viet Nam on the state of trade finance for 2022. The survey included around 30 questions to collect a wide range of information about the cumulative asset volumes of trade finance recorded by local banks for 2022, the trade finance products offered, their prices and the sectors of the economy that received trade finance from the banks.

The survey also enquired about constraints to the demand and supply of trade finance, support actions that may help banks to diversify their products, and each country's outlook for trade finance as perceived by their respective banks.

Sample size

The sample included all the banks listed on the central bank websites of the Mekong-3 as of December 2022.



Private, state-owned and foreign-owned banks were included in the sample, conditional on having a local presence in the Mekong-3 and listed with their central bank. The IFC collected the contact emails of the trade finance units of these banks and emailed the survey link directly to them. When contact details of the trade finance units could not be tracked, the IFC used the banks' generic email addresses.

The survey protocol included several follow-up actions to ensure completion and to revise inconsistent responses. In addition, the bank associations in the Mekong-3 shared the survey link with the banks in their network to increase response rates. Banks completed the survey between April and August 2023, and all responses up to 20 August are included in the results.

Bank assets

The assets of the banks that responded to the survey represent 81 per cent of the 2022 total bank assets reported by central banks in Cambodia, 65 per cent in the Lao PDR and 74 per cent in Viet Nam. Information was collected from banks of different sizes, including four of the top five banks in Cambodia and Viet Nam, and medium and smaller banks. In Cambodia and Viet Nam, the three top banks that responded held around 39 and 36 per cent of the total bank assets in the country, respectively. Although the response rate to the survey in the Lao PDR was lower, its largest bank, with over 40 per cent of the assets, is also the main contributor to trade finance data captured.*

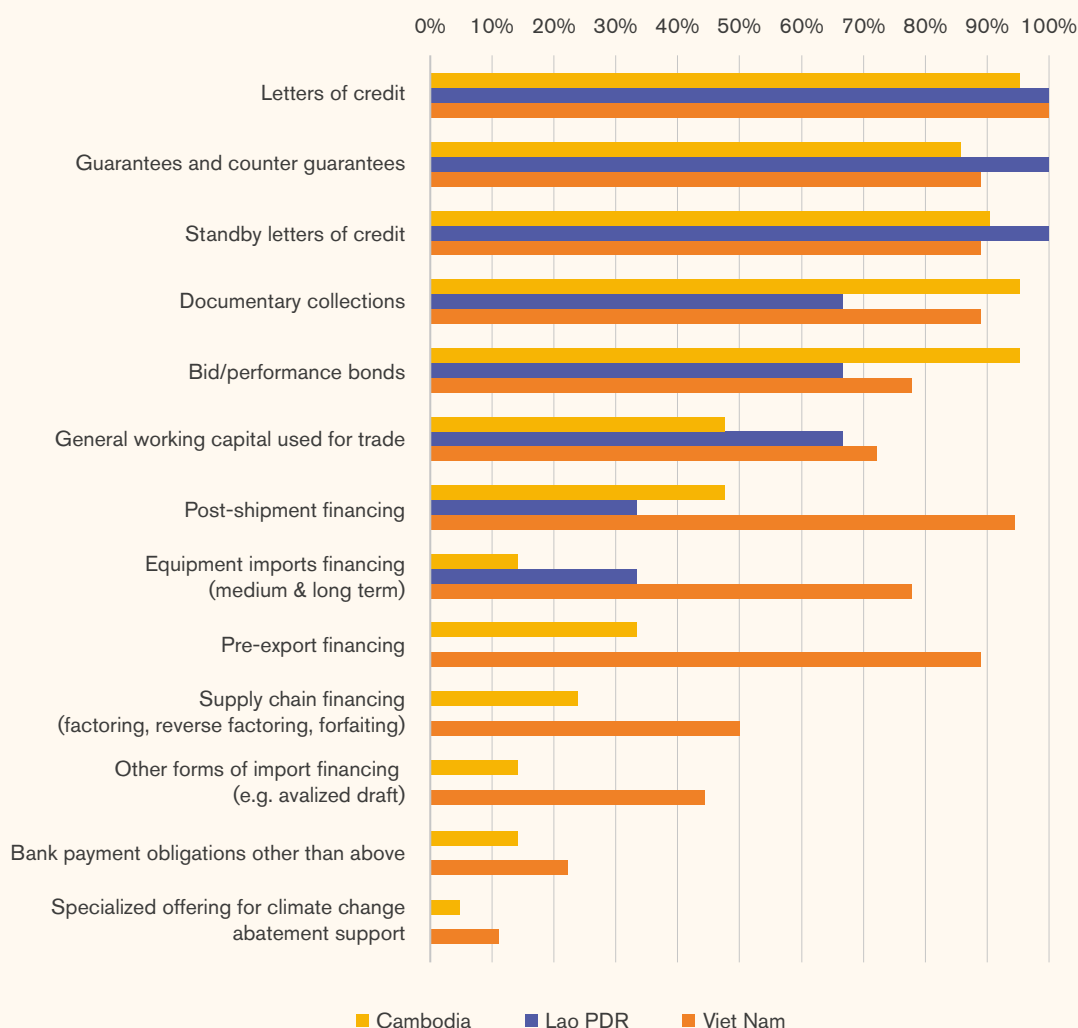
* Annex II contains further information about the relationship between bank size and trade finance portfolio based on regression analysis and the methodology used to estimate assets.



Diamond Island, the commercial hub in the heart of Phnom Penh, Cambodia.

FIGURE 2.1

Trade finance instruments offered by banks in the Mekong-3, 2022 (as a share of banks in per cent)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

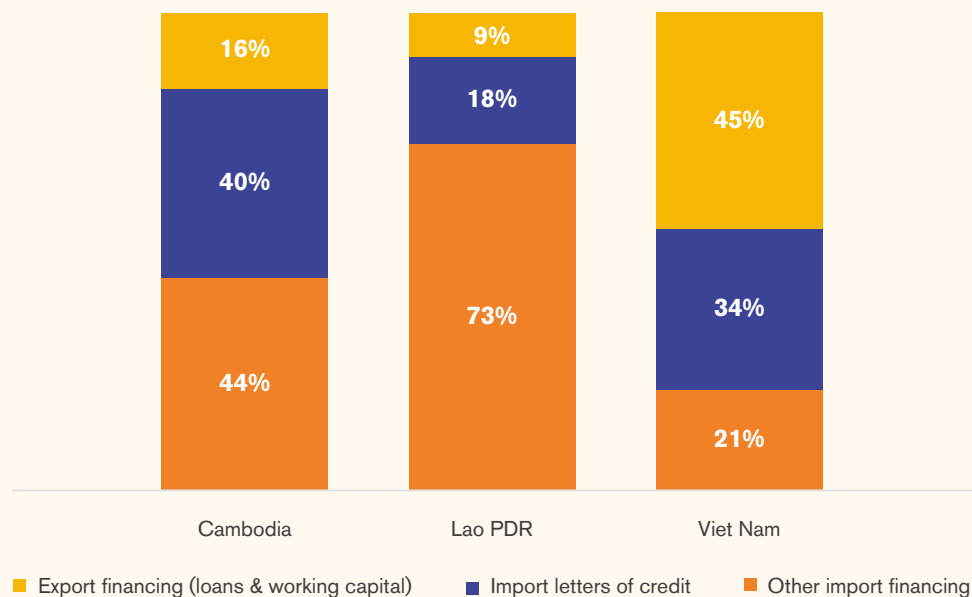
Surveyed banks routinely offer traditional trade finance instruments such as letters of credit, documentary collections and other guarantees on the import side, and loans that largely comprise short-term, working capital and pre-export finance. A third of banks in Cambodia and close to two-thirds of banks in Viet Nam indicate that they are in a position to offer some form of SCF. However, estimates from the survey suggest that

only a few banks in Viet Nam – and even fewer in Cambodia – are really active in providing it to their clients.

The data show that a non-negligible share of each country's imports is paid cash in advance, leaving a fraction of imports to be supported by formal trade finance instruments, mainly guarantees such as letters of credit and documentary collections, but also import loans (see Figure 2.2).

FIGURE 2.2

Trade finance instruments in the Mekong-3 for imports and exports, 2022 (as a share of all instruments, in per cent)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

According to the survey, import letters of credit represent about 34 per cent of the 2022 trade finance assets in Viet Nam (see Figure 2.2), which would bring the value of the market for the instrument to approximately US\$ 51 billion.⁵ The share of letters of credit in total trade finance assets is similar to Viet Nam. With an estimated local trade finance market of US\$ 1.6 billion, a 40 per cent share would value letters of credit at around US\$ 0.6 billion in trade finance in 2022, supporting about 2 per cent of imports. In the Lao PDR, letters of credit are provided by one in five of the banks surveyed, supporting less than 1 per cent of imports and highlighting an overall limited use of trade finance products in the country.

While banks can routinely arrange letters of credit and other documentary credits, survey interviews confirm the existence of several obstacles for their use, such as a lack of available documentation to support their issuance, market power from suppliers originating in larger economies (i.e. China, Thailand, Viet Nam) often demanding a pre-payment for their inputs; and

perhaps most importantly, perceived uncertainties owing to collateral requirements.

Other than letters of credit, the survey highlights the importance of working capital used for the purpose of trade. Working capital in Cambodia captured in the survey is estimated to be around US\$ 0.6 billion, representing around 40 per cent of the total trade finance assets in the country and covering 1.2 per cent of the total trade in 2022 (see Table 2.2). The survey shows that US\$ 29 billion in working capital is used in Viet Nam for the purpose of trading. This is a smaller share of trade finance assets than in Cambodia (20 per cent against 40 per cent) and supports 4 per cent of its total merchandise trade.

There are several reasons for the use of working capital. Exporters of finished goods (e.g. garments) are typically paid on a 90-day basis – without the possibility to benefit from cash advances often involved in SCF. Facing pressure from their own suppliers to pay cash-in-advance for their inputs,

TABLE 2.2

Working capital for trade finance, 2022

	Cambodia	Viet Nam
Working capital (US\$ billion)	0.6	29
Working capital as share of total trade finance	40%	20%
Working capital as share of total merchandise trade	1.2%	4%

Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

the only way to avoid being cash-strapped is either to secure working capital lines or to receive trade loans (import and pre-export loans). However, as observed in Cambodia, revolving, short-term working capital lines are preferred for their flexibility against more structured loan agreements. Generally, they are available only to clients with sufficient land or building collateral and are typically more expensive.

For many new small and medium-sized enterprises (SMEs) with limited credit history and no land collateral, these are non-starter conditions. According to local surveys, 70 per cent of SMEs in Viet Nam have difficulty accessing such working capital and must use their own money or borrow from informal sources at higher costs.⁶ In industrial supply chains involving many SMEs, the difficulty to access trade finance through working capital – as a substitute for even more formal and documented forms of trade finance – may be just one of many reasons why the coverage rate by local banks of certain sectors such as textiles and clothing and electronics is so low.⁷

Most of the local banks surveyed report that they do not provide SCF because of insufficient demand from clients. Some of the local banks provide distribution finance, covering mainly domestic flows, with banks remaining the main suppliers of SCF. Major bottlenecks are the lack of reliable local SCF platforms and conservative credit culture.

Trade finance across sectors

Wholesale and retail trade, agriculture and fishing, and intermediary industrial products (metals, plastics) are the main sectors to receive bank-intermediated trade finance (see Table 2.3). Consistent with the two-speed trajectory of

trade growth shown in Chapter 1, local banks have a limited or no role in supporting trade arising from importing inputs or exporting locally produced goods by foreign-owned firms in the electronics sector and, to a lesser extent, textiles and clothing sector. Local bank services are rather oriented toward locally owned activities (e.g. food, fisheries) or import-intensive, fast-growing sectors (e.g. construction).

Which sectors received trade finance by local banks varies across the Mekong-3. Viet Nam's local trade finance supports the greatest number of sectors. Survey results establish that all 18 industries covered benefited from support by at least 50 per cent of the banks, while ten sectors received trade finance from 80 per cent of the banks (see Figure 2.3). The distribution of total trade finance between imports and exports in Viet Nam is relatively balanced (55 per cent to 45 per cent; see Figure 2.2), concentrating on intermediate goods and inputs (e.g. plastics, metals, textiles), agriculture and fishing products, and construction materials.

The distribution is less homogeneous in Cambodia and the Lao PDR, where trade finance is mainly supplied for imports (84 per cent and 91 per cent, respectively; see Figure 2.2). In Cambodia, different banks supported different sectors. Hence, most sectors received trade finance from less than 40 per cent of the banks. The sectors of construction⁸, food products and beverages, and wholesale and retail received most of the trade finance from the local financial sector in Cambodia: 62, 52 and 48 per cent of the banks surveyed supported trade activities in these three sectors, respectively. In the Lao PDR, agriculture, forestry, fishing and wholesale and retail receive the most trade funding: 100 and 68 per cent of the banks, respectively, and the only sectors listed by more than half of the banks.

TABLE 2.3

Distribution of trade finance across the surveyed banks' top three sectors, 2022 (in per cent)

	Cambodia	Viet Nam
Agriculture, forestry, fishing	8.1	27.0
Chemicals	0.0	0.0
Coke & refined petroleum products	3.3	3.0
Computer, electronics	0.0	0.0
Construction	1.4	25.0
Electricity, gas, steam & air conditioning supply	29.2	2.1
Food products, beverages	19.4	0.0
Metals	11.9	16.4
Motor vehicles & transport equipment	0.0	0.3
Other manufacturing	0.0	0.7
Pharmaceuticals	2.4	0.5
Plastics	0.0	1.6
Textiles	0.0	8.2
Transport	0.4	0.0
Wholesale and retail trade	24.0	15.4
Total	100	100

Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

Trade finance for firms owned or led by women

Research indicates that firms owned or led by women are often small businesses and more dependent on trade finance (World Bank and WTO, 2020). Yet, evidence from the Asian Development Bank (ADB, 2016, 2017, 2021) shows that trade finance requests made by women-led businesses have a higher rejection rate and fewer than 20 per cent of the women interviewed had received trade finance.

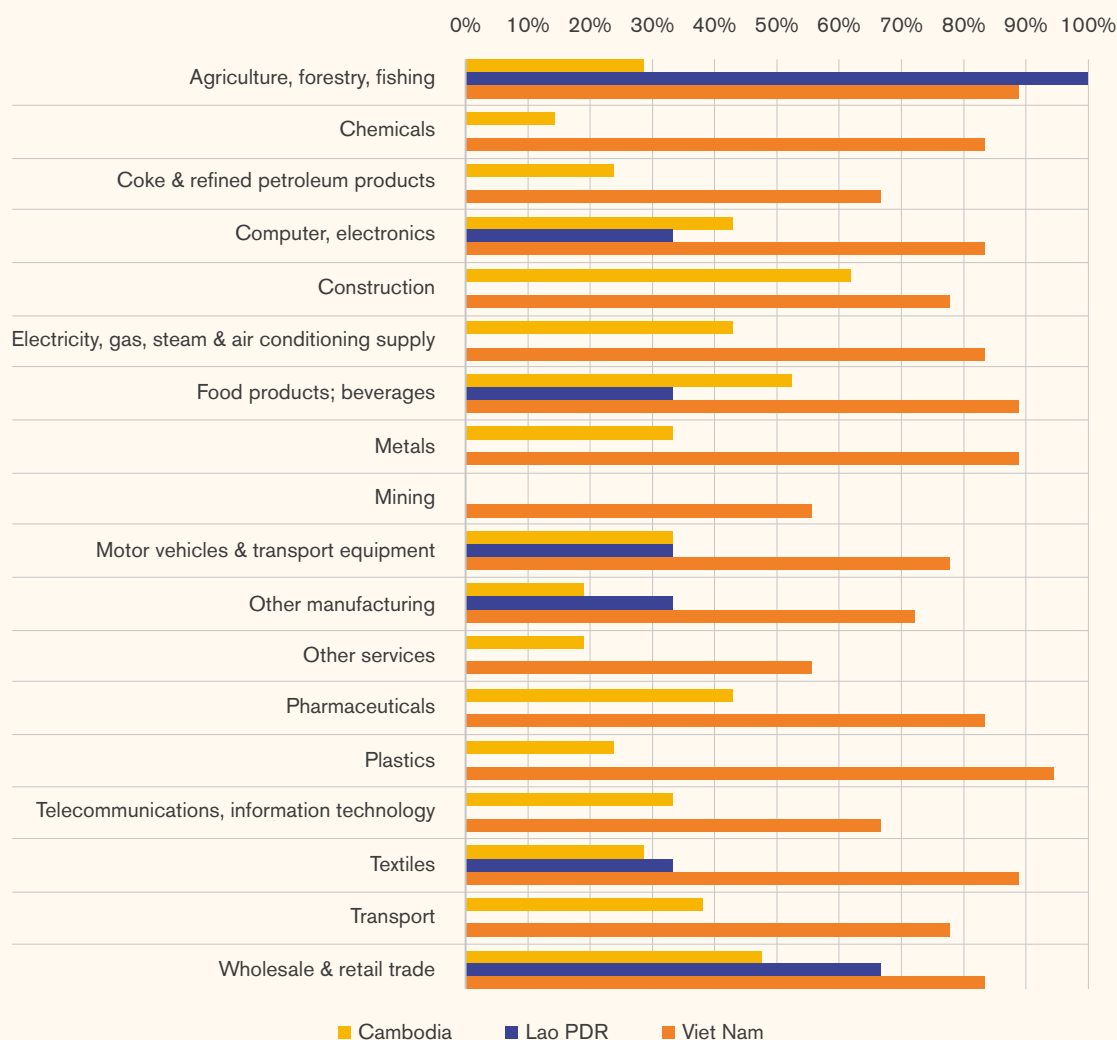
The information collected in the survey reveals that around 51 per cent of the surveyed banks in the Mekong-3 do not track whether or not they provide trade finance to micro, small and

medium-sized enterprises (MSMEs) owned or led by women (see Figure 2.4), which makes it a challenge to discuss with any certainty the gender gap in access to trade finance.

Around 41 per cent of banks report that they provide trade finance to women-owned or led MSMEs and only 7 per cent of the banks do not. These numbers mask some heterogeneity: the gender disparity in access to trade finance is more accentuated in Cambodia and the Lao PDR, where only 37 per cent and 33 per cent of banks, respectively, report allocating trade finance to women-owned or led MSMEs, compared to 47 per cent in Viet Nam. However, few banks reported actual numbers. Of those that did, 3 per cent was the highest share of the bank's total trade finance allocated to women-owned or led MSMEs.

FIGURE 2.3

Bank-intermediated trade finance in the Mekong-3 by sector, 2022 (in per cent)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

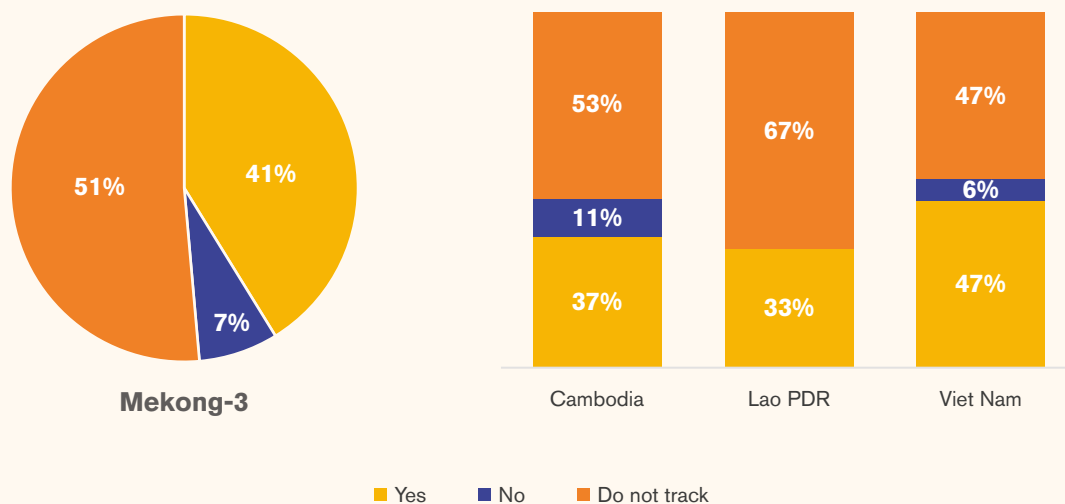
Trade finance for climate-related activities

Despite the urgency of mitigating or adapting to climate change, only a small fraction of the banks in the survey fund climate-related trade activities. In Cambodia, only 11 per cent

of the banks report that they provide trade finance to climate-related activities and 26 per cent do not (see Figure 2.5). In Viet Nam, almost 29 per cent of the banks finance climate-related trade against 24 per cent which do not. In the Lao PDR, 33 per cent of the banks surveyed do not finance climate-related trade activities. Furthermore, large shares of banks surveyed in the Mekong-3 fail to track such data.

FIGURE 2.4

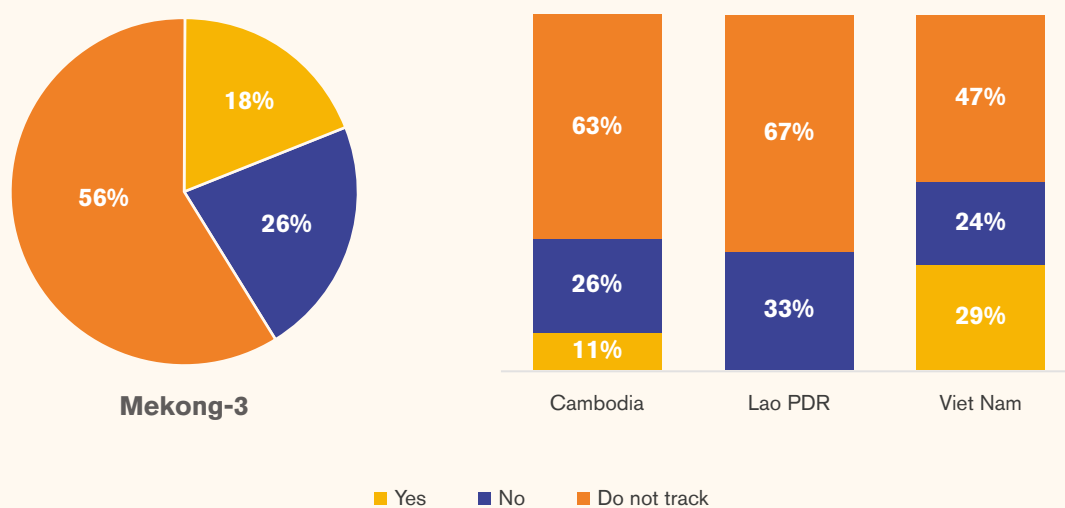
Share of banks in the Mekong-3 providing trade finance to MSMEs owned or led by women, combined and by economy, 2022 (in per cent)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

FIGURE 2.5

Share of banks in the Mekong-3 providing trade finance to climate-related activities, combined and by economy, 2022 (in per cent)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

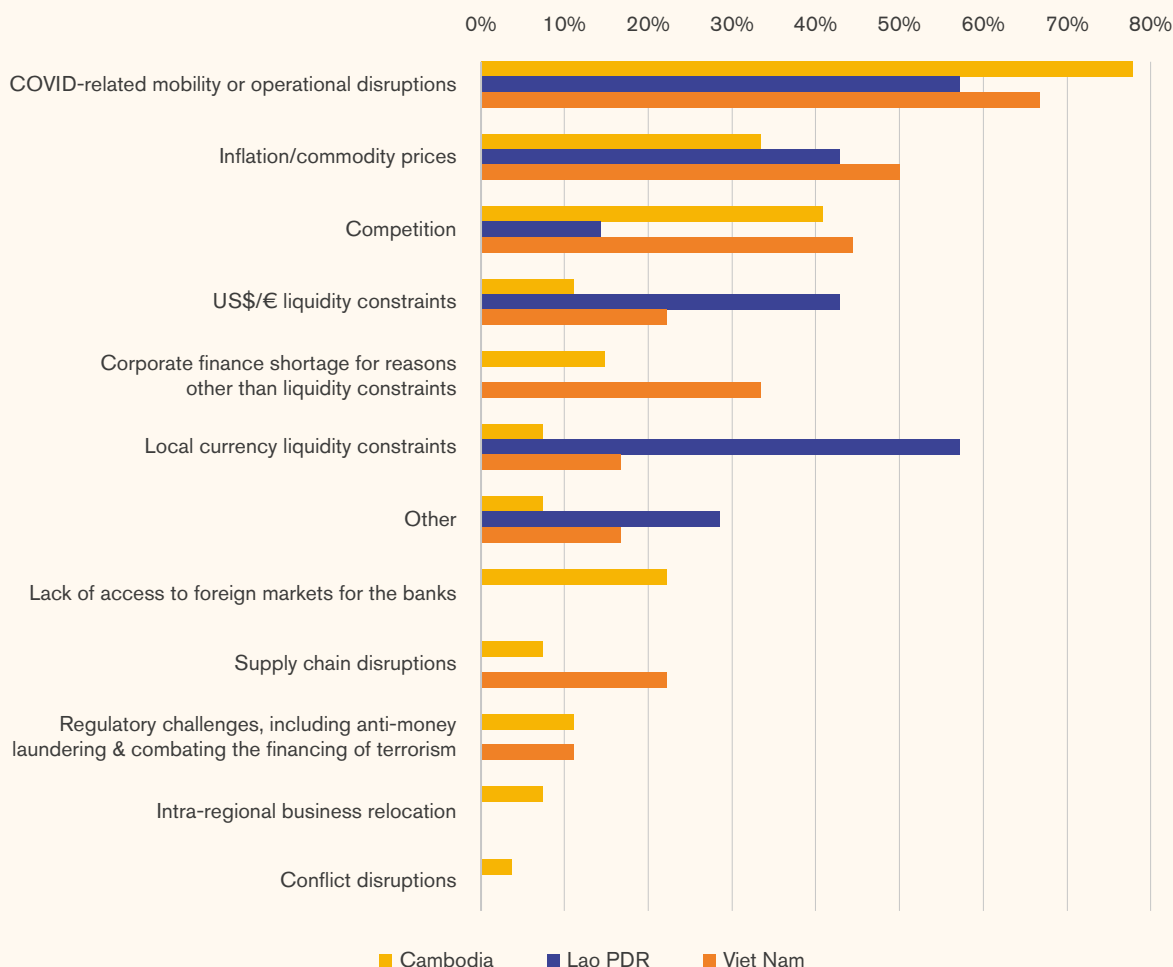
Trade finance constraints

The respondent banks identify constraints relating to the COVID-19 pandemic, the rise of inflation and strong competition between banks as factors which negatively

affected the growth of their trade finance portfolio in 2022 (see Figure 2.6). Around 60-80 per cent of respondent banks identified disruptions to mobility and operations due to the COVID-19 pandemic⁹ as the main constraint. Inflation and competition in the market were mentioned by some 40 per cent of banks in Cambodia and Viet Nam.

FIGURE 2.6

Main constraints to trade finance growth in the Mekong-3, 2022 (share of banks affected by each constraint, in per cent)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

Inflation and its heterogeneous dynamics across countries may impact trade finance markets, for example, when transaction ceilings are not adjusted to rising prices of traded goods or by reducing returns over time to working capital loans. In the Lao PDR, unlike in Cambodia and Viet Nam, access to local and foreign currency liquidity are reported as major constraints by 57 and 43 per cent of banks, respectively. Some 11 per cent of banks in Cambodia and Viet Nam report the regulatory environment as one of the top three constraints to trade finance growth, implying that a sound institutional environment is often a prerequisite for productive economic activities (Asteriou *et al.*, 2021).

Nevertheless, banks in Viet Nam are generally optimistic about future trade finance growth, with 78 per cent expecting growth in their activities in the year ahead. Banks' perception in Cambodia is less optimistic; only 56 per cent of the respondents expect an increase in their trade finance portfolio. However, 22 per cent of the banks did not provide information about their trade finance growth expectation. In the Lao PDR, the percentage is smaller, with 43 per cent of the banks expecting an increase within the 12 months following the survey, but with many missing values recorded among the banks surveyed in the Lao PDR.

The respondent banks rated the key constraints affecting their capacity to meet the trade finance demand of their customers on a scale from 1 to 5. The higher the rating, the higher the constraint. Limited availability of low-cost funding is the most constraining challenge, with an average rating of 3.3 out of 5 (see Figure 2.7). Constraints relating to internal risk rating and customer collateral requirements are second, with an average rate of 3.0. Increased correspondent bank requirements, new trade finance products entering the market, insufficient line limits from correspondent banks and a lack of information about market segments all scored above 2.5.

Supply chain finance and reverse factoring

Alleviating these supply-side constraints will help banks to support client requests better. Importantly, promoting modern trade finance instruments such as SCF/reverse factoring (see Box 1.1 in Chapter 1) has the potential to boost bank capacity to meet the demand of their customers. As discussed earlier, the intake of SCF is very low compared to traditional trade finance instruments. Only half of the banks in Viet Nam offer this product, compared to one in four in Cambodia and none in the Lao PDR (see Figure 2.1). The total SCF volume is estimated at US\$ 2.9 billion in Viet Nam, representing in relative terms 2 per

cent of the total trade finance portfolio and only 0.4 per cent of the respondent banks' total assets (see Table 2.4).

The numbers are significantly lower in Cambodia, where SCF is estimated at US\$ 40 million, which is equivalent to 2.4 per cent of the total trade finance assets and 0.1 per cent of the surveyed banks' total assets. Figures for both countries refer exclusively to local bank-intermediated SCF and can be considered a lower bound given that foreign banks and development finance institutions also provide this type of finance in Cambodia and Viet Nam.

The respondent banks report the need for technical and financial assistance to create trade finance capacity for instruments that they do not provide (see Figure 2.8). Overall, the request in Cambodia and Viet Nam is for help with more sophisticated products such as SCF and climate change abatement. Banks in Cambodia would also like to have technical and financial support for pre-export and equipment import financing.

Trade finance rejection rates

Viet Nam has a more dynamic and active trade finance ecosystem, while Cambodia takes a more risk-averse approach to trade finance business. The survey revealed that banks reject an average of 15 per cent of trade finance requests, which accounts for around US\$ 21 billion in unmet demand (see Table 2.5). The rejection rate varies significantly between Cambodia and Viet Nam. While the rate of 12 per cent in Viet Nam is in the same range as the average rate of 9.5 per cent for the emerging markets that participated in the IFC Global Trade Finance Program (GTFP) 2023 survey¹⁰, the 23 per cent rejection rate for Cambodia is twice as high. The 10 per cent rejection rate in the Lao PDR is the lowest of the Mekong-3. However, the insufficient sample size makes it difficult to consider this result representative.

These survey insights depict the different risk appetites and supply-demand balance in these two markets. Box 2.2 provides further evidence on the demand for finance from firms engaged with international trade in Viet Nam.



Rejections of trade finance requests are attributed to a lack of collateral, high credit risk and information asymmetry.

FIGURE 2.7

Key constraints on banks in the Mekong-3 to meet trade finance demand, 2022 (1 = not a constraint, 5 = top constraint)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

TABLE 2.4

Supply chain finance and reverse factoring, 2022

	Cambodia	Viet Nam
Supply chain finance/reverse factoring (US\$ billion)	0.04	2.9
Supply chain finance as share of trade finance	2.4%	2.0%
Supply chain finance as share of surveyed banks' assets	0.1%	0.4%

Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

The 2023 IFC firm-level survey of trade finance: How firms in Viet Nam finance trade operations

Firms' ability to finance their operations affects their participation in international trade. The riskiness and longer time lag in cross-border transactions require both financing of working capital over short horizons and insurance to protect against counterparty defaults.

Between June and August 2023, the IFC surveyed a representative sample of manufacturers and traders in Viet Nam that had engaged at least once in international trade between 2019 and 2021. The survey focused on how firms finance international trade, explored their demand for and access to trade finance products and captured heterogeneity by firm's characteristics and pricing conditions. Foreign affiliates indicated that they were producing only for the foreign parent company and did not need additional financing.

Trade finance need

Three out of four firms trading internationally report no need for trade finance. Exporters and importers report predominantly relying on internal funds to finance their working capital over external finance. This overreliance on internal funding is typically interpreted

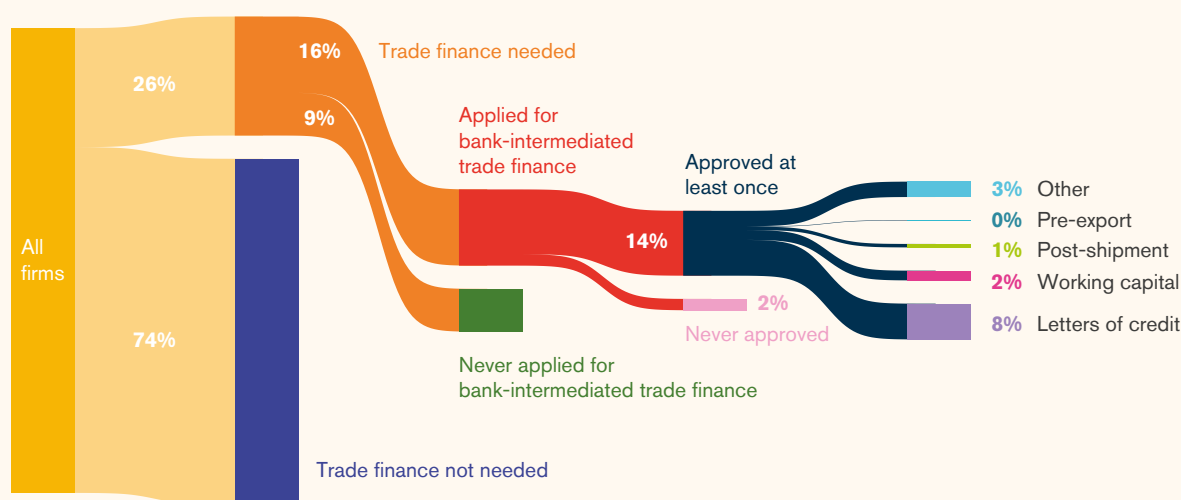
in the literature as evidence of credit constraints (Fazzari *et al.*, 1988, 2000). Despite the potential for trade finance to bridge the short-term capital gap, only 16 per cent of importers and exporters report having used trade finance.

Trade finance instruments

The use of trade finance leans largely towards traditional trade finance instruments. Mirroring the bank survey's results, firms report predominantly leveraging letters of credit (57 per cent), irrespective of firms' size, ownership type (domestic or foreign) or main sector of operations. General working-capital borrowing is the second most used and most demanded trade finance product, echoing the bank's survey results on the importance of working capital for trade.

The demand for other trade finance instruments is more sparse and likely to depend on specific firm characteristics. For example, bid/performance bonds are more likely used by domestic, trading small and medium-sized enterprises (SMEs). Non-traditional trade finance instruments such as supply chain financing are largely non-existent.

Trade finance use in Viet Nam (in per cent)



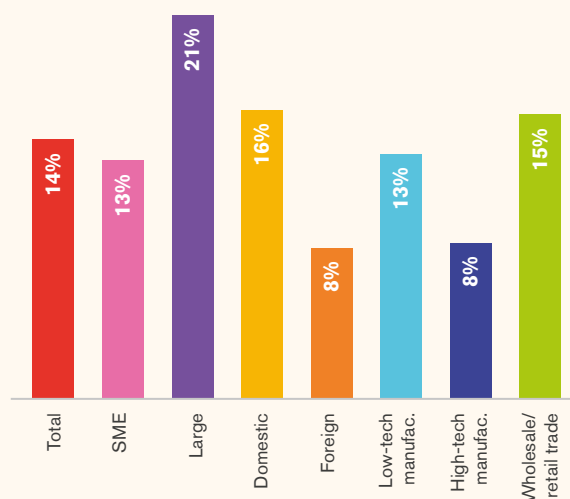
Source: IFC firm-level survey, 2023. The results presented are from an interim sample of 653 firms.

Trade finance use

Trade finance use differs significantly across different types of firm. Large firms (at least 100 employees) are over 65 per cent more likely to use external trade finance than firms with 5-99 employees. Perhaps more counterintuitively but consistent with the bank survey results, foreign-owned and high-tech manufacturing firms tend to use trade finance much less often: domestic companies are twice as likely to use trade finance than foreign-owned companies. Similarly, the share of wholesalers and retail traders using trade finance is almost twice that of firms in high-tech manufacturing.

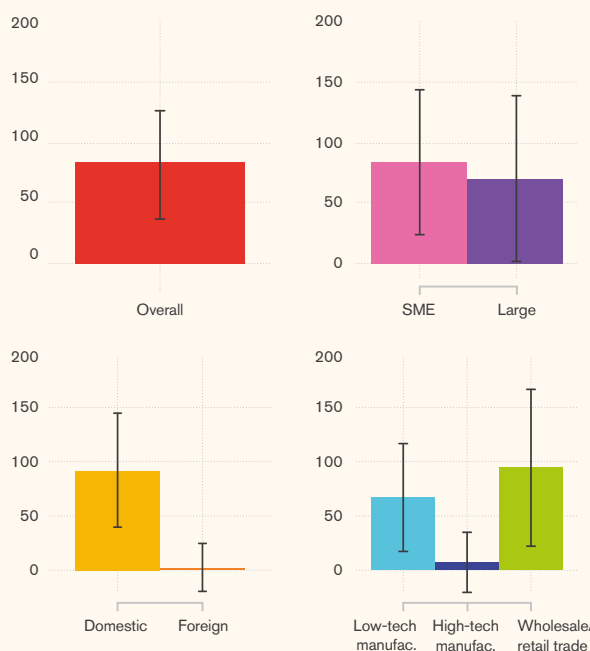
This differential use of trade finance likely reflects differences in the structure of supply chains as well as the differences in the risk-return profiles of firms or transaction types. For example, foreign-invested firms may receive financing from their parent company as well as having access to banks located outside Viet Nam. Firms in high-tech manufacturing, a sector likely dominated by electronics manufacturing, are the least likely to use bank-intermediated trade finance. This sector includes large subsidiaries or affiliates of multinationals that either have a lower need for working capital financing or are able to access finance from their parent companies.

Share of firms using bank-intermediated trade finance (in per cent)



Source: IFC firm-level survey, 2023. Results are unconditional means.

Collateral (in per cent of financing received)



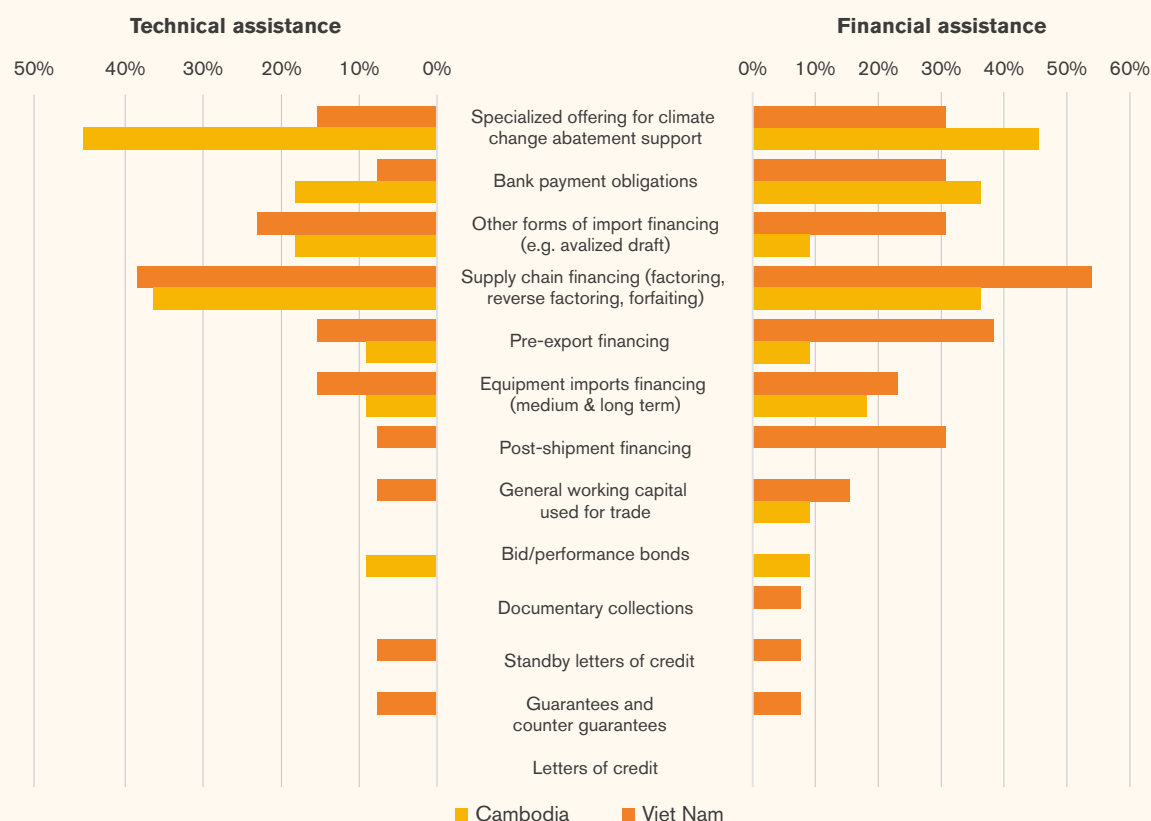
Source: IFC firm-level survey, 2023. Results are conditional on type of trade finance instrument.

Differences in firms' risk profiles are evidenced by the collateral requirements and approval time for trade finance applications. Foreign firms and firms in high-tech manufacturing have lower collateral requirements. The collateral requirement differential between SMEs and large firms is not as conspicuous, suggesting that foreign firms and firms producing electronics are likely to obtain better lending conditions, regardless of their size. More favourable lending terms are not limited to the lower cost of funds. Firms in high-tech manufacturing appear to have their trade finance applications approved significantly faster – at around one-third of the time required by firms in trade or low-tech manufacturing.

The speed in processing does not reflect differences in how firms file their applications. Irrespective of a firm's size or sector, most of the applications are filed on paper. This low usage of online processes, as well as the lack of more modern instruments, such as platforms or supply chain finance, suggests ample scope for improvements in efficiency in trade finance provision in Viet Nam.

FIGURE 2.8

Trade finance technical and financial assistance needs of respondent banks, 2022 (in per cent)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

TABLE 2.5

Trade finance gaps and rejection rates in the Mekong-3, 2022

	Total	Cambodia	Lao PDR	Viet Nam
Size of bank-intermediated trade finance (US\$ billion)	152	1.6	0.5	150
Average approval rate of trade finance requests	85%	77%	90%	88%
Average rejection rate of trade finance requests	15%	23%	10%	12%
Size of the trade finance gap (unmet demand) (US\$ billion)	20.8	0.5	0.05	20.3

Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

High rejection rates disproportionately affect SMEs, which are often unable to produce bankable credit files given that they frequently do not have established organizational structures, customarily struggle to produce and maintain records acceptable for financing, or lack sufficient collateral. The main rejection reasons given by the banks surveyed included: insufficient collateral (30 per cent); insufficient documentation (27 per cent); and high credit risk of applicants (see Figure 2.9).

The difficulty in assessing a client's credit risk and loan requests exceeding the client's limit are also important factors. In Viet Nam, an applicant's high credit risk and insufficient collateral are the primary reasons for rejecting a trade finance request, accounting for over half of rejections (see Figure 2.10). In Cambodia, insufficient documentation is the main reason why a third of credit applications are rejected. In the Lao PDR, half of the rejections were because of insufficient collateral, pointing to risk aversion and the low maturity of the local banking system.

Correspondent banking relationships

Broadly defined, a correspondent banking relationships (CBR) is where a bank has an arrangement with a third-party financial institution to receive services and/or act on its behalf in another jurisdiction. A bank's access to CBRs allows them to execute trade transactions regionally and globally. It is an important condition for being able to supply trade finance. Sufficient access to correspondent banking means, for example, that the local demand and clearance of international transactions in foreign currencies can be met, particularly in US dollars and euros, and that letters of credit can be issued and confirmed internationally.

In Viet Nam, around 29 per cent of the banks surveyed have fewer than 10 CBRs and 53 per cent have 10-50 corresponding banking relationships. Three Vietnamese banks display large numbers of 300, 641 and 1,163. The average number of CBRs per bank is 15 (excluding the three outliers). In Cambodia, the range of the numbers of CBRs reported is more homogenous, with a maximum value of 24 and an average of five relationships per bank. Therefore, access to CBRs is more of a constraint in Cambodia than in Viet Nam. Moreover, such access has been stable, with almost three quarters of respondent banks reporting no change in their network in 2022, and 16 per cent reporting an increase in access.



High rejection rates disproportionately affect small and medium-sized enterprises, which often lack sufficient collateral or struggle to produce and maintain financial records.

When asked about their main constraints in accessing CBRs, local banks report the increased regulatory requirements to combat money laundering and terrorism financing, insufficient line limits, increased cost of financing and tenor (i.e. repayment period) restrictions (see Figure 2.10).

Trade finance prices

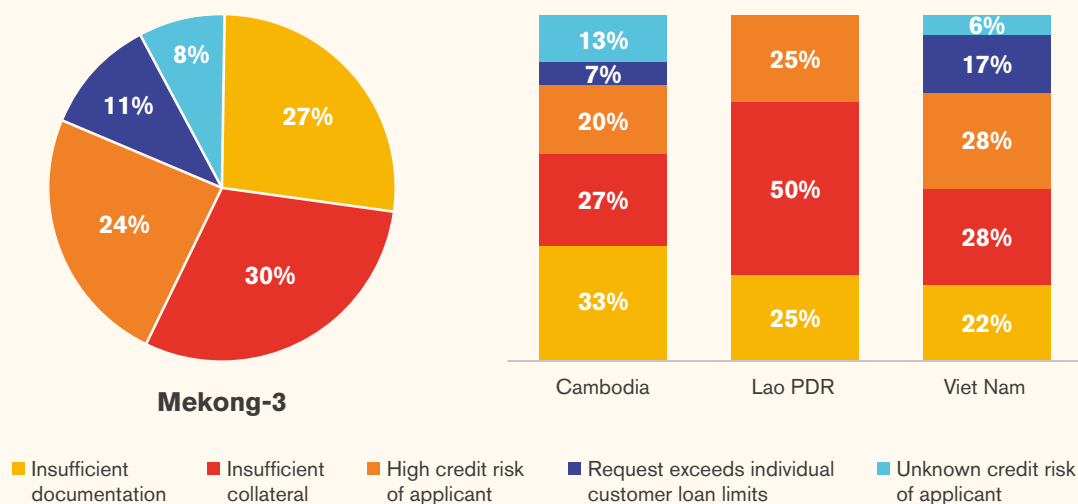
For letters of credit, banks charge fees to compensate for risk, which is affected by the credit history of the client, the country of operation, the nature of the transaction, its duration, as well as any foreign exchange risks. For trade loans, the cost of funds for the bank is an important element of pricing, along with the transaction's overall risk and the market structure.

Letters of credit fees in Cambodia and Viet Nam and interest rates on trade and working capital loans for traders are generally higher than the global emerging market benchmarks, as well as the rates observed in more advanced economies. The average fee for letters of credit in Cambodia and Viet Nam is reported to be 3.25 per cent of the transaction value – compared to a 2 per cent global average for emerging markets and a 0.25-0.50 per cent lower bound typically observed in advanced economies (see Table 2.6).

A short-term working capital pre-shipment finance is priced at around 8 per cent in Cambodia and 7 per cent in Viet Nam, while refinancing rates for import finance is between 6.25 per cent and 8 per cent (see Table 2.7). In Cambodia, prices for some types of letter of credit (post-shipment) can be as high as those of loans, which is in effect, discouraging their use in an already narrow market.

FIGURE 2.9

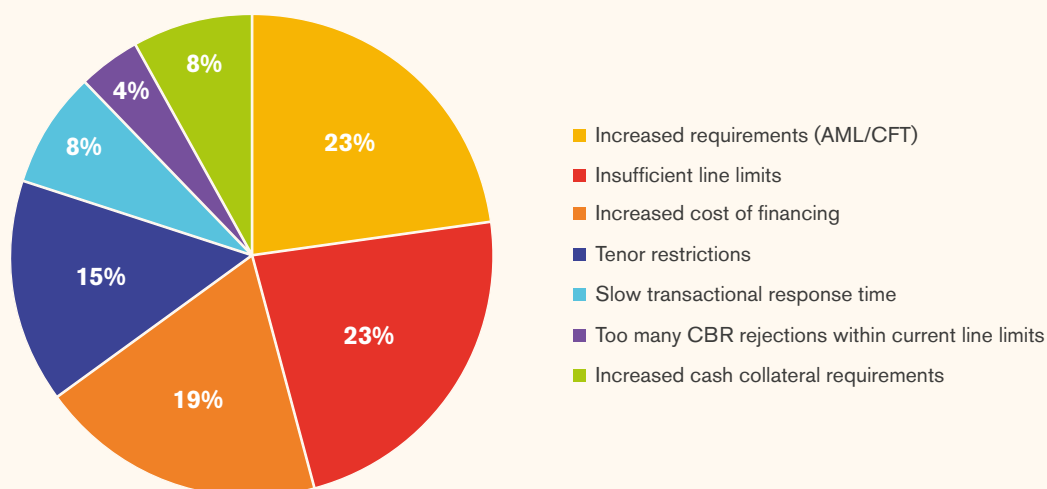
Main rejection reasons reported by banks in the Mekong-3, combined and by economy, 2022 (in per cent)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

FIGURE 2.10

Correspondent banking relationship constraints in the Mekong-3, 2022 (in per cent)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3. AML – anti-money laundering; CBR – correspondent banking relationship; CFL – countering the financing of terrorism.

TABLE 2.6

All-in prices for confirmed letters of credit, 2022 (in per cent)

	Cambodia	Viet Nam
Minimum	2.25%	1.20%
Average	3.25%	3.25%
Maximum	4.00%	5.00%

Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3. All fees are annualized, reported as a percentage of the transaction value charged per annum.

TABLE 2.7

Average prices for selected trade finance instruments, 2022 (in per cent per annum)

	Cambodia	Viet Nam
Cost of funds	3.50%	4.25%
Letter of credit post-financing	8.00%	6.25%
Export financing	8.00%	7.00%
Import financing	8.00%	7.00%

Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3.

Endnotes

1. The estimates of local trade finance are expressed as a range and in the case of Cambodia and Viet Nam were produced using the methodology developed for the purpose of this publication based on the observation of a sufficiency large share of bank trade finance and total assets in the country (see Annex II for a description of the methodology). For the Lao PDR, the available data were insufficient to complete a regression-based estimation of the local trade finance market. A rough estimate based on reporting by banks accounting for 50 per cent of assets, assuming a proportional relationship between total assets and trade finance assets, would suggest that the country's trade finance market would be rather small, at around US\$ 0.5 billion.
2. Calculated as sum of exports and imports divided by GDP.
3. See <https://vir.com.vn/supply-chain-finance-a-solution-to-support-msmes-and-promote-the-economy-86403.html>.
4. Data on banking concentration are available from the World Bank Development DataBank (<https://databank.worldbank.org/home>).
5. This estimate is consistent with data previously collected by the SWIFT banking network prior to the COVID-19 pandemic. The International Chamber of Commerce (ICC, 2020a: 41) reports that SWIFT data show that Asia and the Pacific received 3.1 million letters of credit in 2019, more than any other region. Of this, Viet Nam received 106,114, a slight increase from 105,668 in 2018. According to ICC (2020a), the average value of import letters of credit in the region was US\$ 430,000. If this average is used for the number of Viet Nam's letters of credit, the total amount would be over US\$ 45.6 billion. A 2021 working paper by the International Monetary Fund finds that Viet Nam had one of the world's highest correlations between its import flows and the flows of letters of credit and documentary collections (Ghazaryan *et al.*, 2021).
6. See <https://vir.com.vn/supply-chain-finance-a-solution-to-support-msmes-and-promote-the-economy-86403.html>.
7. See General Statistics Office (2022: 388 and 394). While structured around the presence of large foreign corporations, the electronics sector in Viet Nam has a large eco-system of small companies and vendors operating local factories of parts (semi-conductor circuits, chips, camera modules, phone batteries) produced for local assembly and export of the final goods. Around 68 per cent of the 4,476 companies operating in the electronics sector employ fewer than 50 people; 84 per cent of companies employ fewer than 200 people.
8. Construction is generally a sector that imports a high volume of materials and therefore depends on trade finance.
9. While COVID-related constraints are in principle temporary, there can be delayed and persisting impacts to which the banks may be referring.
10. Based on global survey of over 100 IFC clients participating in the GTFP, which extends and complements the capacity of banks to deliver trade financing by providing risk mitigation in new or challenging markets.

CHAPTER 3

The impact of closing the trade finance gap



Microfinance repayments to a local bank, Lao People's Democratic Republic.

Key findings

- Based on WTO Global Trade Model (GTM) simulations, an increase in the coverage of trade by local trade finance by 20 percentage points and a reduction in financing costs of export and import loans and letter of credit fees to levels prevailing in more advanced economies could raise imports by more than 5 per cent in Cambodia and 6 per cent in Viet Nam, and raise exports by more than 8 per cent and 9 per cent, respectively. This would correspond to a permanent increase in the annual volume of merchandise trade by US\$ 3.5 billion in Cambodia and US\$ 55 billion in Viet Nam.
- Raising the coverage of trade by local trade finance provides the largest contribution to the projected trade increase, followed by the reduction in the financing costs of export and import loans. The reduction of fees for letters of credit would play a marginal role.
- The sectors which deliver the largest contribution are textiles, wearing apparel and leather. Electronic equipment plays a moderate role owing to the large share of foreign-owned firms engaged in related-party trade (i.e. trade with subsidiaries of multinational enterprises) thus employing less domestic trade finance. The trading partners with the largest contribution to the total projected change in trade are China, Southeast Asia and East Asia on the import side and Europe (for Cambodia), North America (for Viet Nam), and China and East Asia (for Viet Nam) on the export side.



This chapter explores the potential impact of an expansion of trade covered by trade finance and a reduction in the costs of trade finance instruments. This is simulated using the GTM, which is a computable general equilibrium model that describes the economic interactions between countries.¹

The costs of international trade are an important determinant of trade flows in the model and comprise a range of transaction costs of which the costs of financing international trade are an important part. The two main components of the costs of financing international trade are intertwined: (i) costs associated with the transaction risk that the counterparty will not pay or will not deliver the goods; (ii) the financial costs to bridge the time when goods are in transit and the costs of using instruments to manage transaction risks.

The costs of financing international trade under different instruments

The analysis distinguishes between four modes of payment or financing employed, each differing in financial costs and transaction risk:

- (i) cash in advance;
- (ii) export and import loans;
- (iii) exports financed with working capital;
- (iv) letters of credit.

For example, in using cash in advance, the importer pays for goods upfront and in doing so, pre-finances the exporter's cash-flow, while incurring a (transactional) risk of not receiving delivery on time or at all, without the benefit of collateral. Using cash in advance, therefore, means that the importer faces a maximal transaction risk relative to other identified instruments and a high financial cost – the opportunity cost of using the firm's own cash flow and engaging its capital, which could be completely lost if the other party does not deliver.

Under the terms of letters of credit, most of the transaction risk is transferred to the bank and no funds are engaged by the importer until it receives the merchandise. The exporter, however, has to pre-finance the production and shipment of the exported goods until it is paid for, although the payment is guaranteed by the letter of credit.²

In the model, the two trade costs associated with financing international transactions, the transaction risk and the financial costs are calculated for each of the four modes of financing.

Total trade costs associated with financing international transactions are calculated as a value-weighted average of the costs of each of the four modes of financing. These trade costs are part of three types of trade cost in the model: export taxes; import taxes; and iceberg trade costs.³ The financial costs as well as the letter of credit fees are incorporated in export and import taxes, reflecting that banking is typically characterized by an oligopolistic market structure with profits. Hence, the financial costs can be considered a tax imposed by the financial sector on the rest of the economy. The costs associated with aversion to risk are modelled as iceberg trade costs, because they reflect a pure loss of resources. The costs of the different trade finance instruments, the share of trade covered by trade finance and the importance of the different trade finance instruments are based on information from the surveys for Cambodia and Viet Nam and data from international institutions and the academic literature for the other regions.⁴



In the model, the transaction risk and the financial costs are calculated for each of the four modes of financing.

Sectoral variation in trade finance coverage is introduced based on the share of exports and imports by foreign-owned firms and the share of related-party trade.⁵ More specifically, based on the analysis of firm level data, it is assumed that foreign firms are half as likely to employ domestic trade finance. Furthermore, the share of domestic trade finance varies between sectors depending on the sectoral share of related-party trade. As a result, the share of domestic trade

finance is, for example, relatively low in the sector “Computers and electronic equipment” because both the shares of foreign-owned firms and related-party trade are high.

Finally, it is assumed that in sectors with a high share of related-party trade, there is less scope to extend the share of domestically provided trade finance because trade finance is already provided by foreign banks. Further details on the technical specification of the model are described in Annex III.

Five counterfactual scenarios

The survey indicates that the shares of trade covered by trade finance provided by domestic institutions is relatively low – 3 per cent for Cambodia and 20 per cent for Viet Nam. In view of these low shares and the high costs for trade finance facilities, the following five counterfactual scenarios explore the potential impact on trade patterns of raising the trade finance coverage and reducing its costs.

Scenario 1: local trade finance increases by 10 percentage points

The share of local trade finance is increased by 10 percentage points. Since comprehensive data on the rejection rates of banks to trade finance requests, which could guide the counterfactual, are missing, increases by 10 percentage points are modelled in the counterfactual. To obtain this change in the model, the overall share of trade finance is increased until the trade-weighted average of trade (exports plus imports) covered by trade finance instruments is increased by 10 percentage points.⁶ When the share of trade finance instruments increases, the shares of other instruments (cash in advance and internal working capital) fall proportionally.⁷

Scenario 2: local trade finance increases by 20 percentage points

The share of local trade finance is increased by 20 percentage points. Given that the global share of trade finance coverage is 60 per cent, as reported by the Bank for International Settlements (BIS, 2014), this represents a relatively modest increase in the share of trade finance coverage. Under this scenario the share of trade covered by trade finance increases across all sectors and trading partners. The costs of financing international trade transactions affects the three types of trade cost – import taxes, export taxes and iceberg trade costs – which all fall under Scenarios 1 and 2, given that the financing costs and the costs associated with risk are falling when the coverage of trade finance rises.

Scenario 3: letter of credit fees are reduced

Letter of credit fees are reduced to the level of China, which acts as a benchmark in the region for Cambodia and Viet Nam. This change reduces only import and export taxes.

Scenario 4: costs of trade finance instruments fall

The costs of trade finance instruments (price of import and export loans and the loans to pre-finance exports under letters of credit) are reduced by targeting the global average margin between trade finance costs and the interbank rates. More specifically, the difference between the costs of trade finance instruments and the interbank rates are reduced to 50 per cent of this difference globally on average. This change reduces only import and export taxes.

Scenario 5: combined Scenarios 2-4

The shocks in Scenarios 2-4 are combined to generate one set of projected trade cost reductions.⁸

Projected trade cost reductions

Under the five counterfactual scenarios, the model generates trade cost reductions both when the share of trade finance increases and when financial costs of trade loans and letter of credit fees are lower. An increase in the share of trade covered by trade finance, for example through more letters of credit and more export and import loans, reduces overall trade costs for two reasons: the financial costs are lower for these instruments relative to the opportunity cost of paying cash-in-advance or of using scarce internal (non-borrowed) working capital and the transaction risk is smaller in case of letters of credit, since it is taken over by the bank in exchange for payment of a fee.

The letter of credit fees are reduced to the regional benchmark (China) in the counterfactual. Letters of credit opening fees reflect operational costs involved in executing instruments, while the typically higher letter of credit confirmation fees are related to the transaction payment risk of importers. In Scenario 3, both opening and confirmation fees are reduced. However, firms in Cambodia and Viet Nam only pay letter of credit confirmation fees for exports when trading with destinations that are at least as risky as these countries. Hence, projected trade cost reductions are larger for imports into Cambodia and Viet Nam than for exports.

The projected change in the costs of import and export loans is based on reducing the premium on the financial costs of trade finance over the interbank rate by 50 per cent compared to the global average premium. Although the higher premium in Cambodia and Viet Nam may reflect exogenous factors such as perceived or actual country risk, it can be argued that these rates reflect a rationed trade finance market with limited supply of trade finance in light of high observed interest rates. Hence, they contain an element of “rent” whereby loan rates are higher than they could be with better access to trade finance, and consequently they are modelled as export and import taxes.

Figure 3.1 displays the projected trade cost reductions for imports and exports of Cambodia and Viet Nam under the five scenarios generating four main insights.⁹

1. Raising share of trade covered by trade finance generates largest trade cost reduction

Raising the shares of trade covered by trade finance would generate the largest reduction in trade costs, followed by lower financial costs of trade finance instruments and finally lower letter of credit fees. The contribution of lower fees is small because the baseline share of trade financed with letters of credit is modest and the fees for this instrument are smaller than the financial costs of trade finance loans.

2. Trade cost reductions mostly due to a drop in import and export taxes

Considering the split between changes in import taxes, export taxes and iceberg trade costs in Figure 3.1, most of the reductions in trade costs are on account of reductions in import and export taxes, while reductions in iceberg trade costs relating to reduced risk are more modest. The reason for this is that reduced risk only comes from raising the share of letters of credit, whereas raising the shares of other trade finance instruments also reduces the financial costs of trade finance.

3. Trade cost reductions from cheaper trade loans larger for exports than for imports

Figure 3.1 shows that the trade cost reductions relating to the decrease of the costs of trade loans are larger on the export side than on the import side. The reason for this is that on the export side not only the costs of export loans would fall, but

also the financial costs when letters of credit are employed, whereas on the import side only the financial costs of import loans fall.

4. Reduced trade costs smaller for exports than for imports

The reduced trade costs on the export side in the first scenario (an increase of the trade finance coverage by 10 percentage points) are smaller than on the import side, whereas this difference is smaller for the 20 percentage point increase scenario. The reason for this is that there is more scope to raise the share of trade finance on the export side by 10 percentage points given the use of other instruments, whereas an increase by 20 percentage points requires larger changes to the share of trade finance instruments and thus larger changes in trade costs.

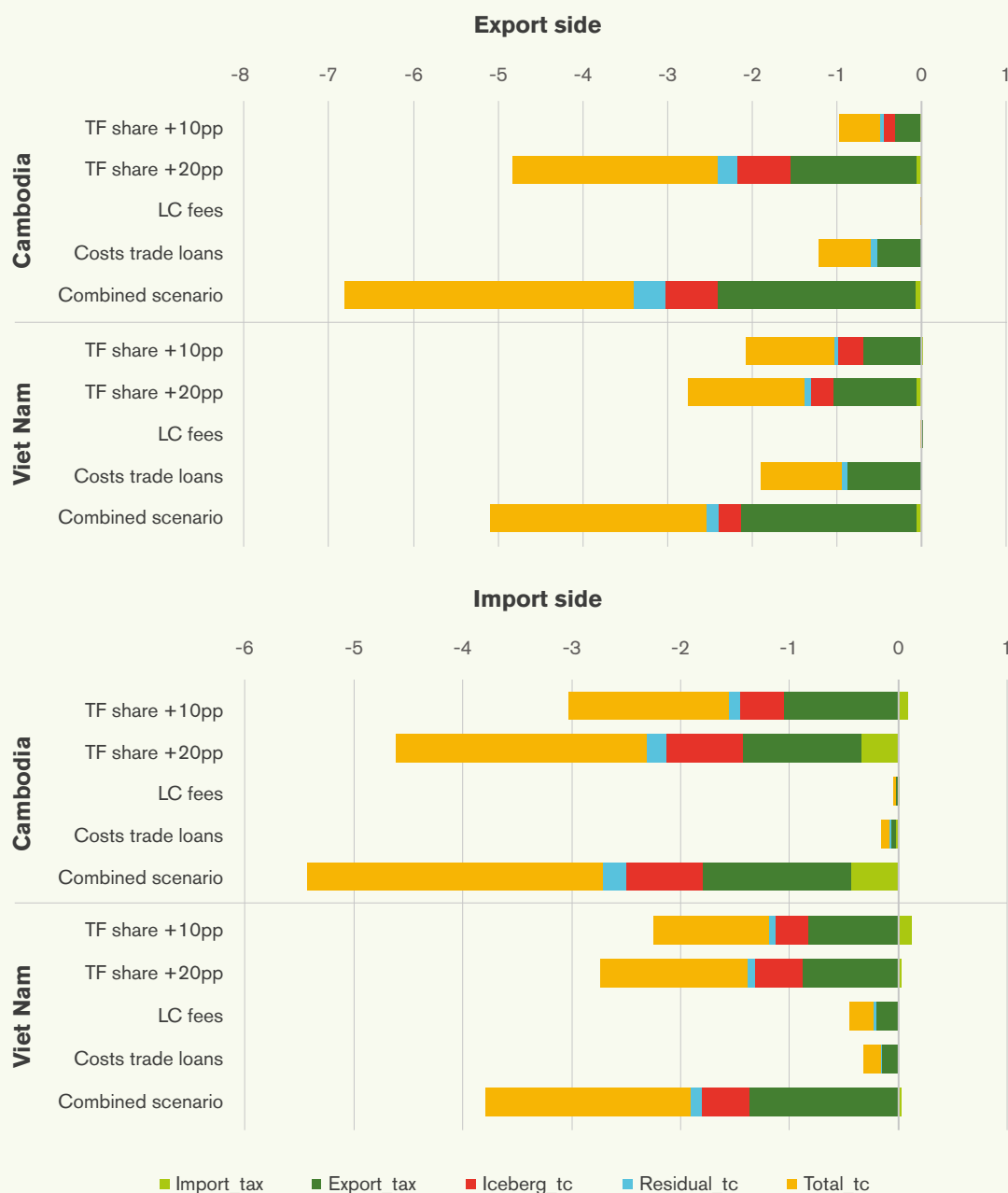
Before presenting the simulation results, it is important to briefly reflect on the way trade is modelled in this study. Following much of the quantitative trade literature, trade is modelled with Armington preferences – a trading structure which allows for the possibility that each country imports goods from each trading partner. Under Armington preferences, firms are not explicitly modelled, so the analysis does not distinguish between extending trade finance for firms already receiving trade finance (intensive margin) and increasing the number of firms receiving trade finance (extensive margin). However, distinguishing between the extensive and intensive margin is not necessary to simulate reliable counterfactuals. As a matter of fact, the impact of trade cost experiments is equivalent in the Armington and Eaton-Kortum models, with the latter allowing for adjustment both along the intensive (the amount traded) and extensive (the number of firms trading) margins (Arkolakis *et al.*, 2012).

In more specialized models such as the Melitz firm heterogeneity model, the impact of counterfactual reductions in trade costs tends to be larger, although the additional effects are in most settings limited (see Costinot and Rodríguez-Clare, 2014). In even more specialized models, shifts in the use trade finance instruments can be studied with firms starting with letters of credit to establish new trade relationships and then moving to other forms of trade finance.

In this study, the more standard Armington structure is employed, since data are lacking on the distribution of trade costs associated with financing international transactions into costs that are variable and fixed in nature and information is missing on changes in trade finance instruments over time.

FIGURE 3.1

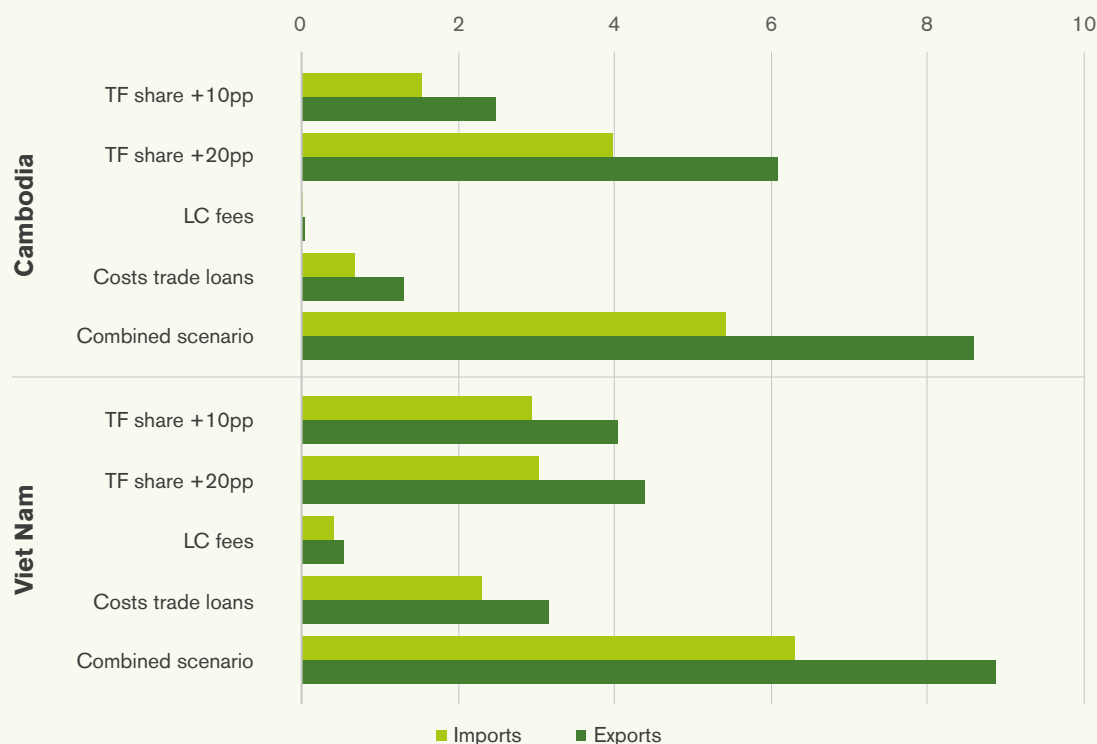
Projected *ad valorem* trade cost reductions under the five scenarios (in per cent)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3, data collected from the World Bank, International Monetary Fund and the International Chamber of Commerce and from the literature, as detailed in Annex III. The figure displays the projected change in *ad valorem* trade costs (in per cent) on exports (upper panel) and imports (lower panel) for the five scenarios, split between three types of trade cost (import taxes, export taxes, iceberg trade costs). The figure shows a simple summation and therefore there is a residual term, which is marginal. LC – letter of credit; pp – percentage points; tc – trade costs; TF – trade finance.

FIGURE 3.2

Projected increase in the volume of trade under the five scenarios (in per cent)



Source: Simulations with the comparative static version of the WTO Global Trade Model extended with trade costs being a function of the costs and shares of trade finance. the figure displays the projected change in the volume of real imports and real exports for Cambodia and Viet Nam for the different counterfactual scenarios in per cent. LC – letter of credit; pp – percentage points; TF – trade finance.

Projected changes in aggregate exports and imports

Figure 3.2 displays the projected change in real exports and imports under the five scenarios, namely: increasing the share of trade covered by trade finance; reducing letter of credit fees; lowering trade loan spreads: and combining all these changes.

Merchandise imports are projected to increase by more than 5 per cent and 6 per cent in Cambodia and Viet Nam, respectively; whereas merchandise exports would rise by more

than 8 per cent and 9 per cent in Cambodia and Viet Nam, respectively. The projected increase is larger on the export side than on the import side, mainly because the costs of financing are larger on the export side as explained above. Although not explicitly modelled, these changes reflect a combination of existing exporters trading larger volumes (intensive margin adjustment) and new firms entering the export market (extensive margin adjustment) because of the reduction in trade costs.

Among the different scenarios, the increase in the share of trade covered by trade finance has the largest impact, while the reductions of letter of credit fees and of trade loan prices play a smaller role because they contribute less to the reduction of trade costs.

The projected increase in merchandise trade in per cent is larger for Viet Nam than for Cambodia, although the modelled trade cost reductions are smaller. The reason for this is that trade costs in Viet Nam are falling more in sectors with a higher trade elasticity, thus provoking a larger response in trade volumes, as further analysed in Annex III.

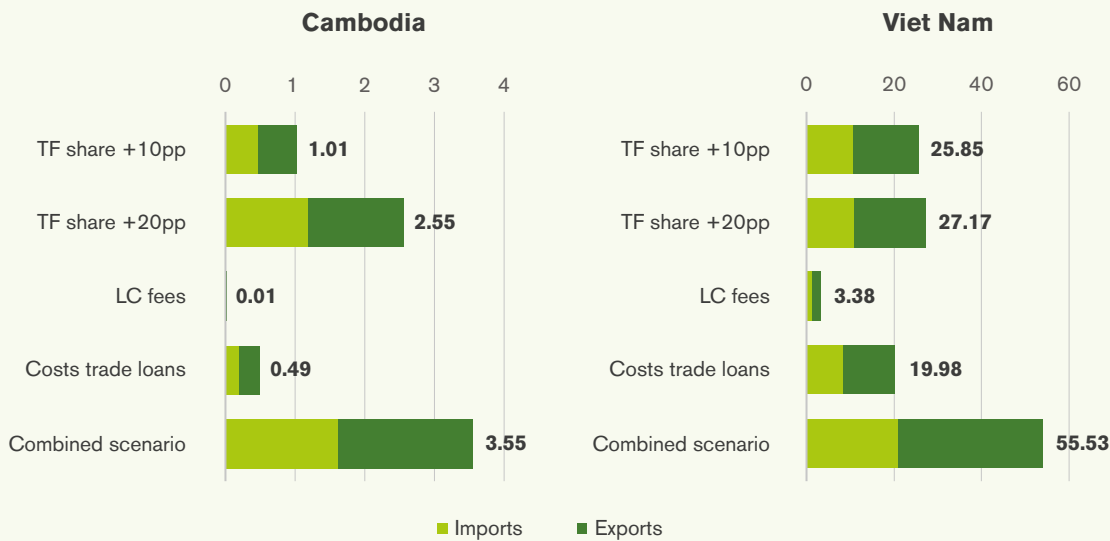
Figure 3.3 translates the per cent trade changes into volume changes in millions of dollars employing baseline trade values for the year 2022. The projected increase in annual trade is US\$ 55 billion in foregone trade for Viet Nam and about US\$ 3.5 billion for Cambodia. For both Cambodia and Viet Nam, the largest foregone opportunity is for exports. Furthermore, the numbers show that the different shocks magnify each other since the projected increase for the combined Scenario 5 is larger than the sum for Scenarios 2-4.

“

Projected increase in annual trade is US\$ 55 billion for Viet Nam and US\$ 3.5 billion for Cambodia in the combined scenario.

Comparing the counterfactual analysis of trade finance for Cambodia and Viet Nam with the analysis conducted last year on the role of trade finance in the four largest economies of the Economic Community of West African States (ECOWAS-4) (IFC/WTO, 2022), there are some similarities and some differences. First, in terms of methodology, variation in coverage

FIGURE 3.3
Projected increase in the volume of trade under the five scenarios (in US\$ billion)



Source: Simulations with the comparative static version of the WTO Global Trade Model extended with trade costs being a function of the costs and shares of trade finance. The figure displays the projected change in the volume of real imports and real exports for Cambodia and Viet Nam in billions of dollars calculated by multiplying 2022 baseline values (rescaled with the aggregate trade values in the WTO–UNCTAD database) with projected per cent changes under the different counterfactual scenarios. LC – letter of credit; pp – percentage points; TF – trade finance.

of trade finance is taken into account this year based on the share of foreign-owned firms. Furthermore, by lack of a study showing the share of trade covered by trade finance in the region and/or clear data on the share of trade finance requests rejected, the counterfactual scenario is designed differently (10 and 20 percentage point increase in trade finance coverage). Third, to prevent an artificially large impact of extending trade finance in a subset of countries for their intra-regional trade, an average of the trade cost reduction for trade within the regions subject to the counterfactual experiment is assumed.

The results of the counterfactual experiments are similar in terms of projected increase of exports and imports in per cent. In the ECOWAS-4 study, the increase for the benchmark scenario was 8 per cent; in the current study on Cambodia and Viet Nam, the projected increase is between 5 per cent for imports into Cambodia and 9 per cent for exports from Viet Nam.

Zooming in on trade patterns: detailed results for sectors and trading partners

Figure 3.4 displays the projected changes in the volume of trade by trading partner for the combined Scenario 5. The largest increase in exports for Cambodia is projected to occur for China in particular, Europe, the Pacific and Southeast Asia; for Viet Nam, the largest increase is projected for North America. This pattern is largely driven by the modelled changes in trade costs, as further analysed in Annex III. Imports from some trading partners are falling because of trade diversion, hence imports from other regions increase more.

The per cent changes do not necessarily reflect the importance of different regions in the aggregate changes for Cambodia and Viet Nam, since some regions might represent only a small share of trade. Combining per cent changes with initial values makes it possible to analyse the contribution of each of the regions and sectors to the aggregate change. Table 3.1 therefore displays the projected change in millions of US dollars by trading partner and sector.

For Cambodia, the largest contribution to the aggregate trade change comes on the import side from trade with Southeast Asia and China. On the export side, most of the increase is driven by more exports to Southeast Asia and to Europe in particular and to a lesser extent North America. The contribution of within-region (Southeast Asia) trade is large mainly because of the large initial share in total trade, whereas for Europe also the per cent increase in trade is important.



In the combined scenario, the projected increase is 5% for imports into Cambodia and 9% for exports from Viet Nam.

For Viet Nam, the largest contribution comes from more imports from China and East Asia and an extension of exports to North America and to a lesser extent East Asia and China. The most important sectors for both regions are textiles, wearing apparel and leather (Tex_wap_lea), other equipment (transport, electrical equipment and machinery) and other goods (processed food, metals, mineral products, paper products). Computer equipment plays a less important role because the size of the shock is smaller, which is driven by the fact that the share of foreign-owned firms is very high in this sector.

Robustness checks

Robustness checks were conducted to validate the accuracy of the analysis. The establishment of initial trade finance expenses relies on a thorough examination of the accessible data, which outlines the conceptual framework for the counterfactual experiments (see Annex III for details). However, there were two assumptions introduced with limited guidance from the actual data. These assumptions pertained specifically to the division of trade not covered by trade finance tools between cash in advance and internal working capital, as well as the difference between the financial costs while using trade finance instruments and non-trade finance instruments. In the analysis, these assumptions were constrained by data comparing the financial costs of trade finance and of alternate forms of financing. Hence, robustness checks on these two assumptions are included, as elaborated in Annex III.

The outcomes of these checks indicate that these assumptions do not significantly influence the essence and scale of the results. More specifically, reducing the difference between financing costs under trade finance and non-trade finance instruments reduces the projected trade expansion, but the effects are modest. The impact of changing the assumptions on the distribution between cash in advance and internal working capital are even smaller.

FIGURE 3.4

Projected increase in the volume of trade by trading partner, combined scenario (in per cent)



Source: Simulations with the comparative static version of the WTO Global Trade Model extended with trade costs being a function of the costs and shares of trade finance. The figure displays the projected change in the volume of real imports and real exports for Cambodia and Viet Nam by trading partner in per cent under the different counterfactual scenarios.

TABLE 3.1

Projected increase in the volume of exports and imports, by trading partner and sector (in US\$ million, combined scenario)

Cambodia export volumes

Importer	Agriculture	Chem_pharma	Computer_eq	Fossil_fuels	Other_eq	Other_goods	Tex_wap_lea
China	0.9	1.7	34.2	5.7	59.2	13.8	131.8
East Asia	0.3	-0.7	23.2	1.1	2.8	22.1	65.9
Europe	0.6	3.0	3.0	2.3	131.8	18.1	679.6
Latin America	0.0	0.2	0.3	0.0	1.3	0.6	27.6
Middle East & N. Africa	0.0	0.0	0.0	0.0	0.8	1.1	25.5
North America	0.3	6.7	15.8	0.0	16.8	38.5	261.6
Pacific	0.0	0.0	0.0	0.0	1.2	1.3	19.8
Rest of World	0.0	0.0	0.0	0.0	0.8	0.3	14.6
South Asia	0.1	0.3	0.0	0.0	1.7	0.7	1.8
Southeast Asia	-6.8	-26.6	50.4	0.9	42.2	200.4	26.0
Sub-Saharan Africa	0.0	0.1	0.0	0.0	0.5	1.8	3.0

Viet Nam export volumes

Importer	Agriculture	Chem_pharma	Computer_eq	Fossil_fuels	Other_eq	Other_goods	Tex_wap_lea
China	54.5	32.8	27.9	56.0	1,197.3	105.8	311.3
East Asia	109.1	333.5	589.1	385.0	961.4	1,530.1	2,372.5
Europe	194.5	55.8	23.2	6.5	1,103.1	475.7	785.4
Latin America	21.3	31.1	25.0	2.4	672.2	204.2	413.0
Middle East & N. Africa	120.6	31.8	13.9	12.6	1,049.0	241.1	235.0
North America	598.6	279.4	302.1	132.7	2,574.0	3,228.7	7,227.6
Pacific	56.6	24.9	14.1	116.7	314.9	254.2	178.4
Rest of World	41.6	9.2	5.6	1.4	274.4	60.3	125.9
South Asia	71.3	81.0	15.3	44.8	420.6	398.3	121.9
Southeast Asia	30.1	147.2	75.1	54.0	487.0	543.7	418.9
Sub-Saharan Africa	14.6	19.4	4.7	1.0	124.6	151.4	94.3

Cambodia import volumes

Exporter	Agriculture	Chem_pharma	Computer_eq	Fossil_fuels	Other_eq	Other_goods	Tex_wap_lea
China	1.2	7.9	8.2	-0.3	10.1	68.8	248.2
East Asia	0.3	-1.1	0.7	0.0	4.2	21.3	29.9
Europe	56.3	3.5	0.3	0.1	8.0	15.6	6.1
Latin America	0.1	-0.1	0.0	0.0	-0.1	0.1	0.8
Middle East & N. Africa	0.1	-0.5	0.0	-0.3	-0.2	0.2	0.1
North America	9.7	-0.1	0.0	0.0	5.9	8.2	1.9
Pacific	0.9	0.0	0.0	0.0	0.0	3.5	0.0
Rest of World	0.0	-0.3	0.0	0.0	-0.1	0.0	0.0
South Asia	0.0	-2.6	-0.1	0.0	-0.5	0.6	2.6
Southeast Asia	9.1	108.3	57.9	10.8	130.4	498.0	284.0
Sub-Saharan Africa	0.2	-0.1	0.0	-0.3	0.0	0.0	0.1

Viet Nam import volumes

Exporter	Agriculture	Chem_pharma	Computer_eq	Fossil_fuels	Other_eq	Other_goods	Tex_wap_lea
China	740.4	648.9	549.7	226.4	2,064.4	2,454.2	3,400.5
East Asia	21.5	576.2	298.6	119.5	2,778.1	1,182.8	858.2
Europe	98.9	229.2	50.3	12.2	330.3	304.3	106.3
Latin America	87.4	-0.1	0.1	2.7	8.1	129.0	47.5
Middle East & N. Africa	12.5	-12.6	1.2	8.0	3.2	20.5	9.4
North America	368.8	57.1	12.0	14.2	230.3	263.4	76.2
Pacific	262.2	19.0	1.9	83.1	3.1	198.8	9.6
Rest of World	19.7	-2.2	1.5	10.1	2.8	6.6	0.8
South Asia	78.7	5.5	10.0	2.1	13.0	120.5	101.4
Southeast Asia	300.1	383.2	187.4	421.3	502.7	944.3	217.4
Sub-Saharan Africa	266.3	-0.5	0.1	3.0	0.7	37.3	3.4

Source: Simulations with the comparative static version of the WTO Global Trade Model extended with trade costs being a function of the costs and shares of trade finance. The tables display the projected change in the volume of real exports (upper table) and real exports (lower table) for Cambodia and Viet Nam in millions of dollars by trading partner and sector calculated by multiplying 2022 baseline values (rescaled with the aggregate trade values in the WTO–UNCTAD database) with projected per cent changes of the different counterfactual scenarios. The sectors include: agriculture; chemicals and pharmaceuticals; computer equipment; fossil fuels; other equipment; other goods; and textiles, wearing apparel and leather.

Endnotes

1. The model is calibrated to data on trade and production from the Global Trade Analysis Project (GTAP) Data Base, Version 11. A description of the model and a detailed outline of the way trade finance costs are modelled as trade costs are provided in Annex III.
2. As discussed in Chapter 2, the survey indicates that factoring/supply chain finance (SCF) plays a marginal role in trade finance provided by domestic financial institutions in Cambodia and Viet Nam. Furthermore, SCF is broadly similar to loans provided to the exporter (risk is not transferred to the bank and the exporter accepts a discount which from a cost perspective is similar to interest paid on loans). Hence, introducing SCF, either in the baseline in the form of SCF provided by foreign banks (or in the counterfactuals in the form of an expanding trade finance coverage manifesting itself in the form of more SCV) would have a marginal impact on the effect of counterfactuals.
3. Trade costs are of the iceberg type when additional resources have to be spent to ship a good internationally. To let one unit of a good arrive in the country of destination, more than one unit needs to be shipped out from the origin with a share “melting away” during transportation.
4. In the framework, the financial costs associated with different instruments to finance international trade transactions vary based on data collected in the survey and other data on lending rates. Accordingly, there is no perfect arbitrage between the different instruments equalizing financing costs. This reflects that there are differences in the degree of risk driven by among others, differences in borrowing constraints relating to the extent to which collateral is available and payments are guaranteed by third parties (i.e. a bank in case of letters of credit).
5. Sources include census data in Viet Nam and the related-party database for US trade with Cambodia and Viet Nam, which is used as a proxy for trade with all trading partners.
6. Since there is variation in the share of trade finance provided by foreign banks across sectors based on the share of foreign-owned firms, the extension of trade finance provided by domestic banks varies across sectors.
7. For some sector importer–exporter combinations, this would imply that shares would become negative. Therefore, the shares of domestic and foreign trade finance are reduced to make sure that shares always sum to 1.
8. In the model, firms are not explicitly modelled, so the analysis does not distinguish between extending trade finance for firms already receiving trade finance (intensive margin) and more firms receiving trade finance (extensive margin).
9. The trade cost reductions for trade between Cambodia and Viet Nam are set equal to the average trade cost reductions for these two countries.

Conclusions

The Mekong-3 – Cambodia, the Lao People's Democratic Republic (PDR) and Viet Nam – are deepening their trade integration, increasing the volume and value of their exports and strengthening their participation in global value chains (GVCs). This expansion of opportunities for new traders in new markets generates expectations of growing demand for trade finance in the coming years.

Free trade agreements recently concluded between Cambodia and China (2021), Viet Nam and the European Union (2020) and the United Kingdom (2021), as well as the Regional Comprehensive Economic Partnership (RCEP), concluded in 2022 between the Association of Southeast Asian Nations (ASEAN) and Australia, China, Japan, the Republic of Korea and New Zealand, will further support these positive trends and create new opportunities to leverage trade for development.

The role of local banks in supporting the internationalization trajectory of the region has been markedly different across the Mekong-3. Although a substantial 20 per cent of local bank assets in Viet Nam is dedicated to trade finance, results of the 2023 IFC survey of trade finance show that banks are more likely to support smaller, local enterprises engaged in intra-regional trade than global trade – with high-value exports in the sectors of electronics and garments relying less on local trade finance. In both Cambodia and Viet Nam, the subsidiaries of multinational enterprises that are driving growth rely less on local bank-intermediated trade finance.

Local trade finance in Viet Nam is therefore more than just a driver of international competitiveness. It also contributes to greater inclusion in the process of internationalization of local production for activities outside the frontier sectors. This is reflected in the simulated estimates of trade finance gaps: raising the coverage of trade by bank-intermediated finance provides the largest contribution to the projected trade increase in Viet Nam; while the share of the electronics sector in total growth is only moderate.

Coordinated action by the corporate sector, financial institutions, national policymakers and international organizations could help to increase the uptake of trade finance in the Mekong-3 and to address the constraints identified in the surveys – specifically, the focus on traditional

trade finance instruments, limited engagement in more dynamic sectors, the lack of relevant market data and greater demand by smaller enterprises. The most effective measures in Viet Nam, and to some extent Cambodia, include:

- diversifying the range of trade finance products;
- strengthening regulatory frameworks;
- broadening the local customer base for trade finance to small and medium-sized enterprises (SMEs);
- improving banks' agility, risk management capacity and international relationships.

In Cambodia and the Lao PDR, actions could focus on the expansion of traditional trade finance instruments such as letters of credit and basic capabilities of banks, without neglecting ways to promote the use of innovative instruments. Supporting evidence-based solutions would be a prerequisite for any initiative involving the improvement in trade finance markets in the Mekong-3.

Diversifying the range of trade finance products

The characteristics of the local banking sector in Viet Nam suggest clear actions that could improve access to trade finance. Geared towards SMEs that are developing their linkages (including connections with foreign direct investors), banks and traders in Viet Nam would benefit from the development of less-traditional trade finance instruments, such as supply chain finance (SCF), which is currently in only limited use.

A number of more innovative digital products at a nascent stage of development in the Mekong region could be supported to reduce overhead costs and to improve access to trade finance. Examples include: promoting common sector-level operating infrastructure (e.g. dedicated electronic platforms) and services for new trade finance instruments; building market awareness; and strengthening the capacity of key stakeholders, including banks and other supply chain participants, to offer and take advantage of related opportunities.

Strengthening regulatory frameworks

Regulatory conditions may inadvertently generate barriers and additional risk for financial institutions, which might then result in firms being excluded from trade finance. The absence of a well-defined legal framework tends to cause banks to be more cautious about taking on risks and less inclined to introduce new products that could even enhance their ability to cater to local markets.

The Mekong-3 governments can review and update the regulations governing both traditional and new trade finance instruments, collateral requirements, digital transactions, central bank conditions and accountability frameworks. A recent successful intervention in this area has been in the Philippines, which adopted a regulatory framework to develop SCF products, including a secured transactions law – the Personal Property Security Act – considered one of the best in the region, and a central online collateral registry.

The expansion of innovative trade finance products will require broader action at the government level. The impact of the COVID-19 pandemic and rising inflation – both of which constrict banks' capacity to meet demand – can be addressed, for example, by expanding guarantees, risk-sharing facilities and syndication arrangements.

Broadening the local customer base for trade finance to SMEs

Banks should be encouraged to expand their customer base of SMEs in dynamic sectors such as chemicals and machinery, as well as of local suppliers to mega firms in electronics, to support the internationalization of the local economy. SMEs would benefit from greater awareness of how to engage with providers of trade finance and the different products available.

Successful interventions include Pakistan, where risk mitigation technical assistance for extending additional financing to new clients has helped banks pilot payable finance programmes to enhance access to finance for SMEs. Knowledge sharing and advisory services were essential complements and resulted in significantly improved access to trade finance for SMEs in the automotive, construction and manufacturing sectors in the country.

Technological solutions could also help banks to develop more sophisticated internal credit risk assessment systems for smaller companies and new entrants in the trade finance markets. Financial institutions can develop specialized tools and rely more on digitalization – a higher level of which could help to reduce the processing costs of trade finance instruments, which remain high among lower-income countries in the region.

Improving banks' agility, risk management capacity and international relationships

Improving banks' agility, risk management capacity and international relationships would allow financial institutions to expand their reach to riskier segments of new traders, active in less well-known product markets or in new destinations. Banks might not be able to compete for lower cost of funds alone; their strength thus lies in their capacity to provide effective services for high-value traders in dynamic routes.

One distinguishing feature of the electronics sector, for example, is its short product life cycle, which demands rapid capital turnover. Local banks should become more effective in this market. A large number of development finance institutions engaged in the region, such as in China and smaller trade-dependent economies, focus on this type of capacity building through dedicated advisory services.

Expanding traditional trade finance instruments and basic capabilities of banks

In Cambodia and the Lao PDR, the capacity of the local banking system to support the internationalization of the economy is more limited than in Viet Nam. Actions in these two countries could focus on the expansion of traditional trade finance instruments such as letters of credit and basic capabilities of banks, without neglecting ways to promote the use of innovative instruments such as SCF to facilitate the integration of local traders into GVCs.

The expansion of traditional trade finance instruments and basic capabilities of banks would involve actions such as liquidity support, updating regulatory frameworks, setting up mechanisms for collecting market intelligence

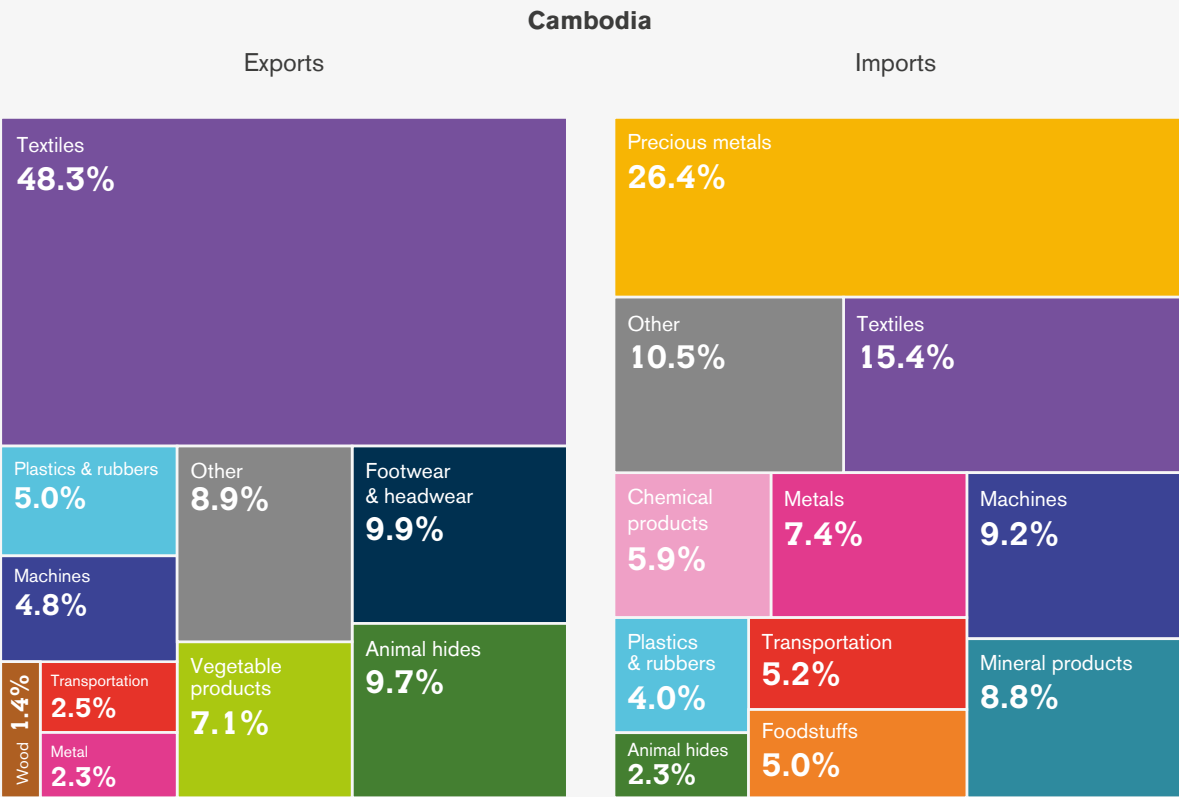
and assessing risks, as well as expanding correspondent banking relationships. International institutions could support governments and banks with compliance training in areas such as trade-based money laundering. This could help to reassure correspondent banks on counterparty risk and help local lenders to build larger networks.

Supporting evidence-based solutions

Supporting evidence-based solutions is a prerequisite for any initiative involving the improvement in trade finance markets. Despite data collection and analytical studies – including this publication – examining trade finance, evidence on the size of the trade finance gaps and its determinants in emerging markets remains scarce. Additional efforts are needed by all stakeholders, including development finance institutions, to improve understanding of the market, both its failures and its potential.

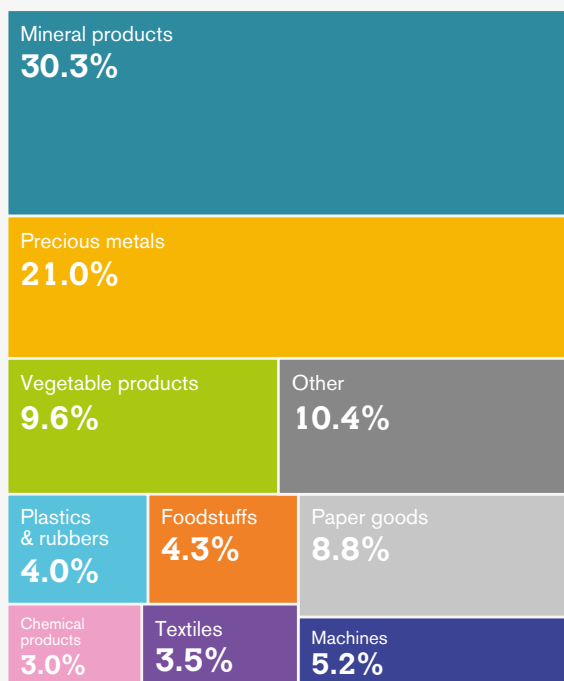
Mekong-3 trade and global value chain performance

FIGURE I.1
Shares of products traded in the Mekong-3, 2021 (in per cent)

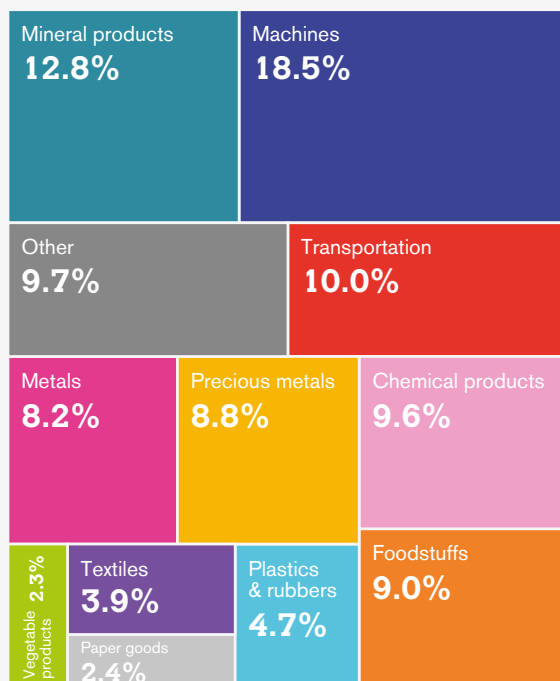


Lao PDR

Exports

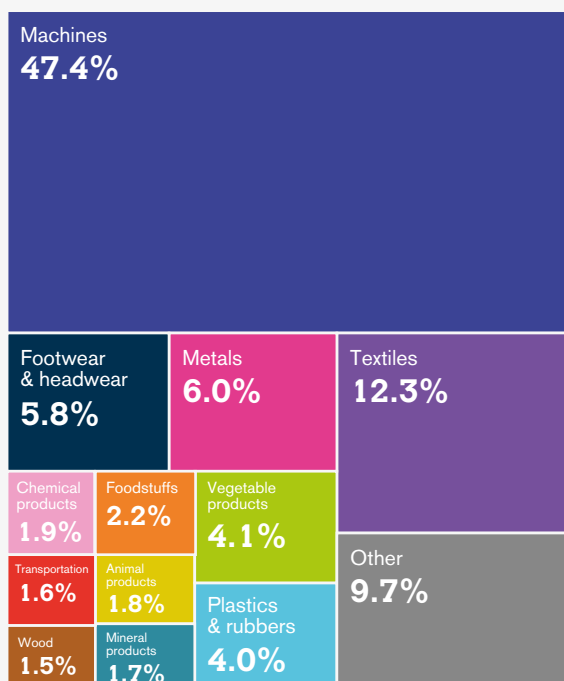


Imports

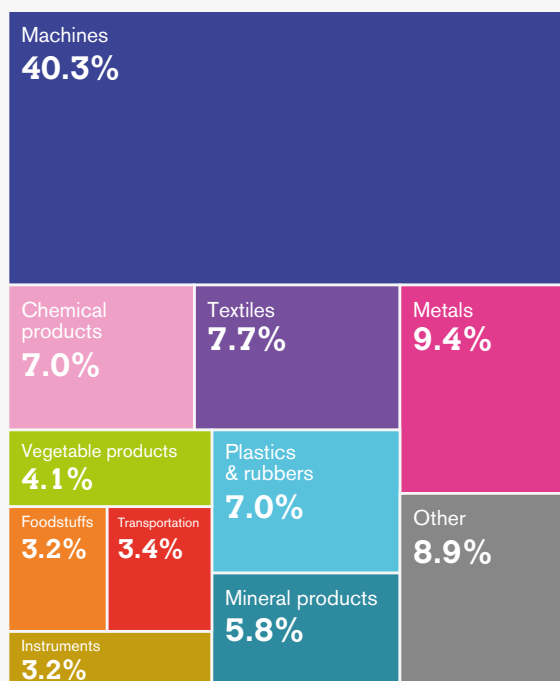


Viet Nam

Exports



Imports



Source: Observatory of Economic Complexity. Aggregate trade covered is not exact match but close to the figures produced in World Bank WITS. A full breakdown is available at <https://oec.world>.

TABLE I.1

Measuring export competitiveness: decomposing the geographical effects (in percentage points, average 2010-2021)

	Cambodia			Lao PDR			Viet Nam		
	Global effect ("pull")		Country's largest export market	Global effect ("pull")		Country's largest export market	Global effect ("pull")		Country's largest export market
	Contrib. to relative price change	Contrib. to market share change in volume	Country's market orientation	Contrib. to relative price change	Contrib. to market share change in volume	Country's market orientation	Contrib. to relative price change	Contrib. to market share change in volume	Country's market orientation
AFR	0.00	0.00	0.24	0.00	0.00	0.05	0.00	0.01	1.07
China	0.05	0.12	4.21	0.32	0.77	33.34	0.13	0.42	12.82
EA17	-0.06	-0.17	23.02	-0.02	-0.05	5.72	-0.04	-0.13	14.29
EAP	-0.01	0.47	16.34	-0.14	1.53	43.16	0.01	0.20	13.70
ECA	-0.01	-0.01	2.05	0.00	0.00	0.40	-0.01	-0.02	2.31
Japan	-0.03	-0.19	6.47	-0.02	-0.06	3.12	-0.03	-0.23	9.09
LAC	0.00	-0.01	0.78	0.00	0.00	0.07	0.00	-0.02	1.90
MENA	0.01	-0.02	1.18	0.00	0.00	0.37	0.01	-0.01	3.26
OECDnonEU	-0.03	-0.14	19.73	-0.04	-0.11	8.34	0.03	-0.04	17.30
RoW	0.00	0.00	0.44	0.00	0.00	0.27	0.02	0.01	1.69
SAR	0.00	0.01	0.22	0.02	0.07	3.30	0.01	0.07	2.35
United States	-0.18	-0.01	25.31	-0.02	-0.01	1.86	-0.18	0.00	20.21
Total		0.05	100.00		2.14	100.00		0.25	100.00

Source: World Bank MEC Database. AFR – Sub-Saharan Africa; EA17 – Euro Area (not including Croatia, Latvia, Lithuania); EAP – East Asia and Pacific; ECA – Europe and Central Asia; LAC – Latin America and the Caribbean; MENA – Middle East and North Africa; OECDnonEU – members of the Organisation for Economic Co-operation and Development which are not members of the European Union; RoW – rest of the world; SAR – South Asia Region.

TABLE I.2

Measuring export competitiveness: decomposing the sectoral effects (in percentage points, average 2010-2021)

	Cambodia			Lao PDR			Viet Nam		
	Global sector effect ("pull")		Country's weight of export sector in total exports	Global sector effect ("pull")		Country's weight of export sector in total exports	Global sector effect ("pull")		Country's weight of export sector in total exports
	Contrib. to relative price change	Contrib. to market share change in volume	Country's sector specialization	Contrib. to relative price change	Contrib. to market share change in volume	Country's sector specialization	Contrib. to relative price change	Contrib. to market share change in volume	Country's sector specialization
Agriculture	-0.26	0.00	5.28	-0.32	0.00	11.74	0.11	-0.08	9.67
Chemicals	0.00	0.00	0.15	-0.18	-0.08	4.47	0.00	-0.01	1.65
Electrical	0.04	-0.01	2.26	-0.16	-0.09	7.19	-0.41	0.92	29.88
Food	0.00	-0.01	0.69	-0.01	0.00	6.91	0.02	0.02	2.32
Footwear	0.28	-0.26	10.52	0.00	-0.04	1.33	0.15	-0.07	8.10
Leather	0.07	-0.12	3.05	0.02	0.01	0.13	0.02	-0.03	1.69
Machinery	0.00	0.00	0.24	-0.01	0.00	0.39	0.01	-0.13	6.67
Metals	0.01	0.02	0.98	-0.29	-0.42	15.62	0.05	0.00	3.92
Minerals	0.00	-0.01	0.42	0.40	0.96	16.88	0.00	-0.12	5.35
Others	0.36	0.22	5.30	0.12	-0.13	8.08	0.06	-0.03	7.41
Plastics/rubber	-0.14	-0.14	2.69	-0.25	-0.19	4.09	-0.10	-0.04	3.72
Textiles	-0.04	-1.65	62.44	0.07	-0.15	8.35	0.02	-0.35	16.37
Transportation	0.08	0.02	2.21	0.00	0.00	0.38	0.00	-0.01	1.30
Wood	0.17	-0.23	3.76	0.27	-0.10	14.43	0.04	-0.02	1.94
Total		-2.18	100.00		-0.23	100.00		0.06	100.00

Source: World Bank MEC Database.

Estimating total trade finance assets: methodology

The estimation of the total value of trade finance in a country considers the relationship between bank assets in the country, based on published data, and trade finance assets identified in the survey. This relationship can take the functional forms of either a power law distribution or the asset variables can be proportional to each other.

Power law

The hypothesis is that as banks become larger (in terms of total assets), they gain access to the largest trade finance contracts and have a larger network of correspondent banks than smaller banks. Therefore, larger banks would have a greater market share of trade finance assets than total assets as compared to smaller banks (see Figure II.1). The functional form of this relationship is assumed to be:

$$TF = \alpha TA^k$$

where TF and TA are the trade finance assets and total assets of a bank, α is the size parameter of the estimated Pareto distribution and k is the shape parameter larger than 1.

Proportional

The hypothesis is that the total assets of a bank are not related to their preference for, or access to, trade finance assets. Precisely, a constant proportion of trade finance assets to total assets of a bank is assumed, regardless of the size of the bank. The functional form of this relationship is assumed to be:

$$TF = bTA$$

where b is a number between 0 and 1 (see Figure II.2).

FIGURE II.1 Power law distribution

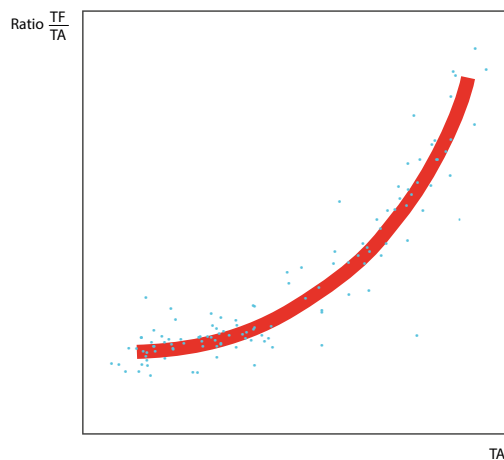
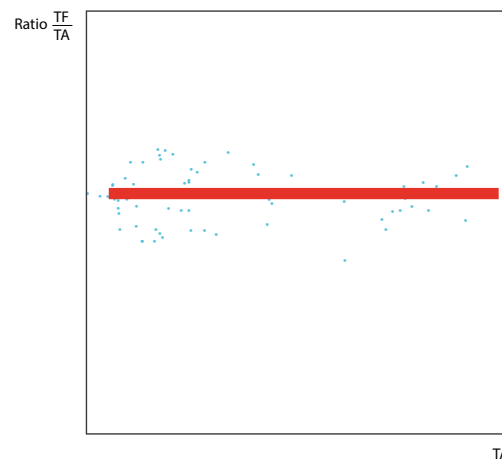


FIGURE II.2 Proportional distribution



Based on the sample survey results, the coefficients of both methodologies using country-specific linear regressions are estimated. When estimating the coefficient b in country c in the proportional model is straightforward, natural logs of trade finance assets and total assets in the power law relationship are taken in order to estimate the following equation via linear regression:

$$\ln TF_{b,c} = A_c + k \ln TA_{b,c} + \epsilon_{b,c}$$

A simple test for the power law is a one-sided t -test for $k > 1$ in the above regression. For ease of interpretation and analysis, the preferred test for the power law is a one-sided t -test for $\bar{K} > 0$ in the regression:

$$\ln \frac{TF_{b,c}}{TA_{b,c}} = A_c + \bar{K} \ln TA_{b,c} + \epsilon_{b,c}$$

The preferred specification chosen for the proportional relationship is a straightforward no-intercept regression of the bank's total assets on its trade financing:

$$TF_{b,c} = B_c TA_{b,c} + \epsilon_{b,c}$$

where $TF_{b,c}$ is the value of trade finance assets of bank b in country c and $\epsilon_{b,c}$ is the error term. For both the power law and the proportional relationships, the models are estimated separately for each country to allow for distinct market conditions across the region. The analysis and estimates from this exercise are then used to predict the trade finance lending for non-reporting banks as a function of their total asset holdings. This enables the total trade finance coverage in the country to be estimated.

The results indicate that while data on banks in Cambodia sufficiently point towards the existence of a power law in trade financing, banks in Viet Nam fail to exhibit a clear-cut relationship in this direction. Eventually, the rejection of the power law in the framework ($k = 1$) collapses the model back to the proportional relationship. Hence, the prediction of trade finance coverage does not differ appreciably for Viet Nam whether the power law relationship with $k \approx 1$ is used or a proportional relationship.

Once the coefficients are estimated using the proportional methodology, the trade finance assets of banks that were not in the survey results can be estimated given their known total assets (e.g. from each bank's annual report) and the estimated coefficients. Finally, the observed and estimated trade finance assets of all banks in a country are combined to estimate the total value of trade finance in that country.

Counterfactual analysis

The bank survey contains information on the costs of trade finance, the share of trade covered by trade finance and the trade finance gap. This information is used to generate projections of the trade effects of changes in the price and availability of trade finance. The WTO Global Trade Model (GTM), a computable general equilibrium model, is used to simulate the effects of changes in trade costs because of changes in the price and availability of trade finance. This annex describes the economic model employed, explores how the trade costs of financing international trade are modelled and outlines how trade finance shares and the costs of the trade finance instruments are calibrated in the baseline and counterfactuals.

Economic model

The GTM is a quantitative trade model describing the economic interactions between regions. It is designed to provide in-depth insights into the specific impacts of trade policy measures at both the sectoral and national levels. The model accounts for international upstream and downstream linkages between sectors through intermediate production and trade.

The GTM model incorporates three distinct types of final demand: private household expenditure; government spending; and investment. The income of a representative household in each country is allocated to private household expenditure, government expenditure and savings. Assuming a fixed trade-balance-to-GDP ratio, investment follows savings. The allocation of private household expenditure across sectors adheres to non-homothetic preferences, where the budget shares of certain sectors (primarily essential goods like food and basic manufacturing) decrease as countries become more prosperous. Conversely, the budget shares of other sectors (especially services) increase.

Firms produce with production factors and intermediate inputs, reflecting the presence of intermediate linkages. There are five primary production factors: high-skilled labour; low-skilled labour; and capital, land and natural resources. High-skilled and low-skilled labour, along with capital, are mobile; natural resources are specific to each sector; and land has limited mobility. The model incorporates various taxes, including income taxes, endowment taxes, import tariffs and export subsidies.

The baseline is calibrated to data from the Global Trade Analysis Project (GTAP) Data Base, Version 11 for 2017, projected forward to 2022 using standard techniques described for example in Fouré *et al.* (2017); that is, imposing population and labour force growth and targeting GDP per capita growth endogenizing productivity growth. A technical description of the model focusing on the code is available in Aguiar (2019), whereas a description of the model outlining the economic structure into detail is available in Bekkers *et al.* (2018).

Trade is handled through Armington preferences displaying love of variety by country of origin. The expression for the (physical) quantity (q) traded is relevant for the modelling of trade finance from source s to destination d in sector c , following a standard Armington formulation:

$$q_{sdc} = \tau_{sdc} \left(\frac{\tau_{sdc} \text{tx}_{sdc} \text{tm}_{sdc} \text{tr}_{sdc} p_{sc}}{p_{dc}} \right)^{-\sigma_c} q_{dc} \quad (1)$$

where:

- τ_{sdc} is iceberg trade costs;
- tx_{sdc} is the export tax rate (in power terms);
- tm_{sdc} is the import tax (in power terms);
- tr_{sdc} is the costs of transportation (in power terms);

p_{sc} is the export price in source s ;
 p_{dc} is the import price in destination d ;
 q_{dc} is the quantity imported in destination c ;
 σ_c is the substitution elasticity between imports from different sources.

The costs of trade finance will be incorporated in the import tax, export tax and iceberg trade costs as outlined below.

Trade costs of financing international trade

The costs of international trade are an important determinant of trade flows and comprise a range of transaction costs incurred in trading goods and services internationally – of which the costs of financing international trade are an important component. These financing costs consist of two main components which are intertwined. First, costs associated with the transaction risk that the counterparty will not pay or will not deliver the goods. Second, the financial costs relating to the cost of using an instrument mitigating such risks, consisting both of fees to cover risk and capital costs, and to bridge the time when goods are in transit.

The total costs of financing international trade transactions are determined by the instruments employed. The analysis distinguishes between four modes of payment or financing employed, each differing in cost and transaction risk:

- cash in advance (cia);
- export or import loans (loa);
- exports financed with internal working capital (int_wc);
- letters of credit (lc).

To keep the model tractable, the costs of trade finance are included as a component of trade costs. To do so, both the financial costs and the costs associated with the transaction risk of each of the instruments are expressed as an *ad valorem* share of the value of trade. The total trade costs associated with the financing of international trade are then expressed as a value-weighted average of both types of cost over each of the instruments. The two types of cost of each of the instruments and the baseline shares are based on the questionnaire (for the surveyed countries), data from international institutions and data available in the academic literature, as further detailed below.

The financial costs paid by importers and exporters are modelled as import and export taxes, respectively. This is a good approximation of a more detailed model incorporating an explicit banking sector to which trading firms would pay the financial costs given that the model features a consolidated representative household collecting both factor income and tax income. The reason is that changes in the costs of trade finance can be seen as changes in profit margins of the banking sector. Hence, the financial costs can be seen as a rent/profit collected by the banking sector and thus as an import/export tax collected by the representative household.

The costs associated with the transaction risk are modelled partially as an import/export tax and partially as an iceberg trade cost. The share of goods lost in trade calculated based on default rates is modelled as an import tax for the importer or an export tax for the exporter. Hence, the goods lost in transactions are modelled as a tax paid by one party to the other (e.g. the importer paying a tax to the representative household). Furthermore, the costs associated with risk aversion are modelled as a resource loss for agents involved in international trade in the form of an iceberg trade cost.

Limitations of the framework

Annex III first describes the calibration of the costs of each of the instruments and then the shares of the different trade finance instruments. Before turning to the details of the calibration three remarks are in order about the potential limitations of the framework employed. First, in the counterfactual experiments the shares of trade finance instruments and their costs are changed exogenously. Obviously, both these shares and costs are endogenous in the real world and driven by a variety of factors. However, modelling these shares and costs endogenously is beyond the scope of this publication and would require extending the trade-oriented model with a full-blown financial sector. Such an exercise

would be more complicated than most analyses of trade finance in the literature, given the comprehensive nature of the study, including most trade finance instruments.

Second, in the framework the financial costs associated with different instruments to finance international trade transactions vary, based on data collected in the survey and other data on lending rates. Accordingly, there is no perfect arbitrage between the different instruments equalizing financing costs. This reflects that there are differences in the degree of risk driven by among others, differences in borrowing constraints relating to the extent to which collateral is available and to which payments are guaranteed by third parties (i.e. a bank in case of letters of credit).

Third, supply chain finance (SCF)/factoring is not included in the analysis as one of the trade finance instruments. The survey indicates that the share of this type of trade finance provided by domestic financial institutions in Cambodia and Viet Nam is marginal. Furthermore, SCF is similar in structure to loans provided to the exporter (risk is not transferred to the bank and the exporter accepts a discount which from a cost perspective is similar to interest paid on loans). Hence, introducing SCF, either in the baseline in the form of SCF provided by foreign banks or in the counterfactuals in the form of an expanding trade finance coverage manifesting itself in the form of more SCF, would have a marginal impact on the effect of counterfactuals.

Hence, the listed limitations do not invalidate the analysis conducted. The necessary data are lacking for a more detailed analysis. Going into further detail would be mainly useful for a more detailed analysis of the policy interventions possible both to raise the coverage of trade finance and to reduce their costs. The current analysis instead takes these costs as given.

Costs of trade finance

The two types of cost (cost of funds, costs associated with risk) are now described for each of the four ways to finance international trade. The starting point, however, is with an exposition of the way the costs associated with risk are modelled.

Integrating risk aversion in the model

If traders are risk averse, the costs associated with risks of the transaction tend to be larger than the share of goods not arriving in the destination. Hence, the costs associated with risk can be expressed as a function of the probability that goods do not arrive, or importers do not pay for goods shipped. A transaction has a good outcome of 1 with probability $1-p$. The transaction has a bad outcome of 0 (meaning for an importer that the product is not received after paying for the goods, or the payment never occurs after an exporter shipped the goods) with a probability p .

The costs associated with the risk is equal to the utility loss because of the risk. This loss is equal to the good outcome of 1 minus the certainty equivalent, which is defined as the certain value for which the agent is indifferent between engaging in the transaction or accepting this lower certain value. To calculate the costs associated with risk, a constant relative risk aversion (CRRA) utility function is assumed for agents involved in international trade with γ , the CRRA parameter:

$$U(x) = \frac{x^{1-\gamma}}{1-\gamma} \quad (2)$$

The certainty equivalent of the transaction, CE, can be calculated as follows, with p the probability of a bad outcome (goods not arriving):

$$u(CE) = E(u(x)) \quad (3)$$

$$u(CE) = p \cdot u(0) + (1-p) \cdot u(1) \quad (4)$$

$$\frac{CE^{1-\gamma}}{1-\gamma} = (1-p) \cdot \frac{1^{1-\gamma}}{1-\gamma} \quad (5)$$

Hence, the certainty equivalent is given by:

$$CE = (1-p)^{\frac{1}{1-\gamma}} \quad (6)$$

Having obtained the certainty equivalents (the certain value for which the agent is indifferent between engaging in the transaction or accepting this lower certain value), the costs associated with risk aversion, CRA, can be calculated as the difference between the expected value shipped and the certainty equivalent:

$$CRA = 1 - p - CE = 1 - p - (1 - p)^{\frac{1}{1-\gamma}} \quad (7)$$

The total costs associated with risk, TCR, can be written as the sum of the costs of risk; that is, the probability that goods are lost, CR, and the costs associated with risk aversion, CRA:

$$TCR = CR + CRA = p + 1 - p - (1 - p)^{\frac{1}{1-\gamma}} = 1 - (1 - p)^{\frac{1}{1-\gamma}} \quad (8)$$

As discussed above, the costs of risk (the probability that goods are lost or payments are not made) are modelled as an import tax for the importer and as an export tax for the exporter; whereas the costs associated with risk aversion are modelled as a resource loss for agents involved in international trade in the form of an iceberg trade cost.

As shown in Conine *et al.* (2017), the formulation of risk aversion with a CRRA parameter has been largely used in the financial and macroeconomic literature, with a large interval of values. Studies focusing on risky assets markets have privileged estimates of the CRRA above 3. Azar (2006) finds calibrated CRRAs between 4.2 and 5.4 in a study mimicking the US stock market. A large literature focusing on labour supply chose instead values of CRRA below 1, such as Chetty (2006) choosing a coefficient of 0.7. Employing this value for real economy applications instead of financial markets generates intuitive values for the costs associated with risk in the model.

Cash in advance

Under this payment option, the importer pre-finances the exporter's cash needs, while incurring the risk that goods would not be delivered. Therefore, the importer bears both a transaction risk and a financial cost linked to using own funds to make the payment. Under cash in advance (cia), exporters do not incur financial costs or costs associated with risk since they would ship the goods only upon receipt of the payment. The costs of using cash in advance (cia) in sector c from source (exporter) s to destination (importer) d thus consists of the costs of financing the transaction by the importer, CF_d^{cia} , the cost of risk in the destination, CR_d^{cia} , the costs of risk aversion in the destination, CRA_d^{cia} . The latter two can be written as the probability that goods are not delivered, ND_d^{cia} :

$$CR_d^{cia} = ND_d^{cia} \quad (9)$$

$$CRA_d^{cia} = 1 - (1 - ND_d^{cia})^{\frac{1}{1-\gamma}} \quad (10)$$

Import and export loans

Import and export loans are trade finance instruments which can be used to address the liquidity needs for both importers and exporters until they have to pay or they get paid. The financial cost of loans are the interest rates on them. With a pre-export shipment loan, the exporter also incurs the risk of not being paid – this risk is not mitigated by the loan itself. The import loan does not mitigate or alleviate the risk of not receiving the merchandise (only a letter of credit would do that), so the importer similarly bears the risk of not receiving the goods.

Hence, the costs of an import loan (export loan) consist of the costs of financing of an import loan, $CF_d^{loa,imp}$ ($CF_s^{loa,exp}$), the costs of risk, $CR_d^{loa,imp}$ ($CR_s^{loa,exp}$), and the costs of risk aversion, $CRA_d^{loa,imp}$ ($CRA_d^{loa,exp}$), which can be expressed as the probability that goods are not delivered:

$$CR_d^{loa,trad} = ND_d^{loa,trad}; \text{ trad} = \text{imp, exp} \quad (11)$$

$$CRA_d^{loa,trad} = 1 - (1 - ND_d^{loa,trad})^{\frac{1}{1-\gamma}}; \text{ trad} = \text{imp, exp} \quad (12)$$

Exports financed with internal working capital

In the absence of the availability of a pre-shipment export loan, an exporter can also decide or be constrained to finance the process of production for the purpose of exporting. Upon order, the exporter would typically receive a small advance from the buyer. In this case, the whole production and shipment cycle would have to be financed, including inputs purchase, salaries, machinery, packaging and shipping, before receiving its export receipt. By doing so, the exporter incurs the opportunity cost of using capital to produce the goods, and the transaction risk of sending the goods before the payment.

Hence, the costs of exports financed with internal working capital consist of the costs of financing internal working capital, $CF_s^{\text{int_wc}}$, the costs of risk, $CR_s^{\text{int_wc}}$, and the costs of risk aversion, $CRA_s^{\text{int_wc}}$, with the latter two being a function of the probability that goods are sent and no payment is received, $ND_s^{\text{int_wc}}$:

$$CR_d^{\text{int_wc}} = ND_d^{\text{int_wc}} \quad (13)$$

$$CRA_d^{\text{int_wc}} = 1 - (1 - ND_d^{\text{int_wc}})^{\frac{1}{1-\gamma}} \quad (14)$$

Letters of credit and other documentary credit

Finally, letters of credit are a payment guarantee in case of importer's default. An issuing bank commits to pay for the transaction if the importer is unable to pay. A confirming bank in the exporter's region could also bear the final payment risk if the issuing bank cannot pay either. To open a letter of credit, the importer incurs an opening fee to the issuing bank, and the exporter pays a confirmation fee to the confirming bank. Only if the exporting region is considered riskier than the importing region is a confirming bank required.

While being a guarantee of future payment after delivery, the letter of credit does not provide the exporter the required liquidity to produce and ship the goods – in other words, it is not a substitute for a pre-shipment loan. Under a letter of credit, the exporter would continue to face an opportunity cost if using its own funds for this purpose. However, there is no cost associated with the transaction risk under a letter of credit. Instead, opening and confirming fees are paid by the importer and the exporter, respectively.

Hence, the total trade finance costs of using a letter of credit consist of the costs of financing in the source country, CF_s^{lc} , consisting of the capital costs for sending the goods before payment is received, the letter of credit opening fee, OPF_d^{lc} , and the letter of credit confirmation fee, COF_s^{lc} if the destination country d is considered riskier than the source country s . For an importer, letter of credit costs include the letter of credit opening fee, since the costs of financing the transaction are borne by the exporter.

Writing trade costs as a function of the costs of trade finance

Employing data on the shares of the four ways to finance international trade, the import tax, export tax and iceberg trade costs associated with the costs of financing international trade from source s to destination d in sector c can be written as follows:

$$\text{exptax}_{sdc} = \text{sh}_{sdc}^{\text{lc}} (CF_s^{\text{lc}} + \text{COF}_s^{\text{lc}} \cdot \text{RR}_{sd}) + \text{sh}_{sdc}^{\text{loa,exp}} (CF_s^{\text{loa,exp}} + ND_d^{\text{loa,exp}}) + \text{sh}_{sdc}^{\text{int_wc}} (CF_d^{\text{int_wc}} + ND_d^{\text{int_wc}}) \quad (15)$$

$$\text{imptax}_{sdc} = \text{sh}_{sdc}^{\text{lc}} \cdot \text{OPF}_d^{\text{lc}} + \text{sh}_{sdc}^{\text{loa,imp}} (CF_d^{\text{loa,imp}} + ND_d^{\text{loa,imp}}) + \text{sh}_{sdc}^{\text{cia}} (CF_d^{\text{cia}} + ND_d^{\text{cia}}) \quad (16)$$

$$\text{itc}_{sdc} = \sum_{i \in \{\text{exp, loa, int_wc}\}} \text{sh}_{sdc}^i \left(1 - (1 - ND_s^i)^{\frac{1}{1-\gamma}} \right) + \sum_{i \in \{\text{imp, loa, cia}\}} \text{sh}_{sdc}^i \left(1 - (1 - ND_s^i)^{\frac{1}{1-\gamma}} \right) \quad (17)$$

with RR_{sd} as a dummy for the relative riskiness of source s and destination d equal to 1 if destination d is riskier than source s . The shares of the different instruments vary by sector as further detailed below. Due to a lack of survey data, the costs of the different instruments do not display sectoral variation.

Calibration of costs

Since there are four ways to finance international trade and two types of cost for each trade (the costs of funds and the costs associated with risk) four sets of two types of trade cost have to be calibrated.

Costs associated with risk

To calculate the costs associated with risk, data are required on the share of non-delivery or non-payment, ND, for the different trade finance instruments. To do so, data from various sources on the probability of default on loans are employed as a proxy. For cash in advance and internal working capital for exports, ND is based on the share of bank non-performing loans to total gross loans from the International Monetary Fund (IMF).¹ For import and export loans, ND is based on the International Chamber of Commerce (ICC) Obligor-weighted export and import loan default rates (ICC, 2020b).

Financial costs

Data on the costs of finance, CF, come from the survey for surveyed countries and from data provided by international organizations and available in the academic literature. The two groups of countries are discussed separately.

(1) Surveyed countries:

- (a) The costs of financing for export and import loans, $CF_s^{\text{loa,exp}}$ and $CF_d^{\text{loa,imp}}$, are based on survey answers calculated as a trade finance portfolio weighted average of the costs of funds across different banks.
- (b) The costs of financing for cash in advance and exports with internal working capital, CF_d^{cia} and $CF_s^{\text{int_wc}}$, are for the surveyed countries assumed to be equal to the cost of trade loans multiplied by a factor of two. This assumption is motivated by the fact that the survey answers combined with other data indicate that the interest rates for microfinance are at least twice as large as for trade loans. More specifically, the trade loan costs of financing for Cambodia are between 5.25 and 5.75 per cent, whereas Cambodia established a cap of 18 per cent on interest rates in 2017. In 2016, the average lending rate of banks was 12 per cent in US dollars and 21 per cent in Cambodian riels and much higher for microfinance institutions (Heng *et al.*, 2021). Hence, the ratio of 2 seems on the conservative side. For Viet Nam, the largest microfinance institutions charged annual interest rates in 2020 between 8.75 and 16 per cent (Capital Aid for the Employment of the Poor Microfinance Institution) and 7.6 percent and 17.75 percent (Tao Yêu Mây Tinh Thuong One-Member Limited Liability Microfinance Institution), whereas the trade loans costs of financing according to the survey are 6.5-6.75 per cent (Bevacqua *et al.*, 2021). In light of these numbers, a ratio of 2 is appropriate.
- (c) The letter of credit opening and confirmation fees, OPF_s^{lc} and COF_d^{lc} , are based on survey answers for Cambodia and Viet Nam.
- (d) The cost of funds for using letters of credit for an exporter, CF_s^{lc} , are calculated by multiplying the costs of financing for cash in advance (cia) and internal working capital (int_wc) for each region by the ratio of the risk on export/import letters of credit – measured by the average default rate on export and import letters of credit from the ICC (2020b) – ND_s^{lc} – and the average default rate on cash in advance and internal working capital measured as the share of bank non-performing loans also employed above, ND_s^{cia} :

$$CF_s^{\text{lc}} = \frac{ND_s^{\text{lc}}}{ND_s^{\text{cia}}} CF_s^{\text{cia}} \quad (18)$$

Therefore, the cost of funds for letters of credit is lower than for cash in advance and internal working capital, reflecting the fact that letters of credit are less risky.

(2) Non-surveyed countries:

- (a) The letter of credit opening and confirmation fees, OPF_d^{lc} and COF_s^{lc} are based on average fees in members of the Organisation for Economic Co-operation and Development.
- (b) The costs of financing for cash in advance and internal working capital, CF_d^{cia} and $CF_s^{int_wc}$, are based on lending rates from the IMF.²
- (c) To obtain the costs of financing of import and export loans, $CF_d^{loa,imp}$ and $CF_s^{loa,exp}$, the costs of financing for cash in advance/internal working capital based on lending rates from the IMF are scaled down by a factor of two reflecting that interest rates for microfinance are approximately twice as large as for trade loans as discussed for the surveyed countries.
- (d) The cost of funds for using letters of credit for an exporter, CF_s^{lc} , are calculated in the same way as for surveyed countries, using equation (18).

Calibration of trade finance shares

Since there are four ways to finance international trade in the model, four shares are calibrated for region s :

- import and export loans, $sh_s^{loa,imp}$, $sh_s^{loa,exp}$;
- letters of credit, sh_s^{lc} ;
- internal working capital, $sh_s^{int_wc,exp}$;
- cash in advance, sh_s^{cia} .

The analysis proceeds in two steps to obtain the shares of trade finance. First, insights from the survey and from the literature are employed to obtain trade finance shares at the country level. Second, data on the shares of foreign-owned firms and related-party trade per sector are employed to introduce sectoral variation in the trade finance shares.

Aggregate trade finance shares

The aggregate trade finance shares for the two groups of countries are calculated as follows:

(1) Surveyed countries:

- (a) The share of trade covered by all trade finance (letters of credit, import/export loans), sh_s^{tf} , is calculated based on the data in the survey providing the amount of trade finance relative to the value of trade (sum of exports and imports) with the amount of trade finance corrected for non-response. The shares of individual trade finance instruments (import loans, export loans, letters of credit) are also given by the survey. Since the shares of trade finance are expressed in the model as a share of respectively exports and imports, whereas the share of trade finance is a share of the sum of exports and imports in the survey, the formula is multiplied by $\frac{1}{sh_imp}$ and $\frac{1}{1-sh_imp}$ in the formula to obtain the shares of import loans and letters of credit in the importer (destination d) and the share of export loans in the exporter (source s):

$$sh_d^{loa,imp} = sh_d^{loa,imp,sur} \cdot \frac{1}{sh_imp_d} \cdot sh_d^{tf} \quad (19)$$

$$sh_d^{lc} = sh_d^{lc,sur} \cdot \frac{1}{sh_imp_d} \cdot sh_d^{tf} \quad (20)$$

$$sh_s^{loa,exp} = sh_s^{loa,exp,sur} \cdot \frac{1}{1-sh_imp_d} \cdot sh_s^{tf} \quad (21)$$

Multiplying these shares by respectively imports and exports and adding up, the baseline amount of trade finance in the model is equal to the amount of trade finance, TF_s , in the survey:

$$\begin{aligned}
TF_s &= sh_s^{loa,imp,sur} \cdot \frac{1}{sh_{imp_s}} \cdot sh_d^{tf} \cdot imp_s + (sh_s^{lc,sur} + sh_s^{loa,exp,sur}) \cdot \frac{1}{1 - sh_{imp_d}} \cdot sh_s^{tf} \cdot exp_s \\
&= (sh_s^{loa,imp,sur} + (sh_s^{lc,sur} + sh_s^{loa,exp,sur})) \cdot sh_s^{tf} \cdot (imp_s + exp_s) \\
&= sh_s^{tf} \cdot (imp_s + exp_s)
\end{aligned} \tag{22}$$

- (b) The share of trade covered by internal working capital and cash in advance are assumed to be 80 and 20 per cent, respectively, of the remaining share for exports from source $s = vnm, khm$ to destination $d \neq vnm, khm$ (i.e. Viet Nam, Cambodia), reflecting that firms from developing country have less market power vis-à-vis their trading partners:

$$sh_s^{int,wc} = 0.8(1 - sh_s^{loa,imp} - sh_s^{lc} - sh_s^{loa,exp}) \tag{23}$$

$$sh_d^{cia} = 0.2(1 - sh_d^{loa,imp} - sh_d^{lc} - sh_d^{loa,exp}) \tag{24}$$

- (c) Furthermore, it is assumed that 20 and 80 per cent, respectively, of the remaining share for imports into destination $d = vnm, khm$ and $s \neq vnm, khm$ are allocated to internal working capital and cash in advance:

$$sh_s^{int,wc} = 0.2(1 - sh_s^{loa,imp} - sh_s^{lc} - sh_s^{loa,exp}) \tag{25}$$

$$sh_d^{cia} = 0.8(1 - sh_d^{loa,imp} - sh_d^{lc} - sh_d^{loa,exp}) \tag{26}$$

(2) Non-surveyed countries:

- (a) The share of trade covered by letters of credit, sh_s^{lc} , is based on trade between the United States and region s as reported in Niepmann and Schmidt-Eisenlohr (2017):³

$$sh_s^{lc} = sh_{sUSA}^{lc} \tag{27}$$

- (b) The share of trade covered by import loans and export loans is equal to the share of trade covered by letters of credit based on data in AfDB (2022), indicating that letters of credit and import plus export loans have approximately an equal share in total trade finance:

$$sh_s^{loa,exp} = 0.5sh_{sUSA}^{lc} \tag{28}$$

$$sh_s^{loa,imp} = 0.5sh_{sUSA}^{lc} \tag{29}$$

Furthermore, the Bank for International Settlements (BIS, 2014) reports a global coverage of trade by trade finance of 60 per cent. Accordingly, the share of trade finance in non-surveyed countries is rescaled to yield to a 60 per cent coverage of trade finance.

- (c) Between non-surveyed countries, the share of trade covered by internal working capital and cash in advance are each 50 per cent of the remaining share:⁴

$$sh_s^{int,wc,exp} = 0.5(1 - sh_s^{tf}) \tag{30}$$

$$sh_s^{cia,imp} = 0.5(1 - sh_s^{tf}) \tag{31}$$

Sectoral trade finance shares considering foreign-owned firms and related-party trade

The share of local trade finance is expected to be a function of the share of sales by foreign-owned firms and the share of related-party trade.⁵ The crucial reason to embark on this exercise is to ensure that the share of local trade finance in the counterfactual cannot rise if the trade by foreign-owned firms is financed by foreign banks (offshore financing). The shares of trade finance from s to d add to 1 in the model:

$$sh_s^{lc} + sh_s^{loa,exp} + sh_s^{int,wc,exp} + sh_d^{lc} + sh_d^{loa,imp} + sh_d^{cia,imp} = 1 \tag{32}$$

Given that data are available on the share of exports and imports by foreign-owned (fo) firms, sh_{sc}^{fo} , exports and imports can be divided into two components, exports/imports by domestic and by foreign-owned firms. The share of trade finance is then calculated for each of these. For sales by domestic-owned firms, the same approach is used as above, provided in equations (19)-(31).

On exports from region $s = \text{vnm, khm}$ in sector c by foreign-owned firms, the share of domestic trade finance is scaled down by a factor $sc_for_{sc}^{sur}$ (the superscript sur for surveyed countries) relative to the share of trade finance provided by domestic-owned firms:

$$sh_{sc}^{loa,exp,fo} = sc_for_{sc}^{sur} \cdot sh_s^{loa,exp} \quad (33)$$

The use of internal working capital and cash in advance on exports by foreign-owned firms from $s = \text{vnm, khm}$ is also scaled down with foreign-owned firms instead employing trade finance in the destination market in the form of offshore financing (either import loans in destination $d \neq \text{vnm, khm}$ or letters of credit from destination $d \neq \text{vnm, khm}$):

$$sh_{sc}^{int_wc,fo} = sc_for_{sc}^{sur} \cdot sh_s^{int_wc} \quad (34)$$

$$sh_{dc}^{cia,fo} = sc_for_{sc}^{sur} \cdot sh_d^{cia} \quad (35)$$

The shares of (offshore) trade finance provided by destination $d \neq \text{vnm, khm}$ are adjusted to make sure that shares add to 1:

$$sh_{dc}^{loa,imp,fo} = \frac{sh_d^{loa,imp}}{sh_d^{loa,imp} + sh_d^{lc}} \left(1 - sh_{sc}^{loa,exp,fo} - sh_{sc}^{int_wc,fo} - sh_{dc}^{cia,fo} \right) \quad (36)$$

$$sh_{dc}^{lc,fo} = \frac{sh_d^{lc}}{sh_d^{loa,imp} + sh_d^{lc}} \left(1 - sh_{sc}^{loa,exp,fo} - sh_{sc}^{int_wc,fo} - sh_{dc}^{cia,fo} \right) \quad (37)$$

Equivalently, on imports into region $d \neq \text{vnm, khm}$ in sector c , the share of domestic trade finance and cash in advance is scaled down by the same factor:

$$sh_{dc}^{loa,imp,fo} = sc_for_{sc}^{sur} \cdot sh_d^{loa,imp} \quad (38)$$

$$sh_{dc}^{lc,fo} = sc_for_{sc}^{sur} \cdot sh_d^{lc} \quad (39)$$

$$sh_{dc}^{cia,fo} = sc_for_{sc}^{sur} \cdot sh_d^{cia} \quad (40)$$

And the shares of (offshore) trade finance and the share of internal working capital provided by source $s \neq \text{vnm, khm}$ are adjusted to make sure that shares add to 1:

$$sh_{sc}^{loa,exp,fo} = \frac{sh_s^{loa,exp}}{sh_s^{loa,exp} + sh_s^{int_wc}} \left(1 - sh_{dc}^{loa,imp,fo} - sh_{dc}^{lc,fo} - sh_{dc}^{cia,fo} \right) \quad (41)$$

$$sh_{sc}^{int_wc,fo} = \frac{sh_s^{int_wc}}{sh_s^{loa,exp} + sh_s^{int_wc}} \left(1 - sh_{dc}^{loa,imp,fo} - sh_{dc}^{lc,fo} - sh_{dc}^{cia,fo} \right) \quad (42)$$

The scaling factor $sc_for_{sc}^{sur}$ is defined as the share of trade financed with local trade finance in the surveyed countries for trade by foreign-owned firms relative to domestic firms. It is determined by the share of related-party imports/exports in total imports/exports of foreign-owned firms with $sc_for_{sc}^{sur}$ inversely related to this share.⁶ Hence, when the share of related-party trade is larger, the share of trade employing offshore financing is larger and the share employing local trade finance is thus smaller. Besides sectoral variation in $sc_for_{sc}^{sur}$ determined by the share of related-party trade in trade by foreign-owned firms sc_forsec_c , there is also country-level variation in $sc_for_{sc}^{sur}$ set equal to a factor of 0.5 based on evidence from the firm-level survey that foreign firms are half as likely to use domestic trade finance:

$$sc_for_{sc}^{sur} = 0.5sc_forsec_c^{sur} \quad (43)$$

Summarizing, the sum of shares on exports from source $s = \text{vnm, khm}$ to destination $d \neq \text{vnm, khm}$, can written as:

$$sh_{sc}^{\text{loa,exp,tot}} = \left(sc_{\text{for}_{sc}}^{\text{sur}} \cdot sh_{sc}^{\text{fo,exp}} + (1 - sh_{sc}^{\text{fo,exp}}) \right) \cdot sh_s^{\text{loa,exp}} \quad (44)$$

$$sh_{sc}^{\text{int_wc,tot}} = \left(sc_{\text{for}_{sc}}^{\text{sur}} \cdot sh_{sc}^{\text{fo,exp}} + (1 - sh_{sc}^{\text{fo,exp}}) \right) \cdot sh_s^{\text{int_wc}} \quad (45)$$

$$sh_{dc}^{\text{cia,tot}} = \left(sc_{\text{for}_{sc}}^{\text{sur}} \cdot sh_{sc}^{\text{fo,exp}} + (1 - sh_{sc}^{\text{fo,exp}}) \right) \cdot sh_{dc}^{\text{cia}} \quad (46)$$

$$sh_{dc}^{\text{loa,imp,tot}} = \frac{sh_d^{\text{loa,imp}}}{sh_d^{\text{loa,imp}} + sh_d^{\text{lc}}} \left((1 - sh_{sc}^{\text{loa,exp,fo}} - sh_{sc}^{\text{int_wc,fo}} - sh_{dc}^{\text{cia,fo}}) \cdot sh_{sc}^{\text{fo,exp}} + (1 - sh_{sc}^{\text{fo,exp}}) \cdot sh_d^{\text{loa,imp}} \right) \quad (47)$$

$$sh_{dc}^{\text{lc,tot}} = \frac{sh_d^{\text{lc}}}{sh_d^{\text{loa,imp}} + sh_d^{\text{lc}}} \left((1 - sh_{sc}^{\text{loa,exp,fo}} - sh_{sc}^{\text{int_wc,fo}} - sh_{dc}^{\text{cia,fo}}) \cdot sh_{sc}^{\text{fo,exp}} + (1 - sh_{sc}^{\text{fo,exp}}) \cdot sh_d^{\text{lc}} \right) \quad (48)$$

Next, on imports from source $s \neq \text{vnm, khm}$ into $d = \text{vnm, khm}$ yields:

$$sh_{dc}^{\text{loa,imp,tot}} = \left(sc_{\text{for}_{sc}}^{\text{sur}} \cdot sh_{sc}^{\text{fo,imp}} + (1 - sh_{dc}^{\text{fo,imp}}) \right) \cdot sh_d^{\text{loa,imp}} \quad (49)$$

$$sh_{dc}^{\text{lc,tot}} = \left(sc_{\text{for}_{sc}}^{\text{sur}} \cdot sh_{sc}^{\text{fo,imp}} + (1 - sh_{dc}^{\text{fo,imp}}) \right) \cdot sh_d^{\text{lc}} \quad (50)$$

$$sh_{dc}^{\text{cia,tot}} = \left(sc_{\text{for}_{sc}}^{\text{sur}} \cdot sh_{sc}^{\text{fo,imp}} + (1 - sh_{dc}^{\text{fo,imp}}) \right) \cdot sh_d^{\text{cia}} \quad (51)$$

$$sh_{sc}^{\text{loa,exp,tot}} = \frac{sh_s^{\text{loa,exp}}}{sh_s^{\text{loa,exp}} + sh_s^{\text{int_wc}}} \left((1 - sh_{dc}^{\text{loa,imp,fo}} - sh_{dc}^{\text{lc,fo}} - sh_{dc}^{\text{cia,fo}}) \cdot sh_{dc}^{\text{fo,imp}} + (1 - sh_{sc}^{\text{fo,imp}}) \cdot sh_s^{\text{loa,exp}} \right) \quad (52)$$

$$sh_{sc}^{\text{iwc,tot}} = \frac{sh_s^{\text{iwc}}}{sh_s^{\text{loa,exp}} + sh_s^{\text{iwc}}} \left((1 - sh_{dc}^{\text{loa,imp,fo}} - sh_{dc}^{\text{lc,fo}} - sh_{dc}^{\text{cia,fo}}) \cdot sh_{dc}^{\text{fo,imp}} + (1 - sh_{sc}^{\text{fo,imp}}) \cdot sh_s^{\text{iwc}} \right) \quad (53)$$

Hence, for exports from $s = \text{vnm, khm}$, trade by foreign-owned firms does not use any cash in advance in the destination $d \neq \text{vnm, khm}$ or internal working capital in the source $s = \text{vnm, khm}$. For imports into $d = \text{vnm, khm}$, foreign firms do not use cia, but they do use iwc in the source $s \neq \text{vnm, khm}$.

The initial parameter for the share of trade covered by trade finance, sh_d^{tf} , is adjusted to make sure that the trade-weighted average of trade finance provided by domestic financial institutions is equal to the values in the survey – 3 per cent for Cambodia and 20.5 per cent for Viet Nam.

Figure III.1 displays the share of different trade finance instruments in the baseline and the counterfactual Scenarios 1 and 2.

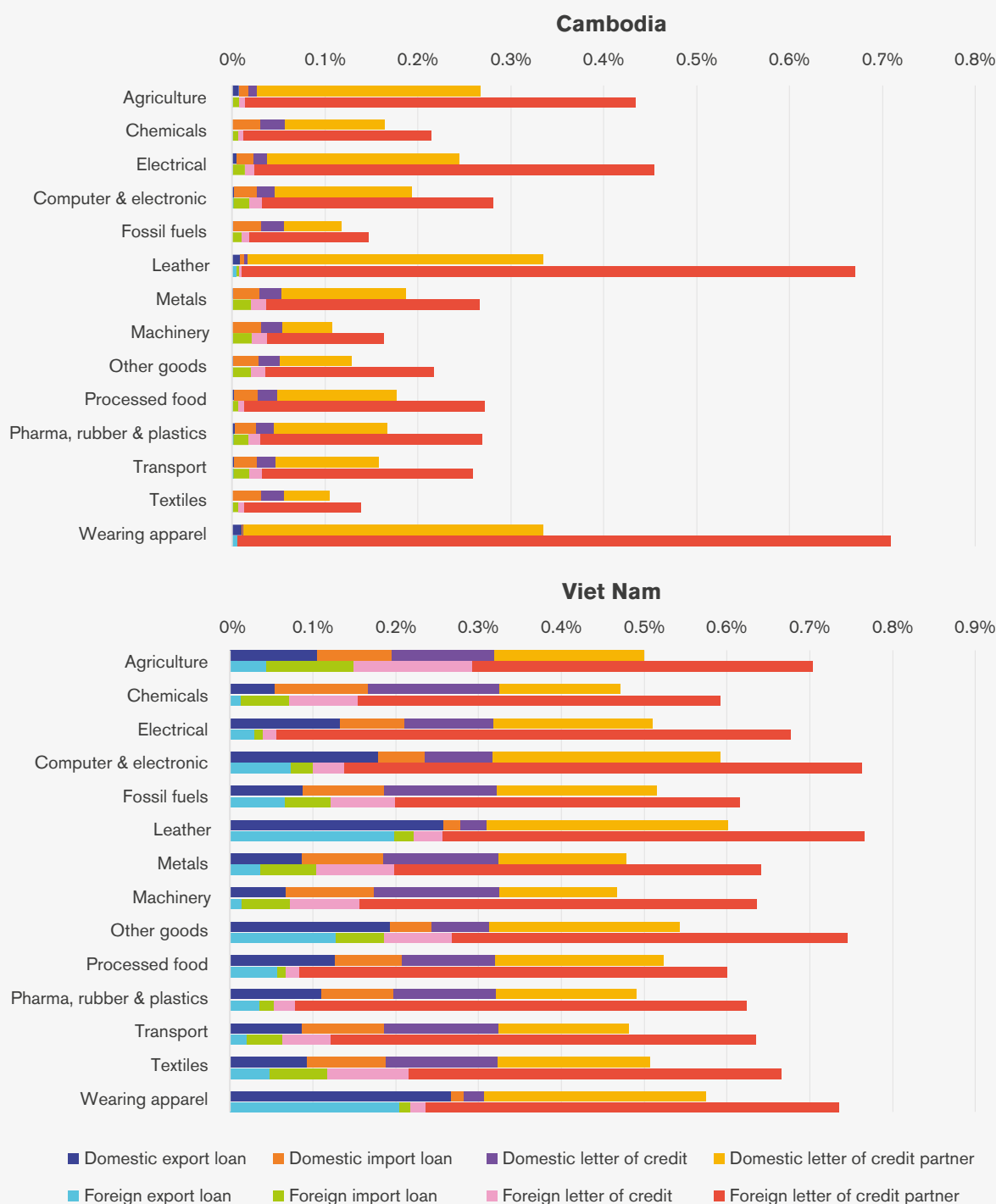
Construction of counterfactuals

In Scenarios 1 and 2, the coverage of trade by trade finance instruments are raised by 10 and 20 percentage points, respectively. To obtain this change, the overall share of trade finance, sh_s^{tf} in equations (19)–(21) is increased until the trade-weighted average of trade (exports plus imports) covered by trade finance instruments is increased by 10 and 20 percentage points. When the share of trade finance instruments increase, the shares of other instruments (cash in advance, internal working capital) fall proportionally. For some sector–importer–exporter combinations, however, this would imply that shares would become negative. Therefore, the shares of domestic and foreign trade finance are reduced to make sure that shares always add to 1.

Letters of credit fees are reduced to the level of China in Scenario 3, and the costs of financing for import and export loans and letters of credit are reduced in Scenario 4, employing a double differencing approach. The difference between the costs of financing and the interbank rates are reduced to 50 per cent of this difference on average globally in the model. Scenario 5 combines the shocks from Scenarios 2–4.

FIGURE III.1

Share of different trade finance instruments by domestic and partner banks for domestic and foreign-owned firms, by sector (in per cent)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3, various sources described in the text and data on the share of foreign-owned firms and the share of related-party trade. The figure displays the share of different trade finance instruments provided by domestic banks (export loans, import loans, letters of credit) and by foreign banks (letter of credit partner) for domestic firms and for foreign firms.

Figure III.2 displays the share of trade covered by different trade finance instruments. This figure differs from III.1 since it includes also foreign trade finance instruments, such that shares add to 1.

Figure III.3 shows the projected reduction in trade costs for exports and imports by trading partner. Although for many trading partners, the projected reduction in trade costs is larger on the import side than on the export side, the regions where it is opposite are more important trading partners – implying that for total trade costs the reduction is larger on the export side. The larger trade cost reductions on the export side are one explanation for the larger projected changes in the export side as explained in the main text.

However, there is a second reason related to the general equilibrium nature of the model: services trade is excluded from the results, since trade costs are assumed to stay constant for services trade. On the export side, services trade is projected to fall because of rising factor costs due to the reduced trade costs for merchandise trade and thus the increased demand for factor inputs. On the import side, services trade is projected to rise because of increased demand for intermediate inputs. Given that a fixed trade-balance-to-GDP ratio is assumed, this implies that merchandise exports have a tendency to rise more than imports, since changes in the total value of exports and imports (including services trade) relative to GDP should be the same.

Robustness checks

Robustness checks are conducted on two assumptions with limited empirical underpinning. First, the survey results only provide information on the share of trade covered by trade finance instruments. However, the distribution of the remaining share of trade between cash in advance and internal working capital is unknown. In the baseline, the assumption is made that 80 per cent of imports into Cambodia and Viet Nam not covered by trade finance were financed by cash in advance and 20 per cent by internal working capital; whereas for exporters from Cambodia and Viet Nam, the share of cash in advance is 20 per cent and the share of internal working capital 80 per cent. For trade between other regions, the shares are assumed to be 50 per cent. A robustness check is conducted assuming that the shares are also 50 per cent for trade with Cambodia and Viet Nam.

Second, for the surveyed countries, literature indicates that the assumption is backed up by empirical evidence that the costs of financing of employing cash in advance and internal working capital are twice as large as the financing costs for import and export loans (see Heng *et al.*, 2021, for Cambodia, and Bevacqua *et al.*, 2021, for Viet Nam). For the other regions, the same assumption is made; that is, that the interest rates on trade finance instruments are half of that of other forms of financing. In those regions, however, data on lending rates for other forms of financing are available (through IMF data) and the costs of trade finance were thus calculated by dividing these lending rates by 2. Two robustness checks are conducted first reducing the premium to 1.5 and then raising it to 2.5.

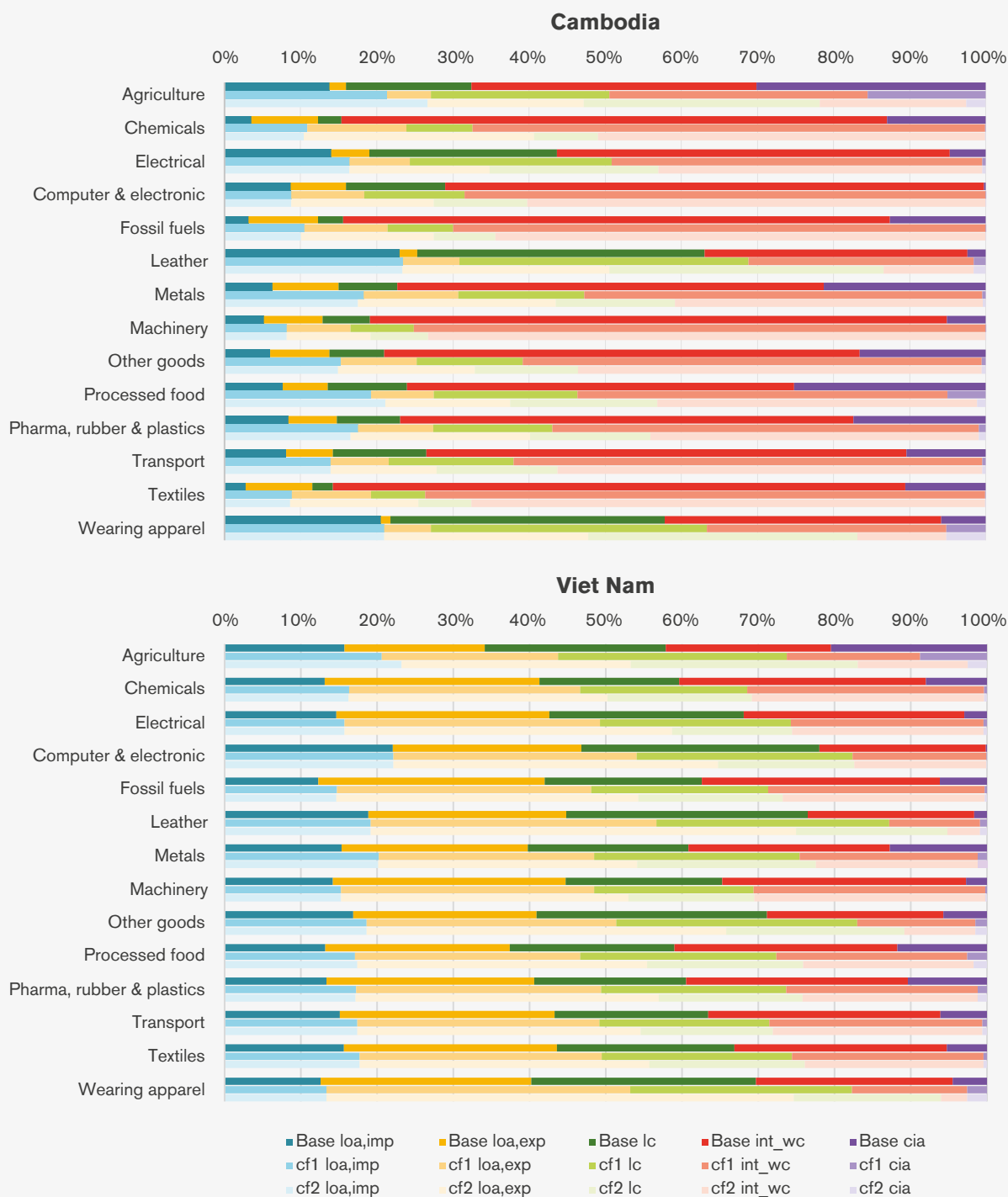
Figure III.4 shows that the impact of changing the assumptions on the distribution between cash in advance and internal working capital is relatively modest. With a 50/50 split between cash in advance and internal working capital, the projected increase of both exports and imports is smaller than in the benchmark because there is less scope to expand trade finance. The reason is that trade finance is replacing cash in advance and internal working capital and with the assumed 80/20 split trade finance can be expanded more.

For imports into the surveyed countries, there is more cash in advance in the surveyed countries with 80/20 in the benchmark implying that there is more scope to replace this with trade finance. For exports from the surveyed countries there is more internal working capital in the surveyed countries 20/80 in the benchmark, which implies again that there is more scope to replace the use of internal working capital with trade finance. The assumed split is intuitive because in exports from Cambodia and Viet Nam to other more developed regions less use of cash in advance is expected; whereas for imports into the surveyed countries, there is more scope for cash in advance.

Moving to the next set of robustness checks, reducing the difference between financing costs on trade finance and non-trade finance instruments will reduce the projected increase in exports and imports, whereas increasing this

FIGURE III.2

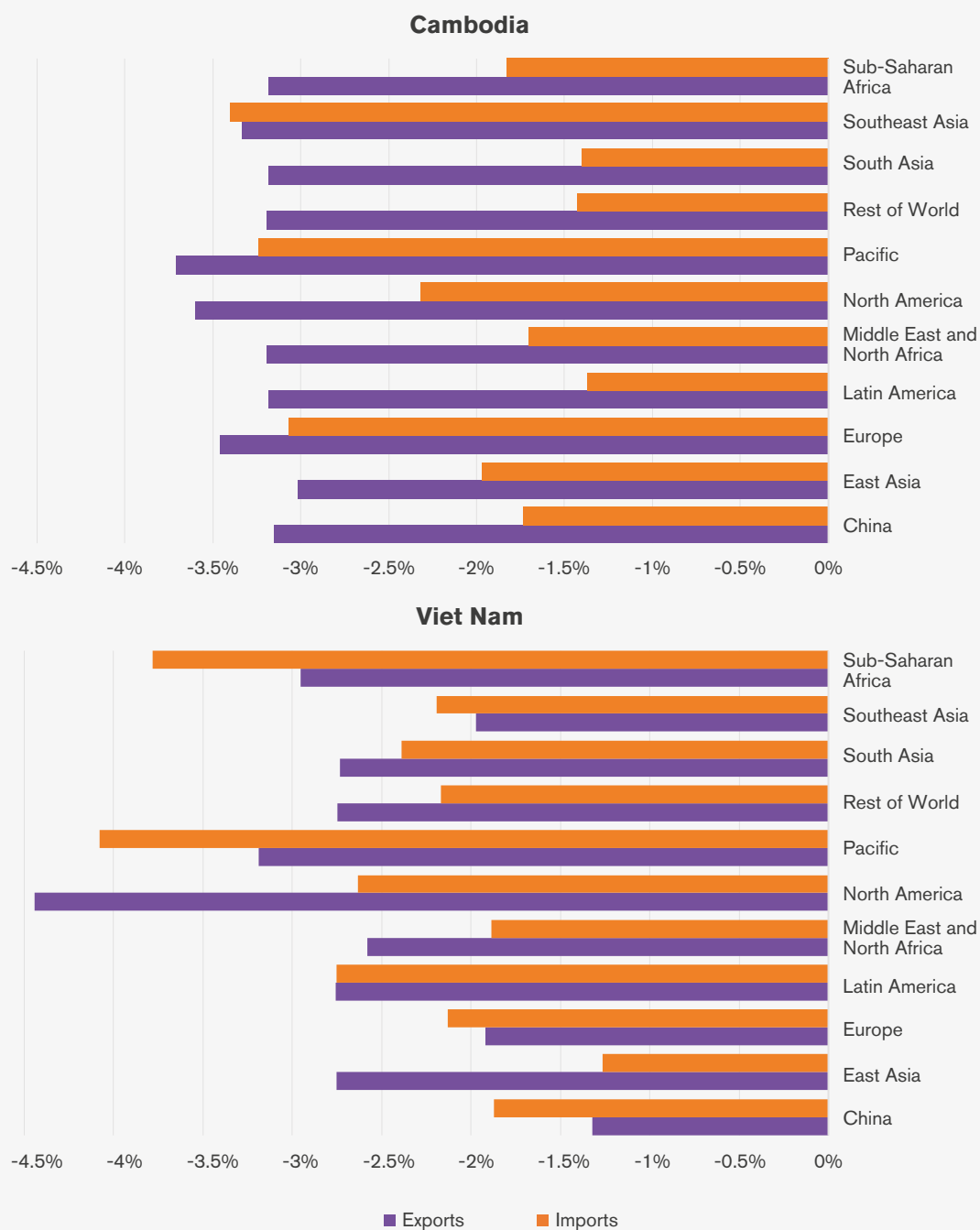
Share of trade covered by different trade finance instruments in baseline and counterfactual Scenarios 1 and 2 (in per cent)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3, various sources described in the text and data on the share of foreign-owned firms and the share of related-party trade. The figure displays the share of different instruments employed to finance international trade in the baseline and for counterfactual Scenarios 1 (cf1) and 2 (cf2): import loans (loa,imp); export loans (loa,exp), letters of credit (lc), internal working capital (int_wc) and cash in advance (cia).

FIGURE III.3

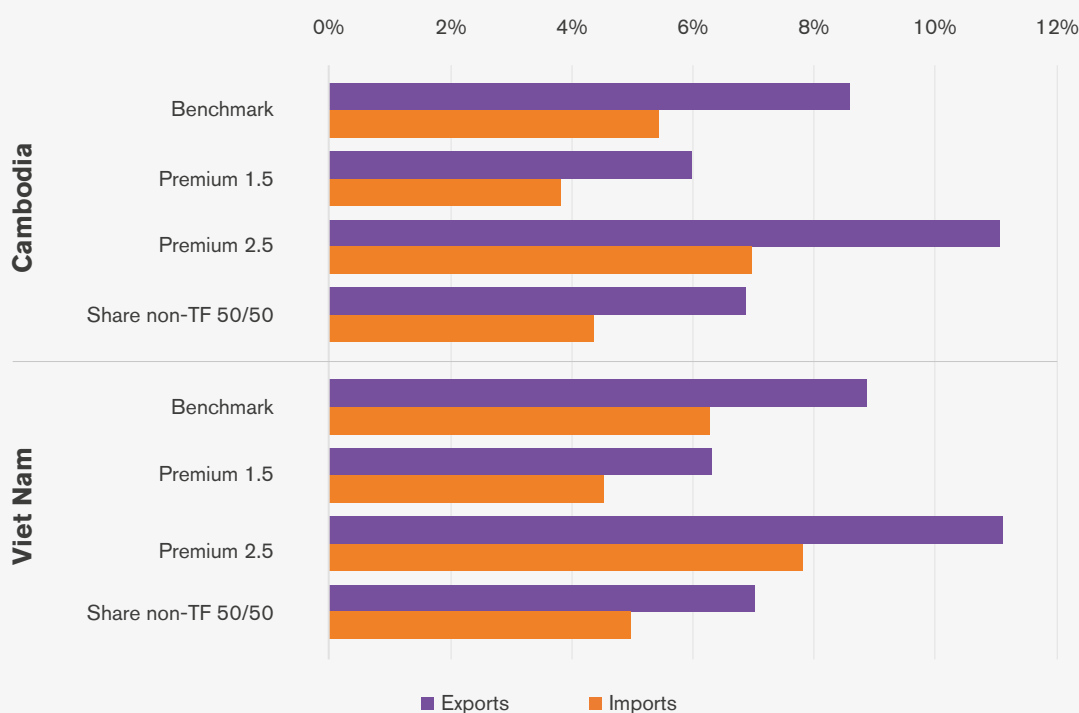
Projected changes in trade costs by trading partner (in per cent)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3 and various sources described in the text. The figure displays the projected reduction in total trade costs for imports and exports to and from Cambodia and Viet Nam for the combined scenario.

FIGURE III.4

Projected increase in the volume of trade for different assumptions in Scenario 5 (combined) (in per cent)



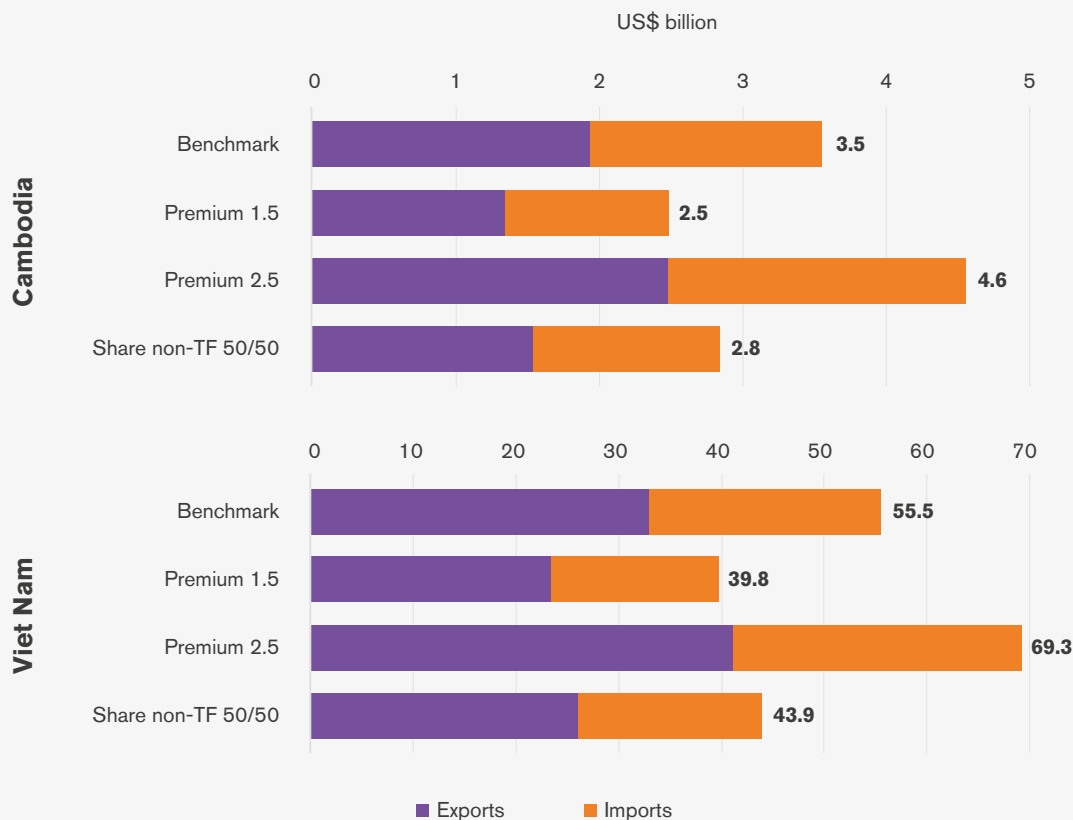
Source: Simulations with the comparative static version of the WTO Global Trade Model extended with trade costs being a function of the costs and shares of trade finance. The figure displays the projected change in the volume of real imports and exports for Cambodia and Viet Nam for Scenario 5 (combined) under different assumptions. Share non-TF 50/50 assumes a 50 per cent share for cash in advance and internal working capital for trade not financed with trade finance (letters of credit, import and export loans).

difference would make the projected increases larger. With a premium of 1.5, the projected expansion of trade is only about 4 per cent for imports and 6 per cent for exports for both countries, compared to 5-6 per cent for imports and 8-9 per cent for exports in the benchmark. With a premium of 2.5, the increase would be 7-8 per cent for imports and more than 10 per cent for exports. This would translate into projected changes in the value of trade of only US\$ 2.5 billion for Cambodia and US\$ 40 billion for Viet Nam for a premium of 1.5, and increases of US\$ 3.5 billion and US\$ 55 billion in the benchmark (see Figure III.5).

These results are expected, since expanding the coverage of trade by trade finance instruments will lead to a larger reduction in total trade finance and thus trade costs when the reduction in the costs of financing drop more. It is important to observe here that in the robustness checks the premium for the costs of trade finance instruments are also modified in the surveyed countries – although the literature provides support for the assumption of a premium of 2 for the surveyed countries. Therefore, the benchmark results are considered robust.

FIGURE III.5

Projected increase in the volume of trade for different assumptions in Scenario 5 (combined) (in US\$ billion)



Source: IFC–WTO calculations based on the 2023 IFC survey of trade finance in the Mekong-3 and various sources described in the text. The figure displays the projected reduction in total trade costs for imports and exports to and from Cambodia and Viet Nam for the combined scenario.

Endnotes

1. See Financial Soundness Indicators, available at <https://data.imf.org/?sk=51b096fa-2cd2-40c2-8d09-0699cc1764da>.
2. See International Financial Statistics for data files on lending interest rates for 2022, available at <https://data.imf.org/?sk=4c514d48-b6ba-49ed-8ab9-52b0c1a0179b>. The data for December 2022 are updated to 30 June 2023, using the change in interbank rates for the same period from a range of sources.
3. To obtain numbers for aggregate regions, trade-weighted averages are employed.
4. This assumption is inconsequential for the working of the model, since trade costs between non-surveyed countries are not modified in the counterfactuals.
5. Only adjustments for trade between $s = \text{vnm, khm}$ and trading partners are incorporated because only for these trade flows will counterfactuals be implemented.
6. The share of trade by foreign-owned firms is based on census data for Viet Nam. The share of related-party trade US data is proxied by shares of related-party trade between the United States and the surveyed countries (see https://www.census.gov/foreign-trade/Press-Release/related_party/index.html).

Abbreviations

CBR	correspondent banking relationship
CRRA	constant relative risk aversion
GTM	Global Trade Model
GVC	global value chain
ICC	International Chamber of Commerce
IFC	International Finance Corporation
IMF	International Monetary Fund
MSME	micro, small and medium-sized enterprise
SCF	supply chain finance
SME	small and medium-sized enterprise
UNCTAD	United Nations Conference on Trade and Development
WEO	World Economic Outlook
WITS	World Integrated Trade Solution

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Cambodia, the Lao People's Democratic Republic and Viet Nam – the so-called Mekong-3 – have experienced rapid trade growth over the last ten years. However, growth could be boosted even further by improving access to trade finance, such as loans and guarantees, for locally owned businesses seeking to trade globally.

This publication presents the results of two surveys undertaken by the IFC to determine the level of trade finance available to businesses in the Mekong region. An analysis of the data conducted by the WTO explores the potential impact of an expansion in trade finance and how this could lead to greater integration into world trade and more inclusiveness, with increased participation in global supply chains by small businesses and women-owned enterprises.

The publication is intended to serve as a guide to how domestic financial sectors can reorient their operations to support cross-border trade and enhanced access to global markets.

