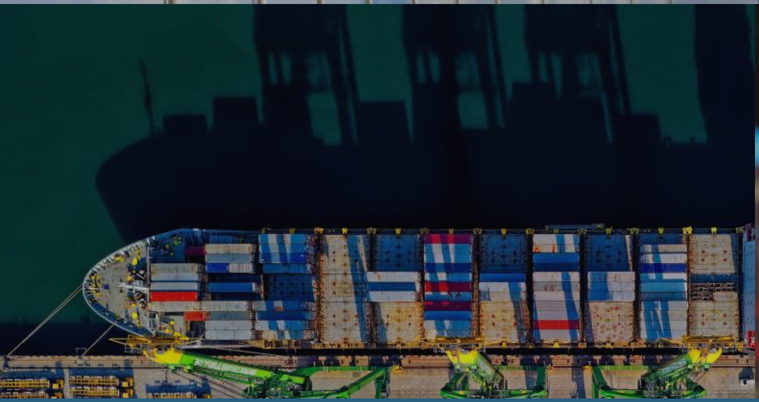

Towards ASEAN's Financial Integration

Advancing Trade Finance Through Innovative Digital Technologies

February 2024

GROWTH GATEWAY
GLOBAL PROSPERITY THROUGH TRADE & INVESTMENT
UK Government

HM Government

United Kingdom Mission to ASEAN

BCG BOSTON CONSULTING GROUP

Foreword

ASEAN's economy continues to grow at an impressive rate. With collective GDP at £2.8 trillion, over two-thirds of the population in the workforce and with a low-cost environment, ASEAN is emerging as a key growth location for businesses globally. In recognition of this impressive growth, the UK is committed to working more closely with countries across the Indo-Pacific. The UK became a Dialogue Partner to ASEAN in 2021 and has since committed to supporting ASEAN's economic and financial integration to boost ties between our businesses and our citizens.

The UK is a world leader in financial services. The sector employs 1 in every 13 people in the UK. Financial and related professional business services generated a trade surplus of £82.3 billion in 2021. As we have worked together to develop the ASEAN-UK Dialogue Partnership, UK and ASEAN Ministers have identified financial services cooperation as a priority.

This report is an excellent study by our partner Boston Consulting Group. It clearly sets out the scale of ASEAN's economic potential, highlighting the integral role financial integration plays in that journey. The liberalisation of financial services and capital markets fosters efficient allocation of resources across the region, enhances investment opportunities through open financial markets, and thus facilitates greater access for ASEAN's businesses and citizens to banking, insurance, and capital markets.

The UK undertook this study to help determine how best the UK and ASEAN can cooperate to increase ASEAN-UK trade links against the backdrop of significant potential growth. The research points to trade finance as the area where the UK can deliver the greatest impact on this agenda.

ASEAN's total trade value is 132% of its GDP - but 70-80% of such trade relies on financing. There is a £270-320 billion trade finance gap in ASEAN, which is set to widen even further. These figures are compelling, and strongly suggest that ASEAN policy reform is key harnessing its economic potential, boosting trade, including between ASEAN and the UK. The UK is keen to support ASEAN policymakers and companies, especially SMEs, in addressing this gap.

This report provides clear and coherent recommended steps for ASEAN's consideration. It summarises for ASEAN's consideration 5 catalytic enablers which would boost financial integration: cross-border data sharing and usability, systems interoperability, coordination of licensing regulations, improving digital literacy and adoption, and talent sourcing and development. The report then homes in on barriers to trade finance, as well as recommendations on first steps to address these challenges. It also contains a summary of British businesses who provide innovative solutions to minimise risk and boost efficiency.

Looking forward, we believe there is significant potential in bringing UK experts from the public and the private sector to ASEAN's doorstep to support ASEAN's financial integration efforts. Our ASEAN-UK Financial Services Collaboration Package, which will be launched shortly, represents a collective commitment from a range of UK banking and financing stakeholders to build mutually beneficial relations between ASEAN and UK thought-leaders and innovators. And our ASEAN-UK Economic Integration Programme includes a specific pillar on financial services, designed to support ASEAN's poorest people to access finance, as well as to support government reform.

Now is a vital moment to bolster ASEAN's financial integration efforts, as the global economy shifts. The familiar routes that defined the world trade map are being redrawn and trade blocs are playing a greater role, with ASEAN among the biggest winners in the new world trade order. Cumulative ASEAN trade is forecast to grow £950 billion in the next ten years due to the region's emergence as a key destination.

By ‘thinking big and starting small’, the report suggests how progress can be driven at the bank and country levels, creating a solid foundation for regional-level cooperation. These actions will stimulate trade and economic growth and bolster the regional banking sector's strength. And this will support the resilience of the ASEAN financial sector, as it moves from strength to strength.

Our compelling vision for the UK’s long-term partnership with ASEAN is built on sharing expertise, in partnership with our private sector. We will learn from each other, furthering an open, resilient and green market, and increasing intra-ASEAN and UK-ASEAN trade ties.


Sarah Tiffin, UK Ambassador to ASEAN and Martin Kent, His Majesty’s Trade Commissioner for Asia Pacific

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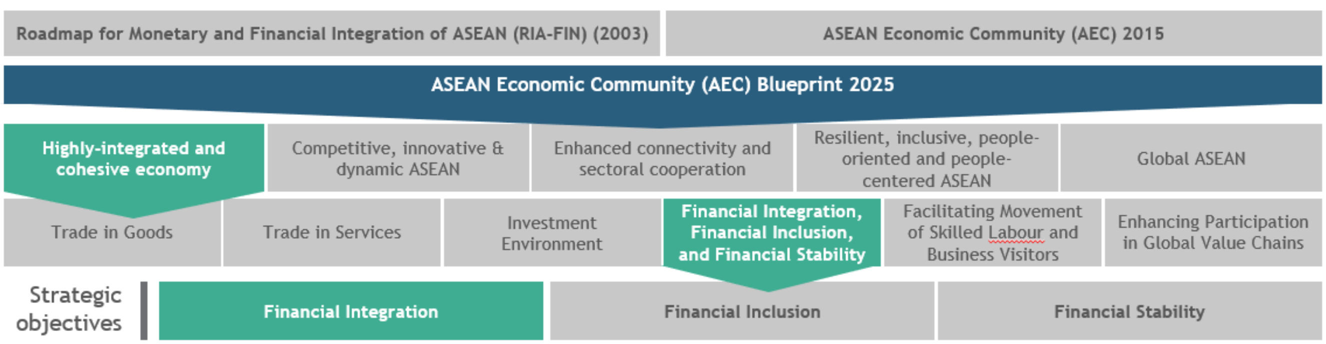
Purpose of this Report

The ASEAN Economic Blueprint (AEC) 2025 lays out the ambitions of the Association of Southeast Asian Nations (ASEAN) to deepen economic integration among ASEAN Member States (AMS) and enhance the region's competitiveness. Building on the progress from the AEC 2015, it envisions a highly integrated and cohesive economy that aims to achieve financial integration, financial inclusion and financial stability.

ASEAN's strategic objectives for these three areas are articulated as follows:

- *Financial Integration:* Facilitate intra-ASEAN trade and investment by increasing the role of ASEAN indigenous banks, having more integrated and connect insurance markets and capital markets
- *Financial Inclusion:* Deliver financial products and services to a wider community that is underserved, including MSMEs
- *Financial Stability:* Continue to strengthen regional infrastructure, particularly in times of regional stress

Figure 1: *Financial Integration as a key pillar of the ASEAN Economic Community Blueprint 2025*



Source: ASEAN Economic Community (AEC) Blueprint 2025, asean.org, Evolution of ASEAN Financial Integration in the Comparative Perspective, ASEAN Integration Report 2022

In support of the objectives for financial integration, this report provides perspectives on sector-agnostic recommendations (i.e. enabler-level initiatives) to enhance existing ASEAN efforts in financial integration. The report combines analysis of macroeconomic, trade, and industrial data, with focused engagement with more than 40 industry stakeholders, ensuring both a qualitative and quantitative approach to these findings. This report aims to support the ASEAN Economic Community, ASEAN Finance Ministers and Central Bankers and the various working groups under the Financial Integration Division (e.g. WC-ABIF[1], FSL[2], WC-PSS[3], etc.[4]) in driving dialogue and cooperation among public and private sectors across ASEAN Member States in order to accelerate regional financial services integration.

As part of the ongoing ASEAN-UK Collaboration on Financial Services, this edition of the report puts a spotlight on Trade Finance, a priority sub-sector critical to ASEAN's sustained regional economic growth. It presents data-backed impact estimations on the benefits of addressing trade finance challenges, a comprehensive assessment and validation of key challenges impacting access to trade finance supply in ASEAN and provides recommendations for consideration to address these challenges.

[1] Working Committee - ASEAN Banking Integration Framework
[2] Working Committee – Financial Services Liberalisation
[3] Working Committee - Payment and Settlement Systems
[4] Including but not limited to: Capital Accounts Liberalisation (CAL), Capital Market Development (CMD), Financial Inclusion (FINC)

Executive Summary

ASEAN, as a collective economy, is expected to become one of the four largest economies in the world by 2050. The region has a combined population of 680 million people, and a GDP of USD 3.6 trillion (GBP 2.8 trillion), making it an attractive market for both local and international investments. With over two-thirds of the population in the workforce and its low-cost environment, ASEAN emerged as the key hub for businesses globally.

Financial integration is a pivotal component for ASEAN to realise its growth potential. An integrated financial services sector enables ASEAN to operate as a collective economy, promoting efficient resources allocation, enhancing the region's competitiveness in the global market, and providing stability against financial crises which would otherwise be devastating for a standalone economy.

Now is an opportune time to bolster ASEAN's financial integration efforts, as the global economy experiences shifts in trade flows. Cumulative ASEAN trade is forecast to grow USD 1.2 trillion (GBP 950 billion) in the next ten years due to the region's emergence as a key destination for companies seeking to adopting supply chain diversification strategies.

While ASEAN has made progress towards financial integration, there is scope for further advancement, particularly to address five fundamental challenges that impact multiple financial services sub-sectors: data-sharing, systems interoperability, licensing regulations, digital literacy and adoption, and talent sourcing and development. These act as key drivers or catalysts because when addressed effectively, these enhance overall financial connectivity and efficiency.

Among the financial services sub-sectors, Trade Finance is identified as a priority sub-sector for integration due to its criticality to ASEAN economic growth. ASEAN's total trade value is 132% of its GDP and 70-80% of such trade relies on financing. The strong convergence on the benefits of trade finance and the region's commercial dynamics significantly bolsters the feasibility of integrating trade and supply chain within ASEAN.

However, there is a USD 350-400 billion (GBP 270-320 billion) trade finance gap in ASEAN that is expected to widen even further. While trade has grown by 4% in the last decade, trade finance supply has lagged with just a 2% growth. This gap impacts companies of all sizes, including large corporates and SMEs. Local banks are stepping in to increase finance supply in the region, but it is insufficient to fulfill the growing finance demand.

Bridging 10-20% of this trade finance gap can unlock USD 85-105 billion (GBP 70-80 Billion) in trade value uplift and create 6 million jobs in trade-related industries. Industry stakeholders believe that that bridging a portion of this gap is possible, given a rightly enabled regulatory environment and a collective effort from both private and public sector stakeholders.

The ASEAN trade finance gap is primarily driven by four challenges undermining the financial viability of trade finance providers: high risk-assessment costs, high loan processing costs, rising fraud risks, and inability to mitigate risks with insurance or alternative financing models.

These challenges share two systematic root causes (i) limited information transparency between banks and countries and (ii) lagging digital adoption. Addressing these two areas will unlock benefits for all stakeholders involved by reducing redundant investments and inefficiencies for fraudsters to take advantage of, resulting in a significant reduction in the trade finance gap.

There is a prevalence of technology providers offering cutting-edge tools and solutions to assist banks and countries overcome these issues. While many of the providers originate from the UK and the US, their solutions have shown successes in helping banks digitise operations and improve fraud detection across global markets, including in Southeast Asia. Given the accessibility to these technologies today, ASEAN banks and regulators can capitalise on this opportunity to unlock progress.

ASEAN can advance trade finance digitisation and information transparency through a three-pronged, multi-level approach, consisting efforts at in-bank, country, and regional levels. At the bank-level, private sector banks can lead pilot programs to form self-organising consortiums, allowing them to share costs and risks and unlock network benefits of collective technology adoption. At the country level, each member state can consider establishing centralised information registries to increase the transparency of inter-bank, trade-related information needed to prevent fraud. Lastly, at the regional level, member states can work towards a shared ambition to achieve regional information transparency.

ASEAN can embrace a 'Think Big, Start Small' mindset to drive progress. To amplify in-bank level efforts, the region can start with one consortium consisting of a few banks in champion member state/s, with a focus on documentary trade and risk mitigation technology use cases. Financial regulators can encourage this by offering regulatory and capacity-building support. Concurrently, regulators can drive cross-country knowledge sharing to explore solutions to enhance national trade information transparency.

The ASEAN economy possesses high growth potential, ready to be unlocked by accelerating financial services integration and addressing the trade finance gap. A unified effort among public and private sectors can drive ASEAN towards a more integrated, resilient, and prosperous economy, and the time is now.

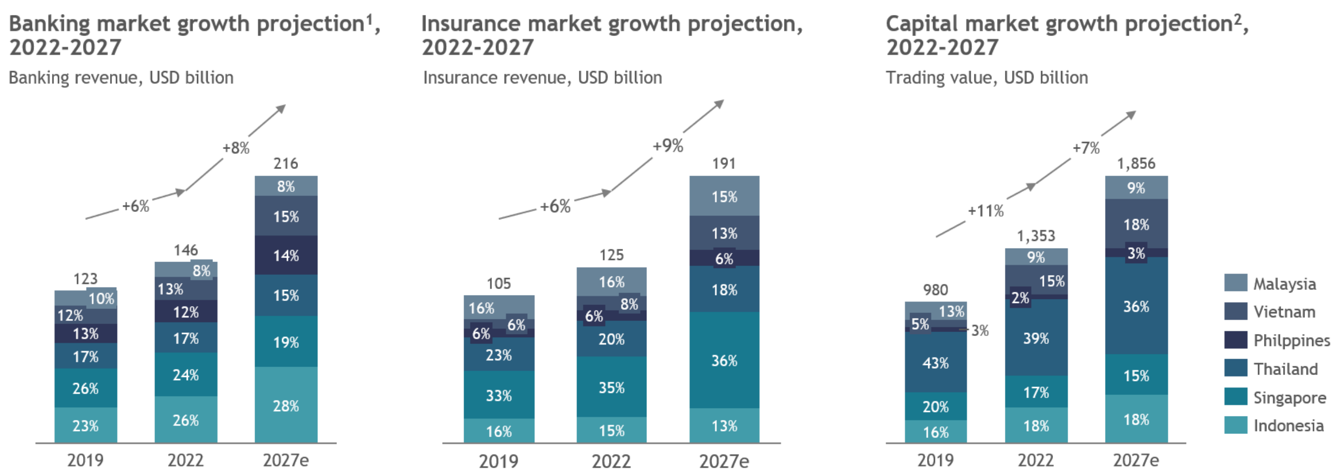
1. Now and Next: A Snapshot of Financial Integration in ASEAN

Importance of Financial Integration to ASEAN

ASEAN, as a collective economy, is expected to become one of the four largest economies in the world by 2050. The region has a combined population of 680 million people, and a GDP of USD 3.6 trillion (GBP 2.8 trillion), making it an attractive market for both local and international investments. With over two-thirds of the population in the workforce and its low-cost environment, ASEAN is emerging as the prime base for businesses globally. These factors contributed to the 7.2% annual growth projection, particularly driven by ASEAN's three largest industries, including manufacturing, services, and agriculture. This economic forecast not only underscores the region's vast potential but also emphasises the financial services sector's critical role in helping ASEAN realise its potential.

ASEAN's financial services sector is an attractive market with positive growth outlook across banking, insurance and capital sectors. The banking market is projected to grow at 8%, with banking revenues reaching USD 216 (GBP 170 billion) billion by 2027. Insurance markets are expected to grow by 9%, reaching USD 191 billion (GBP 150 billion) in insurance revenues by 2027, primarily concentrated in Singapore and Thailand. Meanwhile, capital markets are expected to grow by 7%, reaching trading values up USD 1.8 trillion (GBP 1.4 trillion) by 2027.

***Figure 2:** Financial services sector growth projections in six ASEAN countries*



1. Assume constant interest rates from 2022 to 2027 2. 2027 forecasted based on projected GDP growth by country
Source: BCG Global Banking Revenue Pools; Oxford Economic Exchange Rates, Country's Stock Exchange Reports, Country's Insurance Regulatory Body (MAS, OJK, OIC, MOF, Philippines Insurance Commission, ISM Yearbook)

Financial integration is a pivotal component in driving the economic growth of the region and in the financial sector's continued development. The liberalisation of financial services and capital markets fosters efficient allocation of resources across the region, enhances investment opportunities through open financial markets, and thus facilitates greater access to banking, insurance, and capital markets.

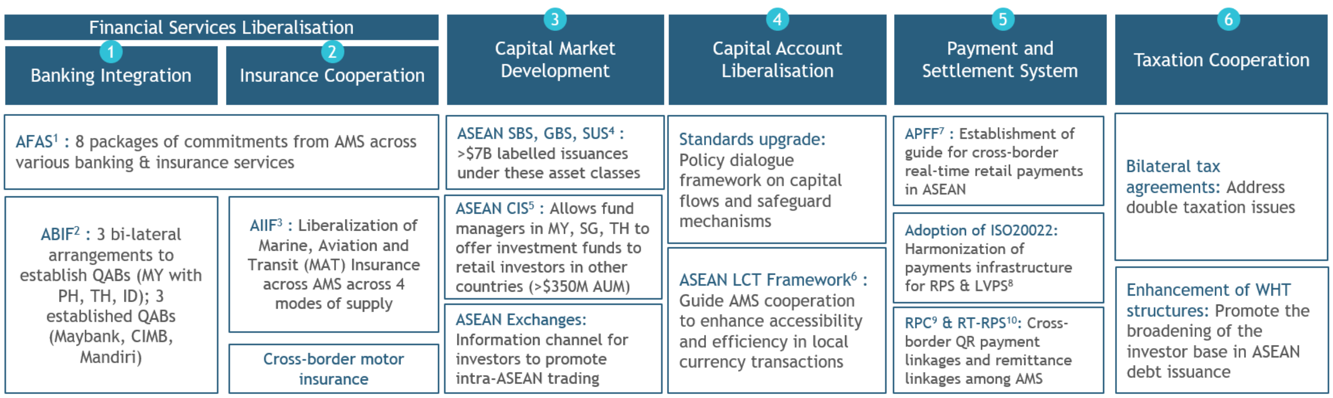
Moreover, a more integrated financial system allows for opportunities for risk sharing among countries in the region. In times of economic stress, countries can benefit from the collective strength of a unified financial network, which can provide a buffer against shocks that might otherwise be devastating for a standalone economy. This collective resilience is particularly important for ASEAN, given the region's exposure to various external risks, including fluctuating commodity prices and global financial volatility.

Now is the most opportune time to bolster ASEAN's financial integration efforts, as the global economy experiences shifts in trade flows. The familiar routes that defined the world trade map are being redrawn and trade blocs are playing a greater role, with Southeast Asian nations among the biggest winners in the new world trade order. Cumulative ASEAN trade is forecast to grow USD 1.2 trillion (GBP 950 billion) in the next ten years due to the region's emergence as a key destination for companies seeking to diversity their supply chain strategies.

Now: ASEAN's Milestones in Financial Integration

ASEAN has made progress to achieve regional financial integration along various areas of cooperation in the past decade, with regional initiatives having been agreed and partly implemented. Select key achievements on ASEAN Financial Integration are captured below:

Figure 3: *Select key achievements on ASEAN financial integration*



1. ASEAN Framework Agreement on Services, 2. ASEAN Banking Integration Framework, 3. ASEAN Insurance Integration Framework, 4. ASEAN Social Bond Standards, Green Bonds Standards, Sustainability Bond Standards; 5. ASEAN Collective Investments Framework; 6. Local Currency Settlement Framework; 7. ASEAN Payments Policy Framework; 8. Retail-payment systems & Large Value Payment Systems; 9. Regional Payment Connectivity; 10. Real-time Retail Payment System
Source: Finance Integration (asean.org), Evolution of ASEAN Financial Integration in the Comparative Perspective, ASEAN Integration Report 2022, Expert Interviews, BCG Analysis

Some key achievements include:

- **Financial Services Liberalisation:** Through the ASEAN Framework Agreement on Services (AFAS), ASEAN Member States have made commitments across various financial services, including banking and insurance services over eight rounds of negotiations since 1998. To date, while there are varying degrees of liberalisation across ASEAN Member States, there are convergences in select sectors, such as insurance for Marine, Aviation and Transit (MAT) insurance.
- **Banking Integration:** The ASEAN Banking Integration Framework (ABIF) provides a regional framework to encourage 'when ready' bilateral reciprocal arrangements for banking integration. This framework focuses on four areas: Harmonisation of principles of prudential regulations, building financial stability infrastructure, provision of capacity building for select ASEAN Member States, and setting up the criteria Qualified ASEAN Banks (QABs) to operate in ASEAN country as a 'domestic bank'. To date, three bilateral arrangements have been made to establish QABs between Malaysia and Philippines, Malaysia and Thailand and Malaysia and Indonesia, with three established QABs (Maybank, CIMB, Bank Madiri).
- **Capital Markets Development (CMD):** There has been various initiatives implemented to deepen ASEAN capital markets and drive interconnectedness, primarily outlined by the ASEAN Capital Markets

Forum (ACMF) Action Plans. Three of six priorities under the ACMF Action Plan 2016-2020 (Phase 1) have made strong progress: the promotion of ASEAN asset classes (Social Bond Standards, Green Bonds Standards, Sustainability Bond Standards) with more than USD 7 billion (GBP 5.5 billion) labelled issuances under these asset classes; improved regional market infrastructure and connectivity with the ASEAN Collective Investment Scheme (ACIS) and the ASEAN Exchange, and information challenge for investors to promote intra-ASEAN trading. Based on the impacts and learnings from Phase 1, ACMF Action Plan 2021-2025 (Phase 2) was developed to continue the efforts.

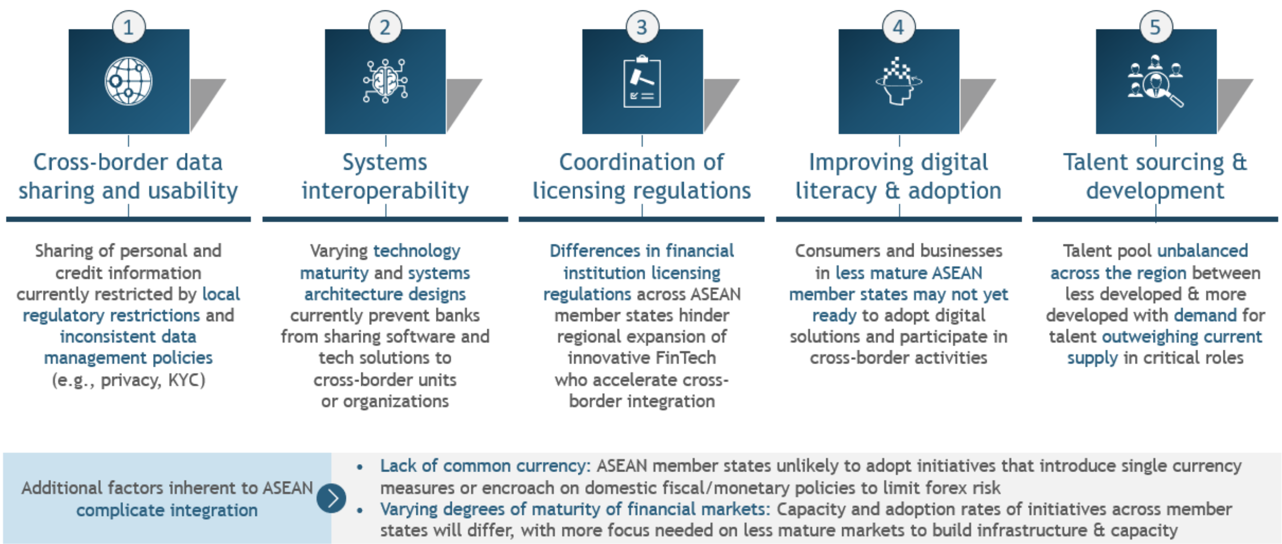
- **Payment and Settlement Systems:** There have been accelerated efforts in ASEAN to drive integration of payments across the region. Standardised 'national QR' systems for e- payments have been implemented and integrated on a bi-lateral basis to support cross border transactions. Since 2021, there has been 10 linkages launched among Singapore, Thailand, Malaysia, Indonesia, Philippines, Laos and Vietnam. Three additional linkages are underway, with MOU signed between Malaysia and Philippines, Indonesia and Laos. ASEAN Member States also made efforts to move towards ISO 20022 to standardise payment format required for interoperability, with reported completion in nine countries for retail payment systems and in seven countries for large-value payment systems.

Additional details on ASEAN's achievements in financial services integration can be found in Annex 6.1.

Next: Accelerating Financial Services Integration

While progress has been made towards integrating financial markets in ASEAN, there remains scope for further advancement. The region faces five areas of fundamental challenges hindering the speed of financial integration that are common across various financial sub-sectors. The diagram below describes the five challenges, each of which will be discussed in more detail alongside their respective recommendations later in this section.

***Figure 4:** Five sector-agnostic challenges hindering overall ASEAN financial services integration*



Source: Industry stakeholder interviews, BCG Analysis

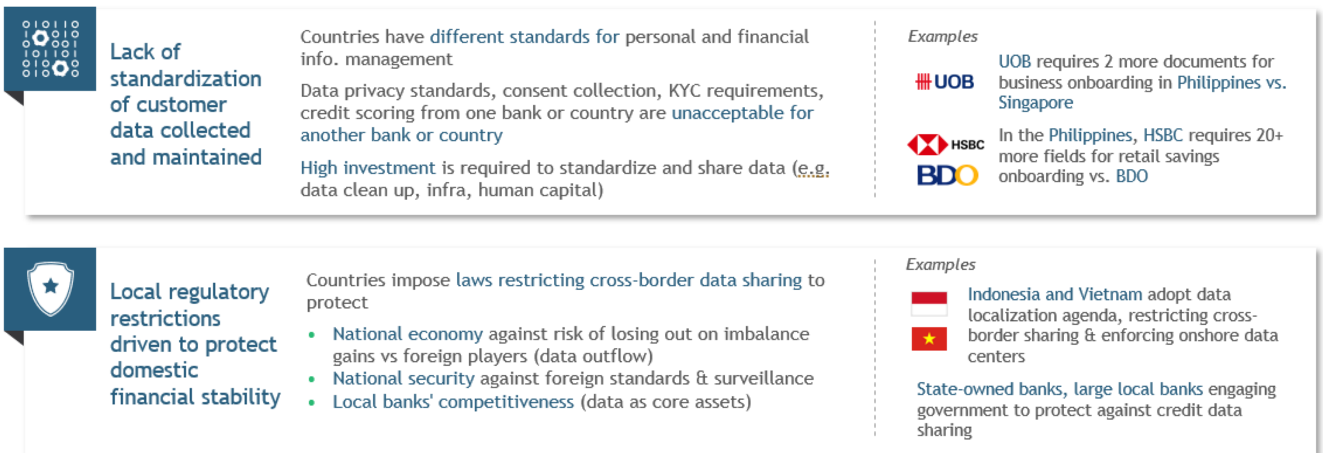
These challenges, when viewed through an action-oriented lens, are also the five catalytic enablers to overcome the challenges and unlock financial services integration across the financial services sector.

These enablers act as key drivers or catalysts that enhance overall financial connectivity and efficiency. When these challenges are addressed effectively, they can stimulate broader changes and improvements across the financial landscape.

For each enabler, the report elaborates on the potential it can unlock for regional financial integration. 19 enabler-level initiatives for ASEAN have been identified in support of these catalytic enablers. These initiatives consider a mix of roundtables, standard alignments, regional sandboxes, and resources/tools for businesses looking to enter the region. (Details of each initiative can be found in Annex 6.2).

<u>Cross-border Data Sharing and Usability</u>

What are the challenges?



Source: Industry stakeholder interviews, Company websites

Why is it important?

Enabling cross-border data sharing and improving data usability across the region, while maintaining oversight over the individual financial stability of each ASEAN member state, can unlock improved cross-border payments, trade and investments. Enabling financial institutions to access and exchange pertinent data swiftly can help expedite processes such as identity verification, transaction vetting, and compliance checks, greatly reducing the time and cost associated with these payments. For trade, the availability of reliable and comprehensive data across borders is key to identifying market trends, assessing risks, and making informed decisions.

What can be done?

1. Regular forums where ASEAN Member States regulators can dialogue with industry players, and vice versa, to determine priority use cases and consequent protocols for cross-border data sharing
2. Map commonalities and differences of data privacy regulations across ASEAN Member States, and build on top of the ASEAN Interoperable Data Framework (IDF)
3. An online knowledge repository containing resources to guide financial services players in operationalising data sharing as aligned by common standards in the region
4. A regional sandbox overseen by ASEAN Member States regulators and participated by key regional players, starting with two to three member states

Systems Interoperability

What are the challenges?

Source: Industry stakeholder interviews, The Economist Digital Transformation in SEA survey, Press releases

Why is it important?

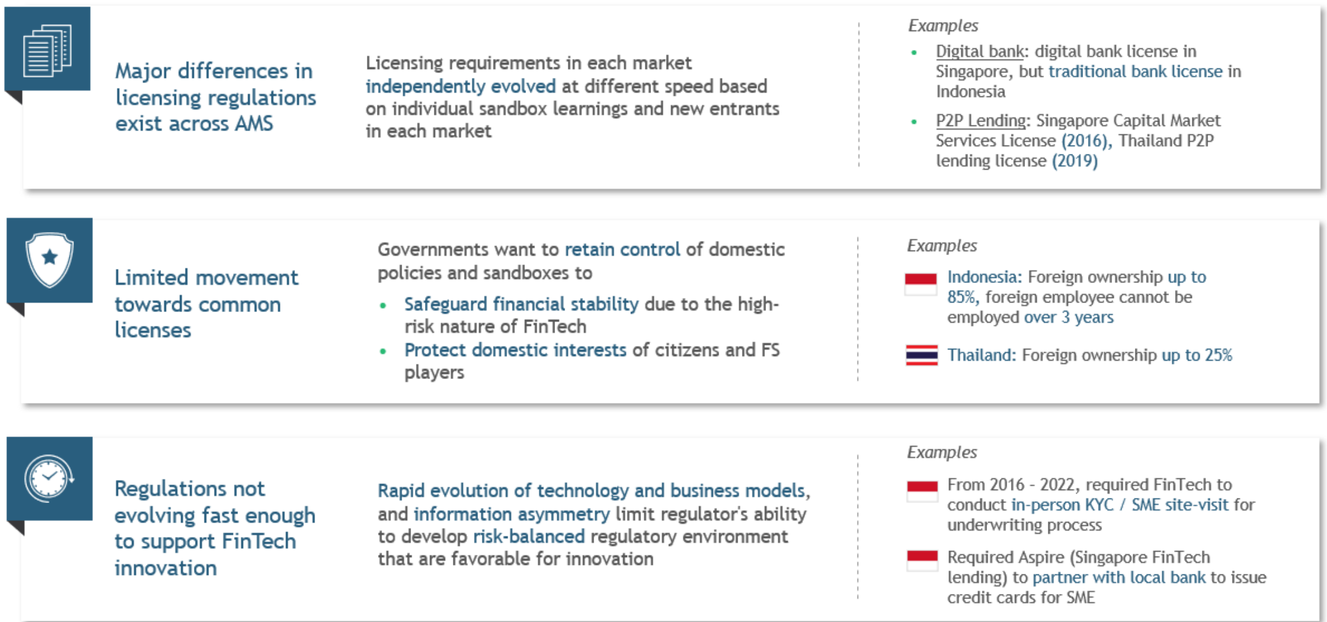
Supporting systems interoperability across the region can unlock improved financial integration. Financial transactions can be conducted more smoothly and efficiently across borders. It is also a key factor in facilitating the sharing of financial data and resources, crucial for risk management and regulatory compliance. In recent years, there has been a move within the industry towards open banking, which champions the interoperability of banking systems. For example, Open Banking Excellence, a UK-based global community of open banking pioneers, has been actively promoting a common framework for data sharing and communication to create a unified financial market that is customer-centric, competitive, and innovative.

What can be done?

5. A formal forum where ASEAN Member States regulators can dialogue with industry players, and vice versa, to determine priority use cases for open banking
6. Determine ASEAN-wide standards for open banking for priority use cases
7. An online platform that provides access to capability-building material and consultative experts to boost in-house capabilities of industry players on open banking implementation
8. A repository of FinTech service providers, ASEAN and non-ASEAN, to help industry players looking to start its open banking journey find technical providers with right capabilities
9. A regional investment platform that matches industry players and funders to bridge cost gaps for the development of open banking digital solutions

Coordination of Licensing Regulations

What are the challenges?



Source: Industry stakeholder interviews, Country's financial services regulatory bodies

Why is it important?

Difficulties in navigating varying licensing regulations across ASEAN Member States slow down regional expansion and integration efforts, especially for emerging FinTech innovations. There are many global and local FinTech players with innovations that promote integration and cross-border activities, such as Revolut (digital banking), Wise (international money transfers) and Aspire (lending). Many of them have established presence in several ASEAN countries but are facing difficulties in expanding further due to licensing complexities. As such, a movement towards coordination of licensing regulations can accelerate innovation for technology companies.

What can be done?

10. Regular forums for regulators (both ASEAN Member States & international) and the private sector to share learnings from policy evolution for FinTech across different jurisdictions around the world
11. A compendium of existing licensing requirements and processes across ASEAN Member States; can serve as a foundational tool for future streamlining of licensing application
12. Negotiations for a common licensing application dossier for FinTechs
13. Facilitate cross-country application into national sandboxes

Improving Digital Literacy and Adoption

What are the challenges?

Challenge	Description	Examples
Digital adoption across markets varies significantly	Financial players need to adapt digital solutions to account for each country's starting point for digital & financial maturity & regs.	ASEAN internet connection penetration: • 53% of rural penetration vs. • 72% of urban penetration
Heavy investments needed to drive digital & financial literacy jointly	Financial service players often need to invest in research & assessment, education and awareness and training and support to understand each country's digital landscape	Financial literacy: Cambodia: 18%; Vietnam: 24%; Philippines: 25%
Digital solutions in markets not fully refined	Especially in emerging markets where digital capabilities are nascent, digital solutions create worse experiences for customers	Made or received digital payments in the past year: Lao PDR: 20%; Vietnam: 23%; Cambodia: 24%

Source: Asia Foundation, Digital Economy.gov.kh, BSP.gov.ph, OJK.go.id, S&P Global FinLit Survey, World Bank

Why is it important?

Varied levels of digital adoption across the region hinders integration progress as players' operational efficiency is limited. Targeted investments and concerted efforts to improve digital literacy and encourage the adoption of financial products are essential. By enhancing digital proficiency in ASEAN, more individuals and businesses can participate effectively in the digital economy. This participation is crucial for widening the reach of financial services, ensuring that a larger segment of the population benefits from financial integration. Moreover, with increased digital adoption, financial institutions can operate more efficiently, offer innovative services, and better cater to the needs of a diverse customer base.

What can be done?

14. Facilitate collaborative roundtable discussions between ASEAN Member States governments and the private sector to support initiatives aligned with national roadmaps
15. Develop a guidebook for new financial players to navigate the ASEAN Digital Financial Services Landscape

Talent Sourcing and Development

What are the challenges?

Challenge	Description	Examples
Talent pool is unbalanced across the region	Disproportionately more difficult to source talent needed to support growth of sub-sectors for less developed countries Challenging to source talent with local market specific knowledge to help firms navigate market i.e., KYC specialists	ASEAN less competitive vs. higher paying offices (i.e., SG, HK, US); competing firms are willing to spend large amounts to poach talent

Demand for talent outweigh current supply in critical roles	More digital talents to support increasing digitalization needs in mature markets Demand for risk & compliance specialists grow as industry grows to be more complex (shifting global supply chains, cyber-crime, complex reg. landscape)	*Examples* Digital product owners/managers, software engineers and developers reportedly insufficient across Singapore, Philippines, Thailand, Indonesia, Malaysia
Varying FS talent mobility requirements across AMS	Varying requirements across region for FS industry may require professionals to retrain and requalify before moving to another MS	*Examples* Thailand requires CFA level III or level 1 with exp. to be qualified fund manager; Philippines SEC requires at least 1 mutual fund manager pass CFA level 1

Source: Industry stakeholder interviews, Randstad, Robert Walters, Michael Page Indonesia, Roland Berger, OpenGov, DBS, Business Times, CFA Institute, Indonesia Financials Services Sector Master Plan 2021-2025

Why is it important?

Limited availability and the imbalanced spread of talent across ASEAN Member States slow down regional expansion and integration of financial services. Efforts to enhance education and training programs in financial technology and services can equip individuals in these less developed countries with the necessary skills and knowledge. This upskilling is essential for the growth and sophistication of the financial sector in these countries. Building a strong base of talent ensures that less developed countries can more effectively participate in and contribute to regional financial integration. In essence, investing in and prioritising the development of financial talent is key to enabling less developed ASEAN Member States to catch up and actively engage in the financial integration process.

What can be done?

16. Information gathering forums to collate input from industry and regulators on talent development needed in each country
17. Scholarship programs jointly sponsored through public-private partnerships
18. Work with existing working groups on ASEAN connectivity to facilitate structured industry commentary on needs relating to talent mobility specific to financial services sector
19. A compendium of consolidated visa requirements for technical jobs

Priority Financial Services Sub-sectors

ASEAN Member States have shared interests and needs for financial integration. Facilitating the flow of capital and investment across borders opens access to a broader pool of resources and opportunities, stimulating further economic growth. Well-integrated financial systems can simplify cross-border transactions and reduce transaction costs, improving the overall ease of doing business in the region and encouraging trade facilitation. Improved financial integration can promote the development of inclusive financial services, extending banking and payment solutions to underserved populations.

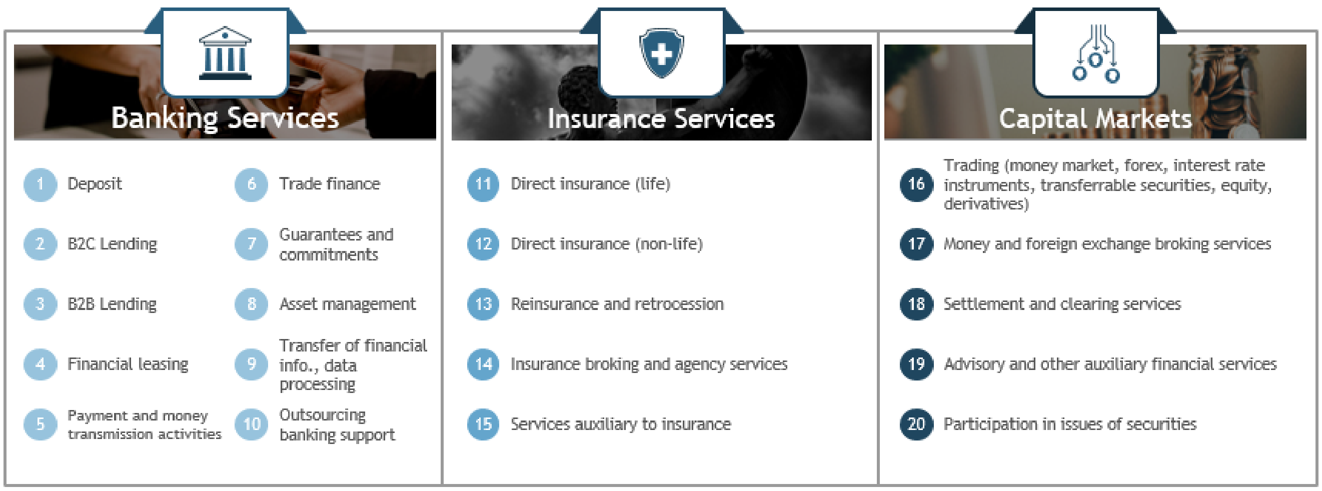
However, areas of focus for integration vary across ASEAN Member States given difference in national priorities. As such, there is an opportunity for the region to focus acceleration efforts on specific sub-sectors with high impact and/or strong alignment and look to activate ASEAN Member States that are prepared to mobilise along these areas.

This report looks across 20 financial services sub-sectors (Figure 5) and identifies areas where there is heightened potential for integration given today's financial services landscape. The assessment takes into consideration two dimensions (Figure 6):

i. **Integration feasibility,** including the likelihood of strategic convergence, the readiness of regulatory and legal frameworks and the sufficiency of infrastructure and capacity. (Detailed criteria can be found in Annex 6.3)

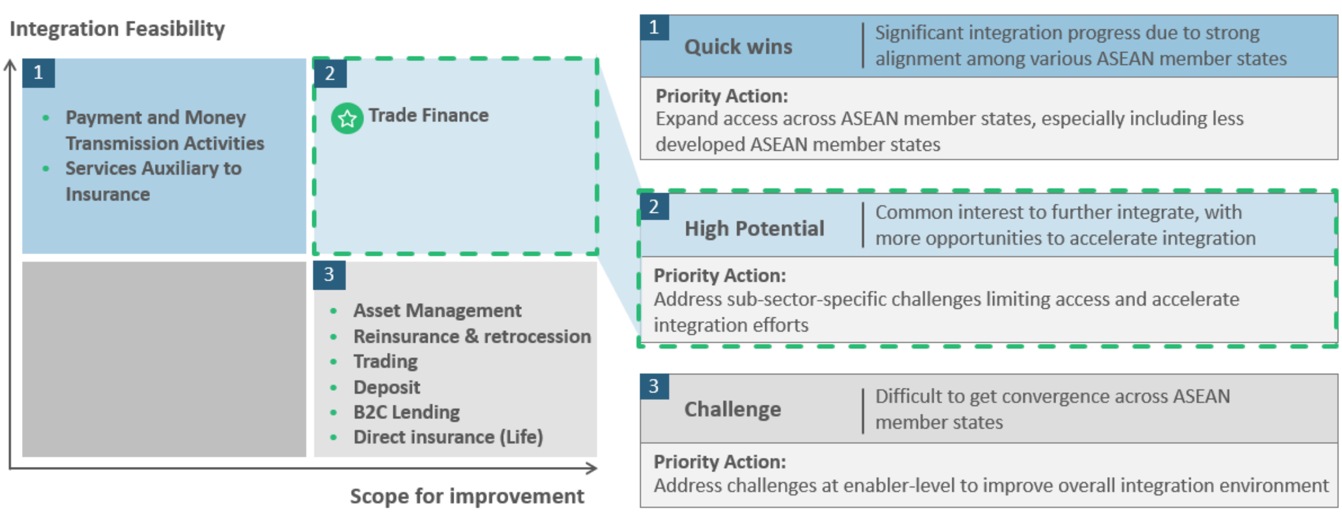
ii. **Scope for improvement,** considering the progress made among ASEAN Member States to date

Figure 5: *20 Financial services sub-sectors, as aligned with the ASEAN Framework Agreement on Services (AFAS)*



Source: Schedule of Commitments on Financial Services under the ASEAN Framework Agreement on Services

Figure 6: *Sub-sector prioritisation approach*



Source: Industry stakeholder interviews, BCG Analysis

Among the 20 financial services sub-sectors assessed, Trade Finance is identified to be a high potential sub-sector where more can be done. The strong convergence on the benefits of trade finance significantly bolsters the feasibility of integrating trade and supply chain within ASEAN. Given the high volume of ASEAN businesses engaged in exporting and importing, prioritising trade finance aligns strategically with the region's commercial dynamics. International standards for cross-border trade also establishes a foundation for best practices, but existing variances and ambiguities in trade finance practices among ASEAN Member States highlight an opportunity for further harmonisation. Lastly, regional banks with trade finance operations already possess advanced financial supply chain management capabilities, offering a solid foundation upon which to build a more interconnected and efficient regional economy.

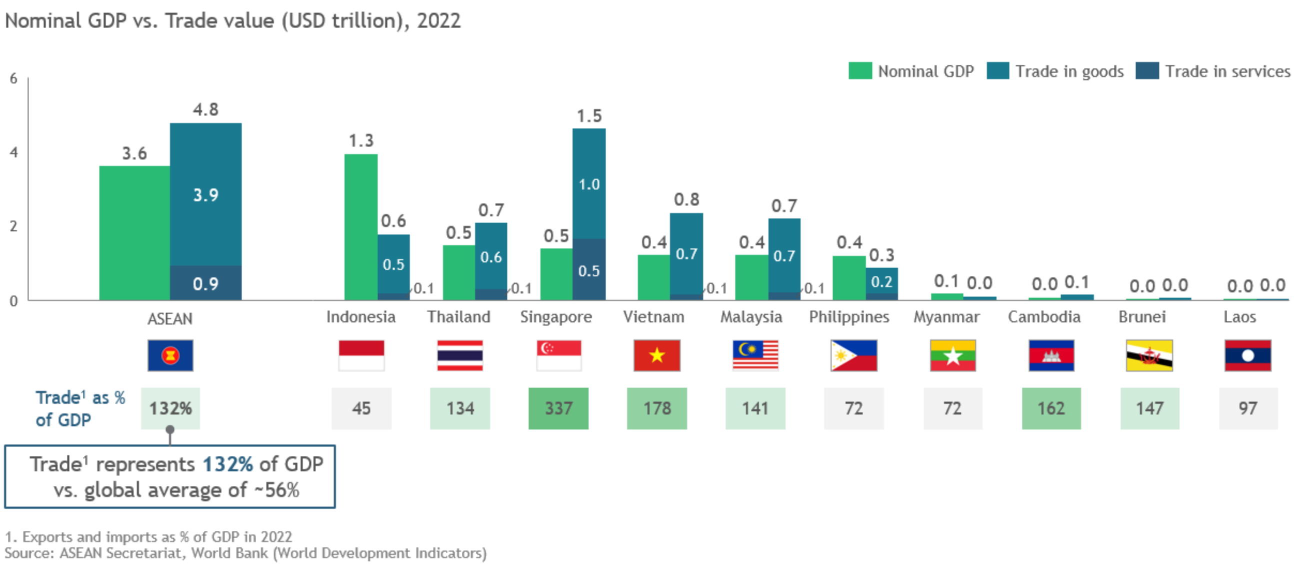
Given this context, the subsequent sections of this report focus on Trade Finance, (i) discussing the critical role of trade finance in sustaining and unlocking ASEAN's economic growth, (ii) validating key challenges causing the trade finance gap in the region, and (iii) sharing recommendations on how the identified key challenges can be addressed and where to potentially start.

2. Focus Sub-sector: Trade Finance

Importance of Trade Finance to ASEAN

The ASEAN economy is largely driven by trade, with the region's total trade value being 132% of its GDP. This is higher than the global average where total trade value is only 56% of GDP, which means that trade plays a relatively more critical role in ASEAN than other regions. More specifically among ASEAN Member States, Singapore, Vietnam, and Cambodia are notably highly reliant on international trade.

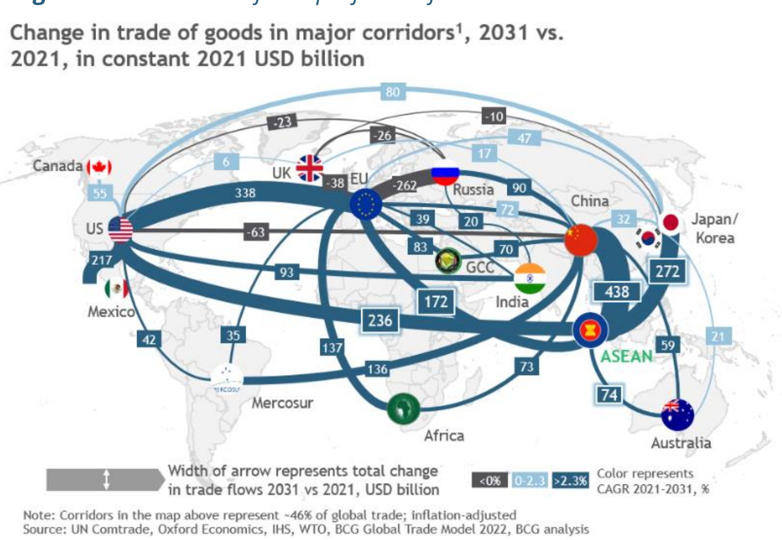
Figure 7: *ASEAN total trade value as percentage of GDP by country*



Intra-ASEAN trade comprises a notable portion of total ASEAN trade, accounting for 22% of total ASEAN trade in goods. Trade flows between Singapore and Malaysia, Thailand, Vietnam and Indonesia make up 74% of all intra-ASEAN trade.

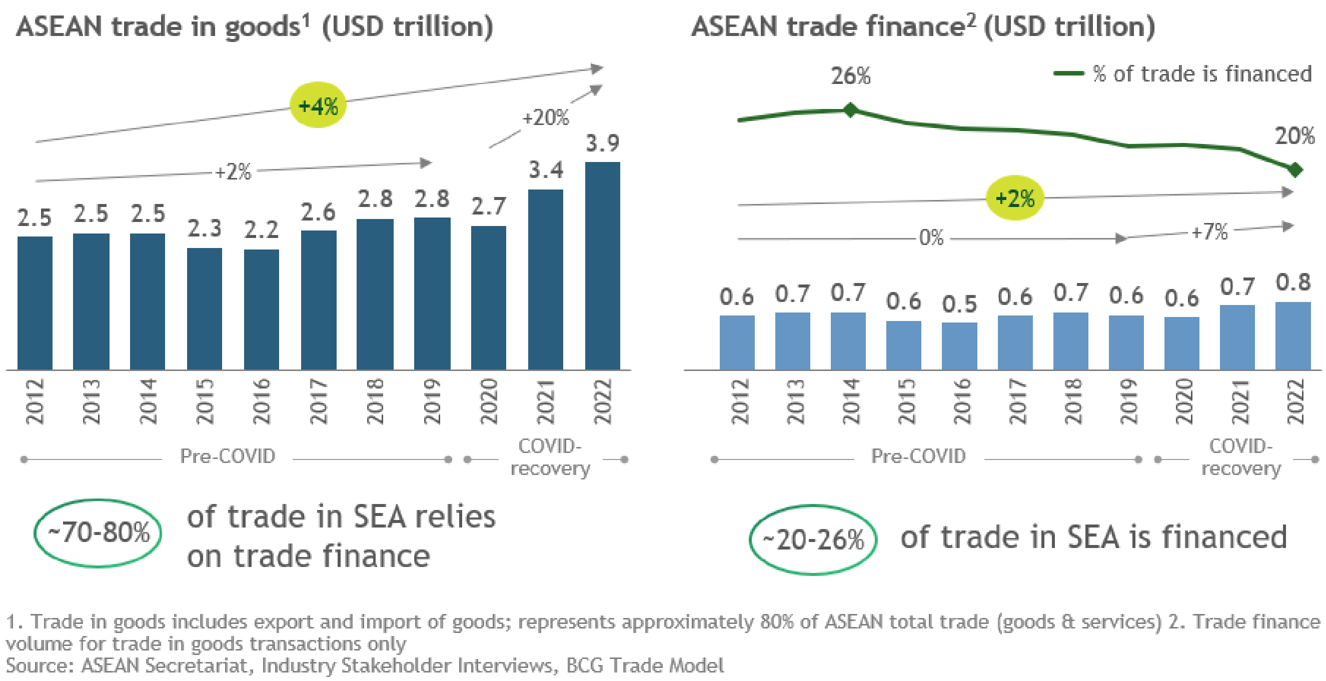
Looking ahead, extra-ASEAN trade is poised for expansion, with anticipated increases in trade with major partners such as China, the US, Japan, the EU and the UK (Figure 8). This growth is expected to be fueled by companies seeking to diversify their global supply chains and the increasing costs of manufacturing in current manufacturing hubs, thereby boosting the demand for finance to support these trade activities.

Figure 8: *Global trade flows projection for 2031*



Trade finance is critical to support sustainable ASEAN economic growth. 70-80% of ASEAN trade relies on trade finance to reduce the risk businesses shoulder and improve their liquidity. These financing arrangements help encourage more trade activity and increase manufacturing activities, illustrating the critical role trade finance plays in industry and trade overall.

***Figure 9:** Historical growth rate, ASEAN trade in goods vs. ASEAN trade finance*

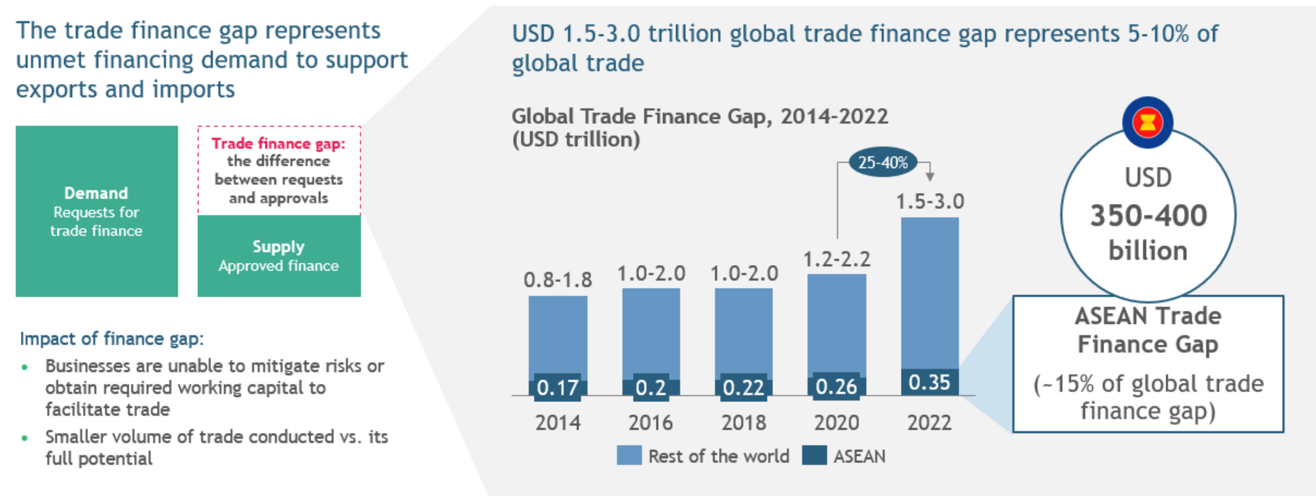


However, the demand for trade finance in ASEAN is not being met. Only 20-26% of ASEAN trade is financed in the last decade. In the last 10 years, ASEAN trade in goods has grown 4% annually, while trade finance has grown only 2% annually. The disproportionate growth is especially heightened post-COVID, where the region observed 20% annual growth in trade in goods, compared to only 7% annual growth in trade finance. Local banks are stepping in to increase finance supply for businesses in the region, now providing 65-80% of the supply. However, it is still insufficient to fulfill the growing trade finance demand.

As a result, there is currently a USD 350-400 billion (GBP 270-320 billion) trade finance gap that is limiting ASEAN's economic growth. The trade finance gap refers to the unmet financing demand to support importing and exporting activities. This is mainly the difference between the total requested and approved trade financing. Based on the ADB Trade Finance Gaps, Growth and Jobs Survey, the global trade finance gap has been continuously growing and is estimated to have reached USD 1.5 trillion (GBP 1.2 trillion) to USD 3 trillion (GBP 2.3 trillion) in 2022. USD 350 billion (GBP 270 billion) to USD 400 billion (GBP 320 billion) of this amount is estimated to be attributed to Southeast Asia[5]. If not bridged, businesses will not be able to mitigate risks and obtain the required working capital to facilitate trade. In turn, this limits the volume of trade that can be conducted and the economic value brought by international trade in ASEAN.

[5] Estimated based on ASEAN share of global trade in 2022

Figure 10: *Global and ASEAN trade finance gap*



Source: ADB, ICC, WTO, International Finance Corporation, BCG Analysis

Trade finance gap impacts companies across all sizes. Multinationals and large corporations account for over 50% of rejected trade finance globally. In ASEAN, banks also reported that they have been rejecting finance from large corporations given the large value tied to transactions and the rising country risks and fraud risks in the region. SMEs, who may not have a robust financial profile, are also unable to access sufficient finance. Globally, SMEs account for only 38% of trade finance applications, but comprises of 45% of total rejections. This gap is expected to be much wider in ASEAN where SMEs make up the majority of the ASEAN economy. ASEAN has over 70 million SMEs that contribute to 45% of its GDP and 85% of total employment.

Opportunity to Unlock USD 85-105 Billion Economic Value for ASEAN

Bridging 10-20% of the trade finance gap[6] can unlock USD 85-105 billion (GBP 70-80 Billion) in trade value uplift[7] and create 6 million jobs in trade-related industries, with more than one-third of the estimated jobs attributed to women[8]. Industry stakeholders believe that ASEAN, with the right interventions to improve the financial environment, can bridge at least 10-20% of the total trade finance gap. The potential is particularly pronounced in the developing markets with high trade reliance and readiness to adopt initiatives aimed at addressing the gap.

To unlock this opportunity, each stakeholder in the financial ecosystem has a key role to play:

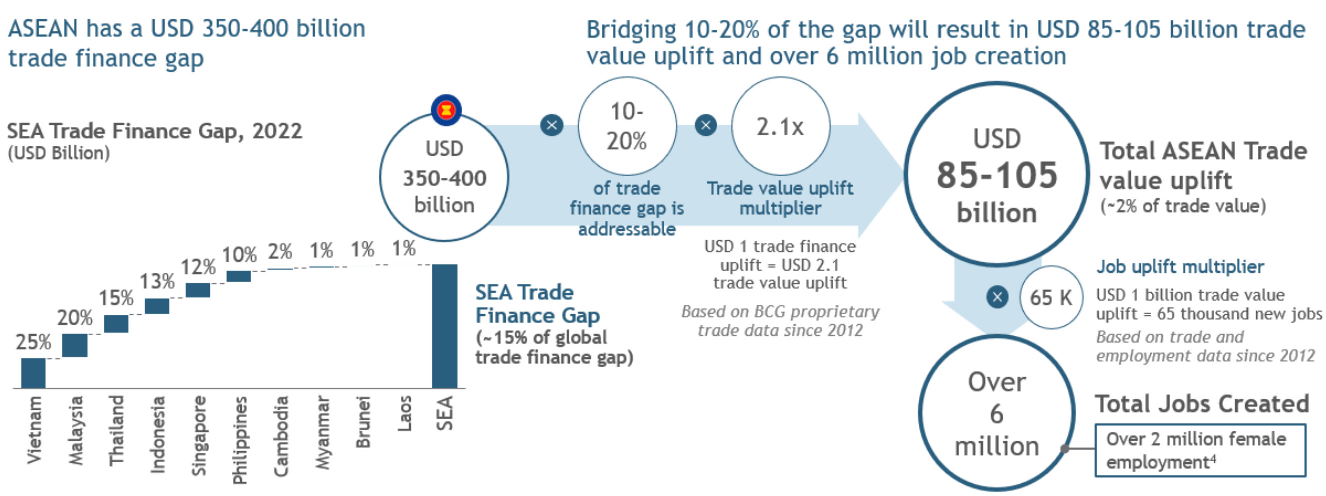
ASEAN financial regulators play a significant role in addressing challenges to trade finance. Each ASEAN member state regulators' outlook and approach on risk management, cross-border collaboration and innovation and development significantly shape the broader regional environment for Trade Finance, enabling financial institutions and businesses to maximise outcomes.

[6] Percentage of trade finance gap addressable calculated on a per-country basis, based on readiness to adopt solutions (incl. business & government investment in innovation & technology, FinTech ratings, government effectiveness index) and country incentives to address gap (trade as % of GDP)
[7] Assume 90% of trade finance uplift results in trade value uplift; estimated based on BCG propriety trade data since 2012
[8] Estimated on a per-country basis based on 10-year historical % women employment in select Industry and Services economic activities (e.g. Industry – Manufacturing, Retail/Wholesale Trade, Services - Construction, Transportation and Storage, Financial and Insurance activities)

Financial institutions, as major players in the ecosystem, have a crucial role in facilitating access to trade finance. By offering diverse and flexible financing options, these institutions can cater to the varying needs of businesses, particularly SMEs, which often face hurdles in securing financing. Their commitment to adopting innovative technologies and practices, with the support of regulators to enable these practices, can also streamline processes, reduce costs, and mitigate risks associated with trade finance.

Businesses themselves, particularly exporters and importers, are central to this effort. Businesses need to be supported by policies to enable them to maintain robust financial practices and transparency. This enablement will make them more attractive to financiers, easing the process of obtaining trade finance.

Figure 11: *Estimated economic impact from addressing trade finance gap in ASEAN*



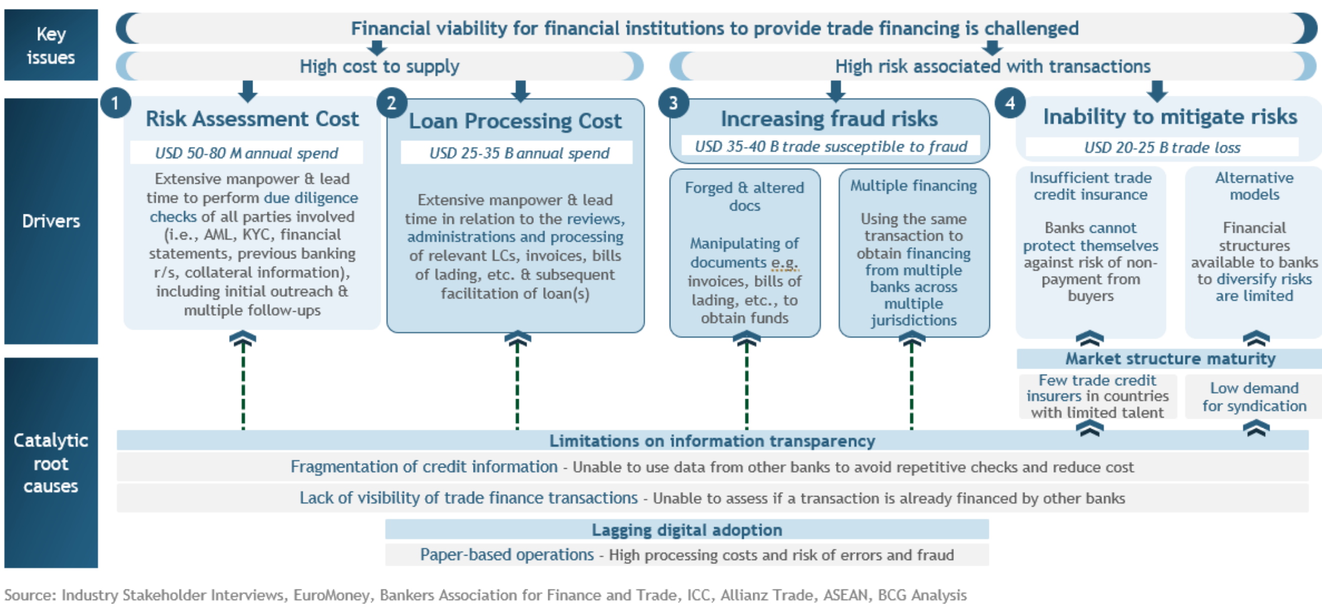
Source: ADB, ICC, WTO, UNCTAD, ASEAN, Cisco Digital Readiness Index, World Bank, Industry Stakeholder Interviews, BCG Analysis

3. Addressing Trade Finance Challenges in ASEAN

Key Challenges Driving the Trade Finance Gap

Making trade finance more financially viable for financial institutions is key to bridging the trade finance gap. Financial institutions in the region have the means to provide trade financing. However, they are challenged by the financial viability of providing financing. High costs to supply and high risks associated with transactions are key levers by which financial institutions assess the viability of financing.

Figure 12: *Key challenges driving trade finance gap in ASEAN*



Four key drivers influence these levers:

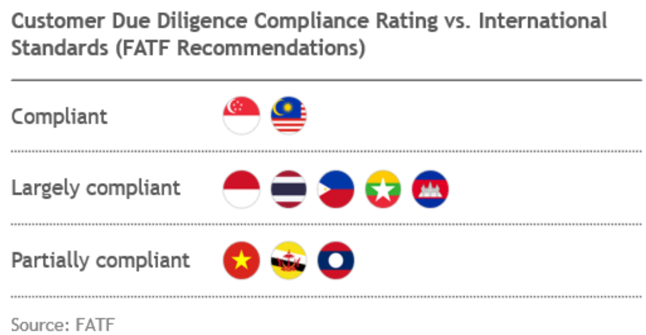
1. High risk assessment costs: <u>Annual spend on risk, compliance, sanctions and anti-money laundering checks in large trade finance banks in SEA is USD 50-80 million (GBP 40-63 billion) annually[9].</u>

The extensive due diligence required for trade transactions is made more challenging by restrictions on information sharing. Financial institutions are required to conduct extensive due diligence on all parties involved in a trade finance transaction. Some examples of documents banks need to procure or prepare include: (i) Know Your Customer (KYC) which includes the legal incorporation and real identities of companies and individuals involved respectfully, (ii) anti-money laundering (AML) / fraud records from national and international registers, credit bureaus, and official sanction lists, (iii) source and history of funds, and (iv) each party's financial capability to fulfill their obligations in the agreement. These are crucial in reducing non-performance risk from both buyers and sellers, reducing AML/fraud risk therefore protecting the bank's reputation, and ensuring regulatory compliance. Unfortunately, while crucial, conducting due diligence takes significant time and manpower, therefore driving up costs to supply trade finance.

[9] Estimated based on the number of large trade finance banks in ASEAN and the average spend per large trade finance bank

Costs are driven up further by data-sharing restrictions between companies and countries. For instance, Indonesia and Vietnam have imposed data sovereignty requirements that restrict cross-border sharing and enforce onshore data centres. The varying regulatory maturity across countries also limits the usability of shared information. To compare regulatory standards, the recommendations[10] of the Finance Action Task Force (FATF) are used globally for AML and counter-terrorist financing (CFT) standards. Due diligence done in a country that is only partially FATF-compliant may not be acceptable in a fully FATF-compliant country. As a result of these restrictions, banks are pushed to repeat the due diligence process for every transaction.

Figure 13: *ASEAN Member States customer due diligence compliance rating*



2. High loan processing costs: Reviews, administration, and paper-based processing of financing leads to annual losses of USD 25-35 billion (GBP 20-30 billion) for banks[11].

Loan processing is document-heavy and highly manual, with majority of the process still being paper-dominant. Banks estimate that 30% of their time is spent on processing documents. Loan processing remains highly manual and therefore costly process for banks due to:

I. **Lack of standardisation for documents:** Documents such as the bills of lading are not standardised making border processes complex
II. **Need for follow-ups:** Banks need substantial in-person back-office staffing to manage the manual processing and to follow up on the documentation needed
III. **Regulations lagging behind digitalisation:** There are still limitations of laws that recognise e-signatures in ASEAN. As a result, countries are still heavily reliant on the verification of "wet" signatures on physical documents

As of 2022, only 2.4% of bills of lading globally are electronic. Documents such as letters of credit, carrier and authority certificates, import/export licences, vessel-sharing agreements, and more remain paper-based. Overall, a singular transaction may involve more than a hundred pages of documents that need to be verified and processed, which is costly and time-consuming considering that ~30 documents for one transaction can take two to three months to produce and circulate. As of 2021, banks spend ~USD 1.1 billion (GBP ~0.8 billion) annually processing paper bills of lading. This also means that processing costs tend to be larger in less developed countries where a paperless collection of payment is not yet fully implemented.

[10] FATF Recommendation 10: Customer Due Diligence as of Aug 2023

[11] Estimated based on the global annual loss to manual activities of trade finance operations of USD 150 billion (GBP 120 billion), assume 20% of the loss is from ASEAN based on ASEAN share of global trade and ASEAN relative maturity in adoption paperless trade to global peers

3. Increasing fraud risk: USD 35-40 billion (GBP 20-35 billion) _of ASEAN's trade finance value is estimated to be susceptible to fraud[12].

Trade finance fraud is prevalent across markets, regardless of maturity. Trade finance fraud is a common issue globally, with USD 50 billion (GBP 40 billion) of the total global trade financing market being susceptible to fraud, with much more likely left undetected.

While emerging markets are perceived as more vulnerable to fraud due to higher levels of inherent anti-money laundering and terrorist financing risk, mature markets also face prominent fraud cases given their higher trade volumes and ability to detect fraud. For instance, Singapore banks have lost over USD 9 billion (GBP 7 billion) from 2016 to 2020 from trade finance defaults linked to fraud.

Fraudsters take advantage of limited information transparency between financial institutions and countries to obtain illicit financial gain. Recent fraud cases in the region have exhibited that banks in the region do not have the visibility to identify if transactions have been financed by other banks. Thus, companies can use the same trade invoice to obtain financing from multiple banks without the intention or means to repay the borrowed amount. Knowing that hidden relationships between companies are hard to reconcile between entities in multiple jurisdictions, companies can also collude to obtain finance for goods that are misvalued, of lesser quality, or nonexistent. Increased transparency and quality on transactional data and business information can help significantly reduce fraud instances in the region.

Figure 14: *Select information needed to detect various types of trade finance fraud*

Involvement of non-bank parties

Information types needed to prevent fraud	Duplicate financing Company uses the same trade document to obtain financing from multiple banks, results in multiple loans issued against the same collateral	Collusion Company or individuals colludes with insiders at buyer or seller side to process fraudulent trade transactions	Forged/altered docs Company uses altered documents to obtain financing for goods that don't exist/lesser value/different from documents	Under/over invoicing Company misrepresents value of goods or services to evade taxes or launder money
Transactional Data[1]	✓		✓	✓
Company identity[2]		✓		✓
Due Diligence Data[3]		✓	✓	✓
Risk Assessment Information[4]			✓	✓

1. Invoice details, shipping documents, payment terms; 2. Business profiles, ownership and management structure; 3. KYC and AML checks; 4. Credit risk data, country/sector-specific risks
Source: BCG Analysis

The prevalence of trade finance fraud causes financial institutions to lower their risk appetite to supply financing. As an example, in response to a long string of fraud cases in 2020, ABS-AMRO exited the trade finance space, leaving a USD 21 billion (GBP 15 billion) trade finance gap globally[13]. Similarly, the collapse of Greensill Capital in 2021, a UK-based financial services company, amidst concerns over its financial

[12] Estimated that at least 1% of ASEAN trade in goods is susceptible to fraud
[13] Sheppard, D., et al. (2020, August 14). "European banks lose appetite for commodity trade financing." *Financial Times*, https://www.ft.com/content/a61cb821-edaf-41b5-b7dd-f667f3eab81b

practices and exposure to high-risk clients, further illustrates the vulnerabilities within the trade finance sector.[14] Therefore, if left unmitigated, trade finance fraud risk will only continue to widen the trade finance gap.

4. Inability to mitigate risk: An estimated USD 20-25 billion (GBP 15-20 billion) in trade loss due to non-insurance of trade finance transactions[15].

Over USD 2.6 trillion (GBP 2.1 trillion) worth of trade value in ASEAN remains uninsured. Credit insurance is one of the most common mechanisms used by financial institutions to mitigate trade finance risk. Suppliers are insured against non-payment of trade receivables with insurers, indemnifying them against loss in the event of insolvency or protracted default. Financial institutions are unable to mitigate risks with the limited availability of trade credit insurance in the region.

Figure 15: *Trade credit insurance players in ASEAN*

Source: Industry stakeholder interviews

The availability of credit insurance should increase trade supply since insured financial institutions are more enabled to extend financing to riskier businesses. Insurance policies can act as security to access better financing terms. Unfortunately, with less than 15 trade insurers present across the region, there is a lack of capacity to underwrite transactions in ASEAN. A larger portion of uninsured transactions happen in Laos and Brunei where there is limited to minimal insurer presence.

The low supply of insurers is mainly driven by two key issues:

I. **Need for market-specific capabilities to perform risk assessments:** Market-specific capabilities and knowledge are needed to assess risk profiles. This is to navigate the regulation and cultural differences across ASEAN countries, especially those that have more fragmented credit information and are therefore perceived to be riskier and less commercially viable for insurers.

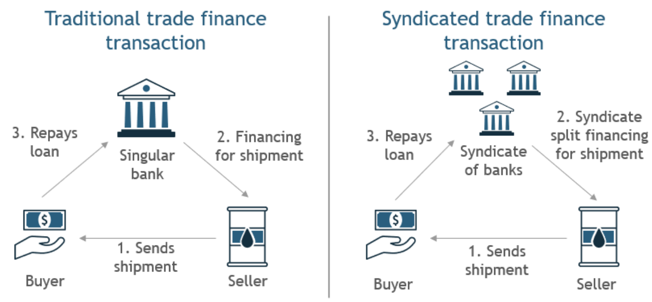
II. **Lowered demand due to costly premiums:** Premiums cost up to 60-70% of a transaction's gross margins. Adding this on top of the already high cost of systems and fraud mitigation, such as due diligence and paper processing, make insurance only commercially viable for larger transactions. Once again, this makes trade finance less accessible for SMEs.

[14] Nelson, E., et al. (2021, March 28). " The Swift Collapse of a Company Built on Debt." *The New York Times*, https://www.nytimes.com/2021/03/28/business/greensill-capital-collapse.html

[15] Estimated based on the value of trade in goods in ASEAN, the % of trade in goods that rely on trade finance and assumes penetration of insurance coverage based on global shipment insurance penetration of 13.16% and ~90% of trade will continue without insurance

Similarly, alternative risk mitigation models, although available, are only viable for very large transactions. Apart from credit insurance, financial institutions can also mitigate trade finance risk by syndicating trade finance transactions (Figure 16). This means banks split transactions with other banks, therefore reducing their risk exposure as the risk is likewise distributed amongst the multiple lenders. This arrangement should help increase trade supply since this allows banks to provide financing to more borrowers given the lower risk exposure, and borrowers to access larger loan amounts compared to when they take a loan from a single lender.

Figure 16: *Traditional trade finance transaction vs. Syndicated trade finance transaction*



Syndicated trade finance transactions are not widely adopted in the region for the following reasons:

I. **Syndicated loans are too costly for small transactions:** Banks prefer to conduct their own assessments to have sufficient assurance of a borrower's risk profile. As a result, they end up performing multiple and repeated risk assessment checks with the other participating financial institutions, leading to higher costs. This further limits the financial institutions' margins and would therefore not be commercially viable for small loan transactions.

II. **Financial institutions risk losing customers to competitors:** Trade finance transactions in the region typically have very short tenors of around 180 days and tend to be consistent and cyclical based on the borrowers' financing activities and needs. Financial providers fear that inviting competitors to co-finance would allow the latter to poach their clients for the next trade finance transaction.

Addressing Underlying Root Causes

Addressing limited information transparency and lagging digital adoption will have the greatest impact on the trade finance gap. As described in the previous section, high loan processing costs and increasing fraud risks are the two largest issues responsible for over USD 60-75 billion (GBP 45-60 billion) of annual losses in ASEAN, materially undermining banks' financial viability and appetite to finance transactions. Both issues stem from two systematic root causes:

I. **Limitations on information transparency between banks and countries** such as transactional data, company identification and credit information

II. **Lagging digital adoption** among banks and ecosystem stakeholders to transition away from paper-based operations

Addressing these root causes will unlock systematic benefits for all stakeholders involved by reducing redundant investments and inefficiencies for fraudsters to take advantage of.

To address these root causes at scale, a coordinated effort is needed across both national and regional levels. Efforts by individual banks to digitalise processes and combat fraud, while valuable, fall short of addressing these challenges systemically. The effectiveness of such initiatives is limited when banks act in isolation, leading to duplicated efforts and elevated costs, while the potential network benefits remain unrealised due to the disjointed adoption of systems with limited interoperability.

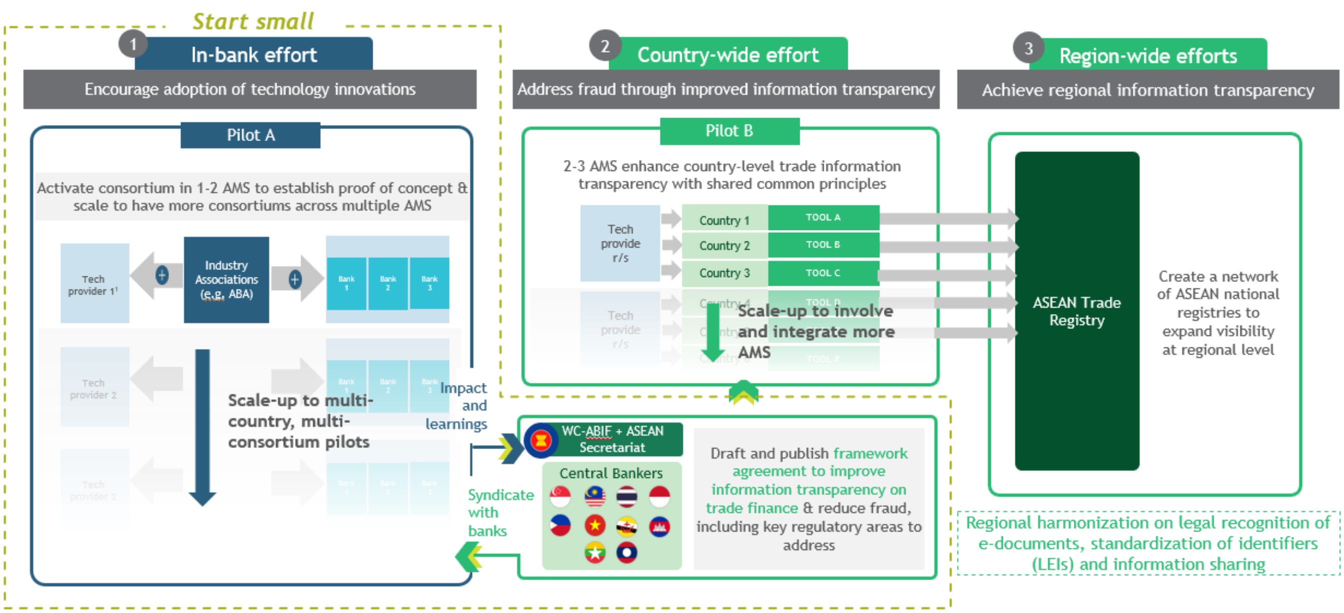
Regulators in the region play a significant role in facilitating this coordinated effort, in particular:

I. **Championing the use of digital technologies and create enabling environments** for banks to discover impactful technologies, test and deploy them in-bank in a quick and coordinated manner across the industry
II. **Improving in-country information transparency on trade-related data,** such as trade finance transactions from banks and company identity data from national company registries
III. **Deepening cross-border collaboration to scale regional impact** across ASEAN

4. Pathway to Impact: Recommendations for Trade Finance

ASEAN can drive a regional momentum towards reducing trade finance gap by adopting a three-prong, multi-level effort as illustrated in Figure 17. To digitise trade finance and increase information transparency, collaboration among private and public stakeholders is needed at in-bank, country and regional levels.

Figure 17: *Pathway to bridge ASEAN trade finance gap*



Source: BCG Analysis

To kickstart momentum for this pathway to impact, ASEAN can embrace a 'Think Big, Start Small' mindset, beginning with amplifying in-bank efforts and encouraging dialogue to pave way for country and regional level ambitions.

1. Amplifying In-Bank Efforts

Encouraging adoption of technology innovations among local and regional banks in ASEAN is a catalytic step towards bridging trade finance gap. Currently, there are numerous technology providers offering innovative tools, such as document digitisation platforms and fraud detection software. Many of them that have demonstrated early successes in automating process, reducing errors, and improving fraud detection, but the impact is contained due to redundant investments and limited interoperability between solutions among banks.

To amplify the impact of these technology adoptions, private-sector banks can form consortiums to coordinate testing and uptake of solutions, starting with one consortium consisting of a few banks in champion member state/s. This allows participating banks to share costs and risks, and benefit from a wider network of banks, corporates and SMEs operating on streamlined processes and systems. Notably, this effort can be spearheaded by private sector entities, such as bankers' associations, bringing in aggregators to scale quickly and drive a singular voice of industry.

2. Country-wide efforts

Beyond the efforts undertaken within individual banks, ASEAN Member States play a crucial role in promoting nationwide information transparency, a challenge that banks cannot fully tackle independently.

ASEAN Member States can engage in dialogue to explore the development or improvement of centralised information registries, tools that are instrumental in enabling the exchange of accurate and comprehensive trade-related data. These registries would empower financial institutions and technology providers to verify information more reliably and enhance fraud detection capabilities. Moreover, this transparency will reduce the overall country risk, making the country more attractive for trade and finance activities and increasing economic growth and stability.

3. Region-wide effort

To achieve regional information transparency, ASEAN Member States can develop a shared ambition to connect national registries based on ASEAN Member States readiness. ASEAN can support this endeavor by promoting cross-country knowledge exchange and dialogue aimed at standards harmonisation while recognising the diverse capabilities and sovereign rights of ASEAN Member States to ensure a balanced and inclusive path forward. Through such collaborative efforts, ASEAN can create a more interconnected and transparent trade environment across the region.

The following sections include additional details and key considerations for in-bank efforts and country-level recommendations.

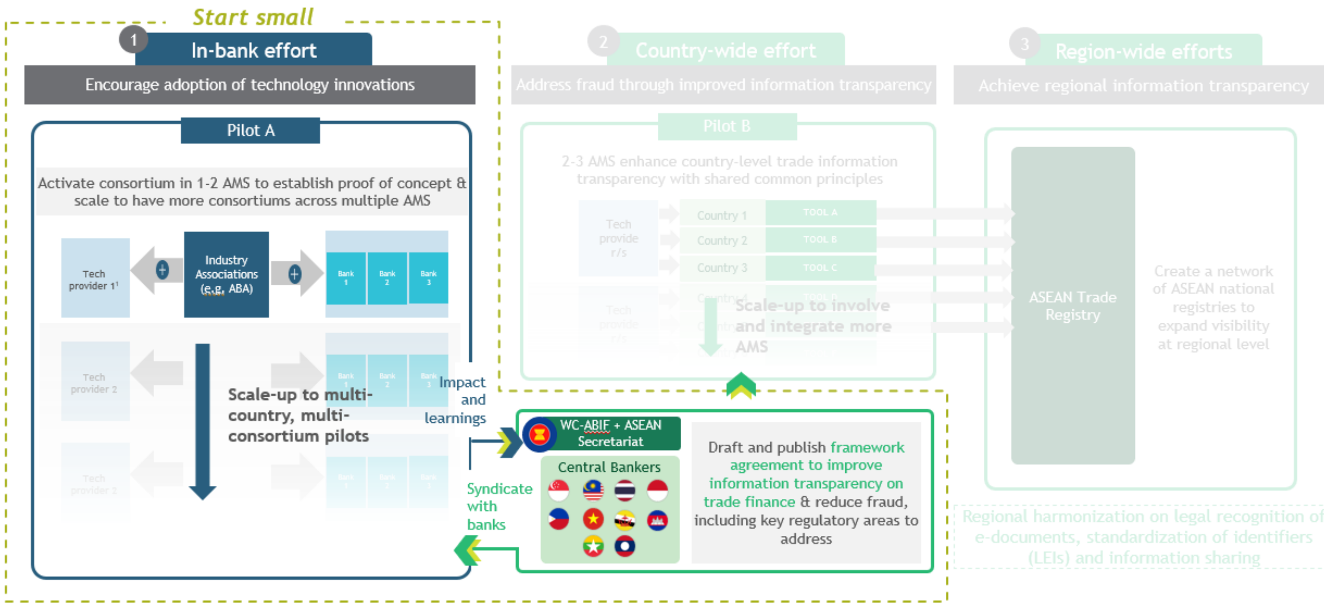
Amplifying In-Bank Efforts: Private-led Pilot Program

Local and regional banks in ASEAN have historically engaged with technology providers on a one-to-one basis, but they have found the approach to be costly and challenging. When banks operate in isolation, they must bear the full cost and effort in assessing the technology and securing regulatory approvals. This approach also leads to market interoperability issues, wherein banks adopt different platforms or solutions with limited interoperability between organisations. Thus, banks have expressed interest in taking a collaborative approach to adopt new technology solutions, drive a singular voice of the industry, and maximise the network benefits for the ecosystem.

Given the digital advancements in today's world, there are many technology providers with innovative tools to solve banks' challenges in trade finance. While many of the providers originate from the UK and the US, their solutions have shown success in helping banks digitise operations and improve fraud detection across global markets, including in Southeast Asia. Given the accessibility to these technologies today, banks and regulators in ASEAN can capitalise on this opportunity to unlock progress. A list of UK technology providers with relevant capabilities can be found at the end of this report.

Pilot Program Recommendations

Figure 18: Pathway to bridge ASEAN trade finance gap: amplifying In-bank efforts



Source: BCG Analysis

To accelerate the adoption of technologies, private-sector banks can lead a pilot program by forming consortiums to coordinate testing and uptake of solutions. A consortium can be self-organised among banks with similar pain points in trade finance operations and with technology provider/s with relevant solutions ready for deployment. This set up allows private sector companies to share costs and risks and unlock the network benefits of collective technology adoption. It will also allow them to have a unified voice of the industry to convey regulatory and policy support needed to maximise technology effectiveness. Private-sector conveners such as national bankers' associations can play a critical role in facilitating conversations between private-sector banks and technology providers to form consortiums based on shared priorities.

ASEAN member state regulators can encourage this effort by providing oversight and regulatory support to the consortiums, such as providing clarity on policies related to trade finance technology activities and approvals. Additionally, it is also important for regulators to leverage insights and learnings from the pilot program to inform regulatory enhancements critical to increasing technology effectiveness and market transparency, such as trade-related data standards and sharing policies.

There are two primary use cases for trade finance technology that can be prioritised for the pilot program:

I. **Documentary trade solutions:** Tools focusing on digitising and automating the creation, exchange, and verification of trade documents.
II. **Risk management & compliance:** Tools addressing risk assessment, compliance with international regulations, and fraud prevention in trade finance transactions.

These use cases aim to deliver benefits to both banks and countries, as they address the largest key drivers of ASEAN trade finance gap. For banks, digitising trade operations and reducing fraud risks allow them to save on operational costs and avoid potential losses from fraud. For ASEAN Member States, the use cases contribute to their efforts to build foundations for the digital economy and heighten security, thereby attracting more trade flows into the region.

Within these use cases, banks can choose to prioritise readily available solutions that can be deployed with minimal regulatory changes and inter-bank exchanges of sensitive information, allowing the pilot program to materialise within a shorter timeframe. For example, a list of UK technology providers with relevant capabilities can be found at the end of this report.

Further details on pilot program key features and implementation blueprint can be found in Annex 6.4 and 6.5 respectively.

Country-wide Effort: Centralised Information Registry

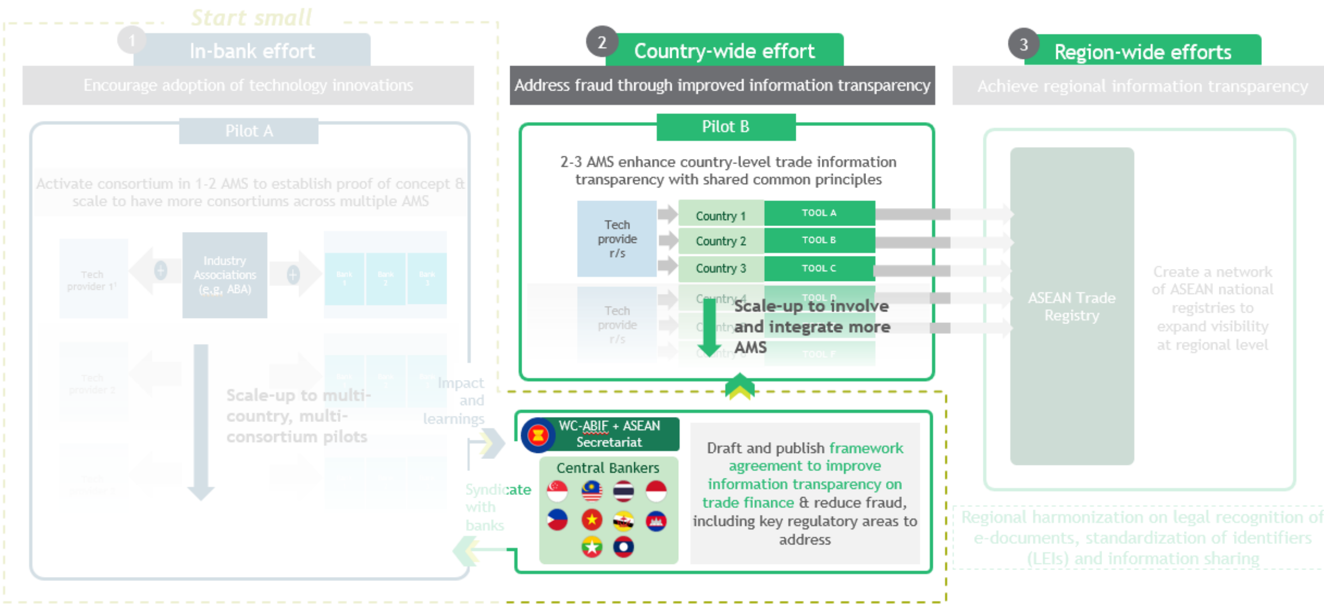
As highlighted in Chapter 3, limited information transparency between financial institutions and countries is a key root cause contributing to trade finance fraud in ASEAN. Recent incidents of fraud in the region underscore a systematic vulnerability: banks lack the means to determine whether other financial institutions have already financed specific transactions, leaving room for companies to conduct duplicate financing. The incidents also show that banks that fail to identify hidden relationships between trading parties across different jurisdictions or verify the existence of goods can be targeted by collusion, providing financing for goods that may be overvalued, substandard, or entirely fictitious. Enhancing the transparency and accuracy of transactional data and business information is essential for significantly mitigating the risk of fraud in this sector.

Driving ecosystem-level information transparency requires a national effort that individual banks alone cannot achieve. Given the multi-stakeholder and cross-border nature of trade finance transactions, data is scattered across banks, companies, and countries. Driving visibility across the siloed data pools necessitates not only the adoption of technological solutions but also the establishment of regulatory frameworks and inter-bank cooperation agreements. As such, a collaborative approach closely supported by regulators is crucial to address the challenge.

Centralised Information Registry Recommendations

ASEAN Member States can develop centralised information registries to promote national information transparency on trade-related data. These registries will serve as a comprehensive means to exchange information between banks and ecosystem stakeholders, allowing banks to cross-check company identity, trade information and documents against multiple external sources to verify transactions existence and authenticity, and detect fraud early. Depending on the types of data and technology connected to the registry, banks can perform advance fraud detection activities, such as flagging duplicate finance schemes using invoices financed by other banks or identify potential collusion through uncovering hidden shareholder relationships between the trading entities. This transparency will reduce fraud risk for the participating banks and the overall country risk, making the country more attractive for trade and finance activities.

Figure 19: *Pathway to bridge ASEAN trade finance gap: Country-wide effort*



Source: BCG Analysis

To achieve this, these registries can leverage existing technology solutions that provide real-time visibility while safeguarding the security and confidentiality of sensitive commercial data. Detecting duplicate financing, for example, requires a bank to cross-check transaction invoice against those held by other banks. However, to protect their competitive edge, banks are reluctant to expose such information to competing banks. Thus, national registries aimed to facilitate inter-bank sharing of transaction invoices can employ data protection methods to ensure the document is anonymised or tokenised and shared only on a need-to-know basis.

Within ASEAN, three countries have made progress in establishing a national trade finance registry, namely Singapore, Thailand and Malaysia. The three registries share a common goal of facilitating inter-bank visibility of trade finance transactions to enable the detection of duplicate financing.

Despite the common objective, the selection of technologies and collaboration models differ across countries. For example, while Singapore's Trade Finance Registry operates on a cloud-computing technology platform developed by a third-party provider, MonetaGo, Thailand and Malaysia operate their registries on a blockchain solution developed by their national financial infrastructure providers, ITMX and PayNet respectively. This divergence extends beyond technology choices to the initiative's structural design, including considerations such as ownership, funding sources and integration with other national infrastructures. Each design option offers unique advantages and drawbacks, which member states can decide based on the capabilities and readiness of the country and its stakeholders. Details on select national registries benchmark examples can be found in Annex 6.6.

While these differences showcase various design options countries can consider, they also raise concerns about systems interoperability between each country's registries. Thailand and Malaysia, for example, developed their registries to detect duplicate financing of invoices shared among local banks. However, both platforms still have limited visibility on transactions beyond their jurisdictions, and while there is ambition for future integration, the feasibility of integrating platforms in the future remains unclear.

Hence, as AMS individually start to set up their national registries, open dialogue amongst AMS is critical to ensure regional interoperability. This includes a regional discussion to adopt a shared vision to integrate with other national registries and ensure that the technology selected will allow for compatibility and integration with other platforms in the future. It also includes regulatory discussions to enhance the effectiveness of registries. Example regulatory considerations include:

- Enable access to banks' anonymised transaction data by clarifying or updating data protection and privacy laws
- Expand the pool of digital transaction data by encouraging legal recognition of e-transferrable records
- Enhance the integrity of company identification data by enhancing the national corporate registry
- Enable cross-border comparison of company identification data by adopting a standard company identification system

Further details on key considerations for the centralised information registry can be found in Annex 6.6.

5. Closing Thoughts

The ASEAN economy possesses enormous growth potential, ready to be unlocked by accelerating financial services integration and addressing the USD 350-400 billion (GBP 270-320 billion) trade finance gap. With today's technological advancements and widespread recognition of the pressing challenges, now is the time for ASEAN to supercharge its regional momentum toward digitising trade finance and increasing information transparency. By thinking big and starting small, progress can be driven at the bank and country levels, creating a solid foundation for regional-level cooperation. These actions will stimulate trade and economic growth, and bolster the regional banking sector's strength, thereby supporting the resilience of the ASEAN financial sector to become one of the largest economies in the world.

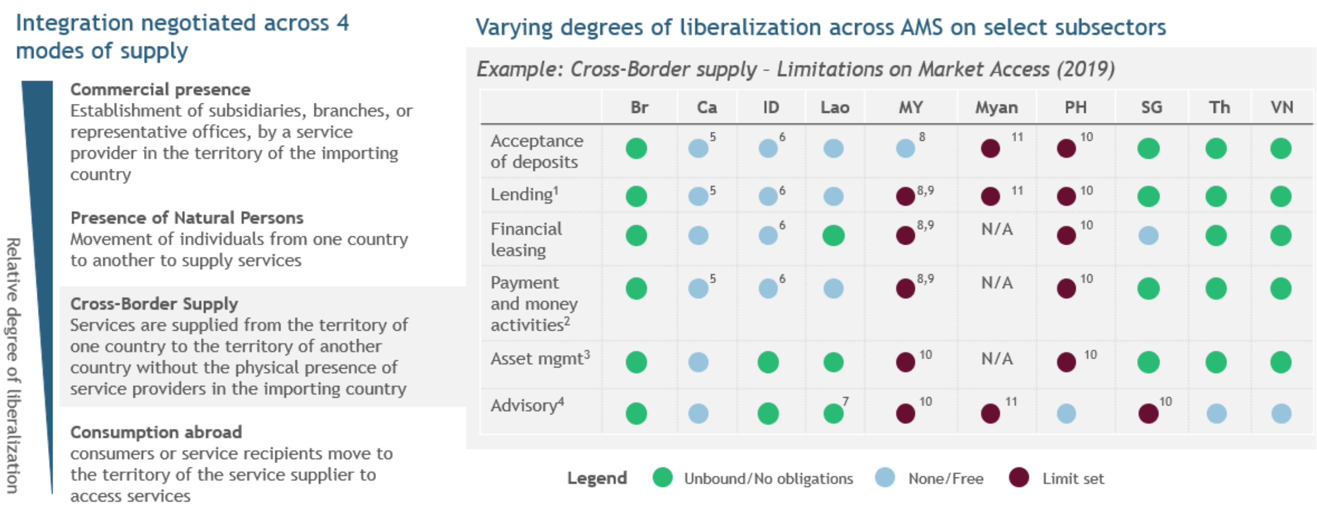
6. Annex

6.1. Select ASEAN achievements in Financial Integration

ASEAN has made progress to achieve regional financial integration along various areas of cooperation in the past decade, with regional initiatives having been agreed and partly implemented. Select key achievements on ASEAN Financial Integration are captured below:

Financial Services Liberalisation: ASEAN Member States have made commitments across various financial services sub-sectors over 8 rounds of negotiations since 1998

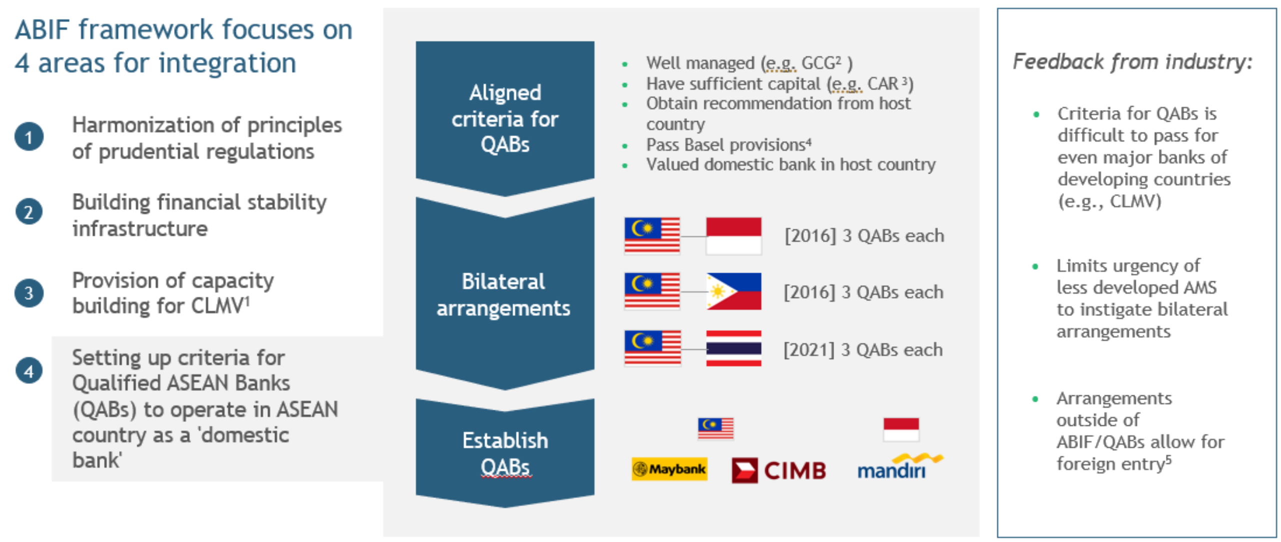
Figure 20: *ASEAN achievements in Financial Services Liberalisation*



1. Of all types, including consumer credit, mortgage credit, factoring and financing of commercial transaction; 2. All payment and money transmission service, including credit, charge and debit cards, traveler cheques and bankers drafts; 3. Such as portfolio management; 4. Advisory, investment and portfolio research and advice; 5. Deposits from public must be reinvested in Cambodia; 6. Unbound for Malaysia QABs; 7. Except for credit rating and asset valuation companies which are indicated in related regulations promulgated by Lao Securities Commission Office; 8. Unbound for Indonesia, Philippines, Thailand QABs; 9. Lending to residents in any currency in excess of an equivalent of RM25 million must be undertaken jointly with commercial banks or investment banks in Malaysia; 10. Commercial presence is required; 11. Approval from the Central Bank of Myanmar is required and subject to existing domestic laws
Sources: Protocol to Implement the Eighth Package of Commitment on Financial Services under the ASEAN Framework Agreement on Services (AFAS) [2019]

Banking Integration: ABIF provides framework to encourage 'when-ready' bilateral reciprocal arrangements for banking integration

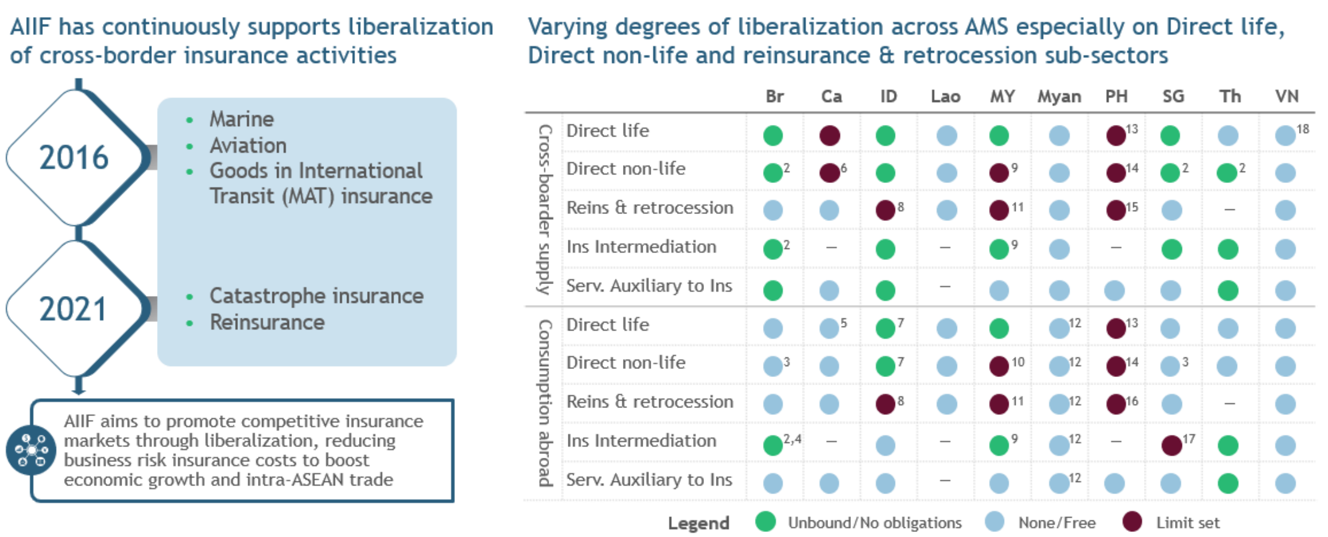
Figure 21: *ASEAN achievements in Banking Integration*



1. Cambodia, Laos, Myanmar, Vietnam; 2. Good Corporate Governance; 3. Capital Adequacy Ratio; 4. Set the global standards for capital adequacy, risk management, and prudential regulation; 5. Example: CIMB has subsidiaries in Cambodia and Vietnam; UOB has subsidiaries in Indonesia, Malaysia, Thailand and Vietnam
Source: ASEAN, BCG Analysis

Insurance Liberalisation: Progress have been made in liberalisation of insurance, particularly in cross-border activities

Figure 22: *ASEAN achievements in Insurance Liberalisation*



1. Except for Indonesia and Myanmar; 2 Except for MAT; 3. except for compulsory insurance of Motor Third Party Liability and Workmen's Compensation can be purchased only from insurance companies locally established; 4. Agents registered in Brunei are not allowed to transact on behalf of insurers registered outside Brunei; 5.Need to be licensed; 6. None for MAT; 7. except if there's Indonesia players; 8. must be rated min as BBB by S&P or equivalent; 9. Except for MAT; 10. Approval of the Central Bank is required; 11. permitted only if local capacity is not available; 12. Unbound for actuarial services; 13. Require authorization to insure risks located in Ph; 14. same as 13 except for marine hull and cargo; 15. Authorization is required for prioritization; 16. if unauthorized, representation by local is required; 17. Require MAS approval except for risks relating to maritime liabilities; 18. excl. health insurance services
Sources: Finance Integration (asean.org), Evolution of ASEAN Financial Integration in the Comparative Perspective, ASEAN Integration Report 2022, Expert Interviews, BCG Analysis

Capital Market Development: Various initiatives implemented to deepen ASEAN capital markets and drive interconnectedness

Figure 23: *ASEAN achievements in Capital Market Development*

Efforts to promote integration and cooperation of capital markets

- **2004** — ASEAN Capital Market Forum (ACMF): Establishment to promote integration and development of capital market within ASEAN as part of a broader effort to deepen economic integration and cooperation
- **2009** — ACMF 'Implementation Plan' 2009: Provision of a clear roadmap with strategic initiatives until the end of 2015
- **2015** — ACMF Vision 2025: "Inter-connected, Inclusive and Resilient ASEAN Capital Market" vision with three Strategic Objectives and "Connectivity" as a key enabler
- **2015** — ACMF Action Plan 2016-2020 (Phase 1): Follow-up of the Implementation Plan, introduced the six key priorities & initiatives
- **2021** — ACMF Action Plan 2021-2025 (Phase 2): Renewal of the five key priorities & initiatives based on the impacts and learnings from Phase1

Sources: ACMF ACTION PLAN 2021-2025

3 of 6 key priorities have made relatively more progress; opportunities to further drive more regulations cohesiveness, mobility and investor participation

Key Priorities	Major Achievements
Improve regional market infra. & connectivity	• Promoted intra-ASEAN trading through new website • Enhanced regulatory capacity through UK study visits and corporate bond market programs in CLMV countries
Drive more cohesiveness in regulations & practices	• Reviewed & extended scope of disclosure in MY/SG/Th • Enabled wider participation with shorter time-to-market by launching and enhancing CIS Framework
Promote ASEAN asset classes	• New asset classes created with issuance labelled as ASEAN GBS, SUS, and SBS with new standards • Dealt at regional and global conferences and events
Foster better mobility for professionals	• Framework established to ease access to information and service on cross-boarder products • MY, SG, Th and Ph has participated/signed the framework
Attract greater investor participation	• Implementation and testing are underway for the established best practices, the revised scorecards, and the newly developed online system
Promote greater stakeholder interaction, co-operation & co-ordination	• Industry panels established on Fund Raising, Collective Investment Schemes, and Exchanges • Joint WG on Sustainable Fin and Infra established with WC-CMD

Relative progress

Payment and Settlement System: Accelerated efforts in ASEAN to drive integration of payments across the region

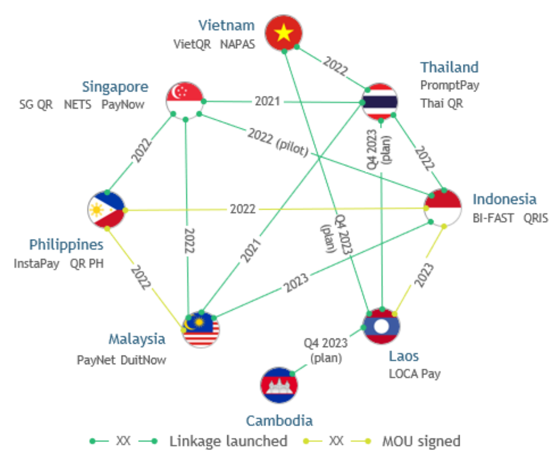
Figure 24: *ASEAN achievements in Payment and Settlement System*

Standardized 'national QR' systems for e-payments implemented and integrated on a bi-lateral basis to support cross-border transactions

E-wallet/QR code payment established at a national level

Thai QR	Thai standard QR based on Prompt pay
SGQR	Combined multiple payment QR codes into single SGQR label
QRIS	BI launched as national standard
DuitNow	Public Bank of Malaysia launched national standard
QR PH	BSP launched P2P and P2M as national standard
VietQR	Napas and 14 first banks of VN launched a national standard

Cross-border payment systems integrated through bilateral agreements



Most AMS adopted ISO 20022 to standardize payment format required for interoperability

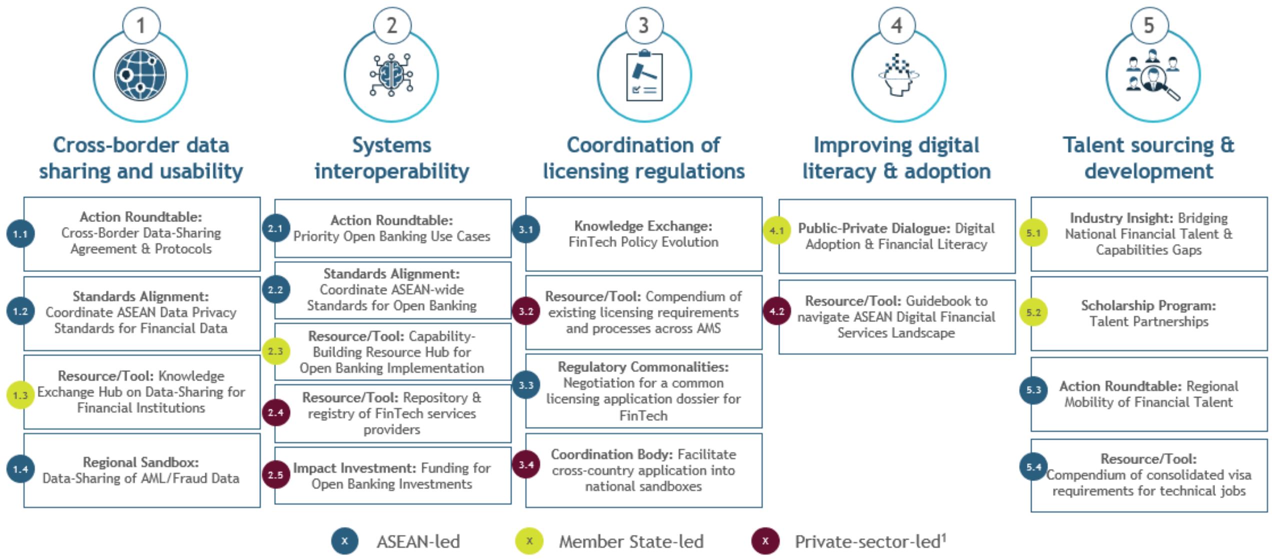
	RPS[1]	LVPS[2]
BN	Done	Done
KH	Done	Done[3]
ID	Ongoing[6]	Under Dev
LA	Done[1]	Done[3]
MY	Done	Under Study
MM	Done	Done[3]
PH	Done	Done[4]
SG	Done	Under Study
TH	Done	Done[5]
VN	Done	Done[5]

1. Retail Payment System; 2. Large-Value Payment System; 3. Planned to complete in 2020; 4. Planned completion in 2021; 5. Planned completion in 2022; 6. Planned completion in 2023
Sources: Regulator website, company announcement, BCG analysis

6.2. 19 enabler-level initiatives

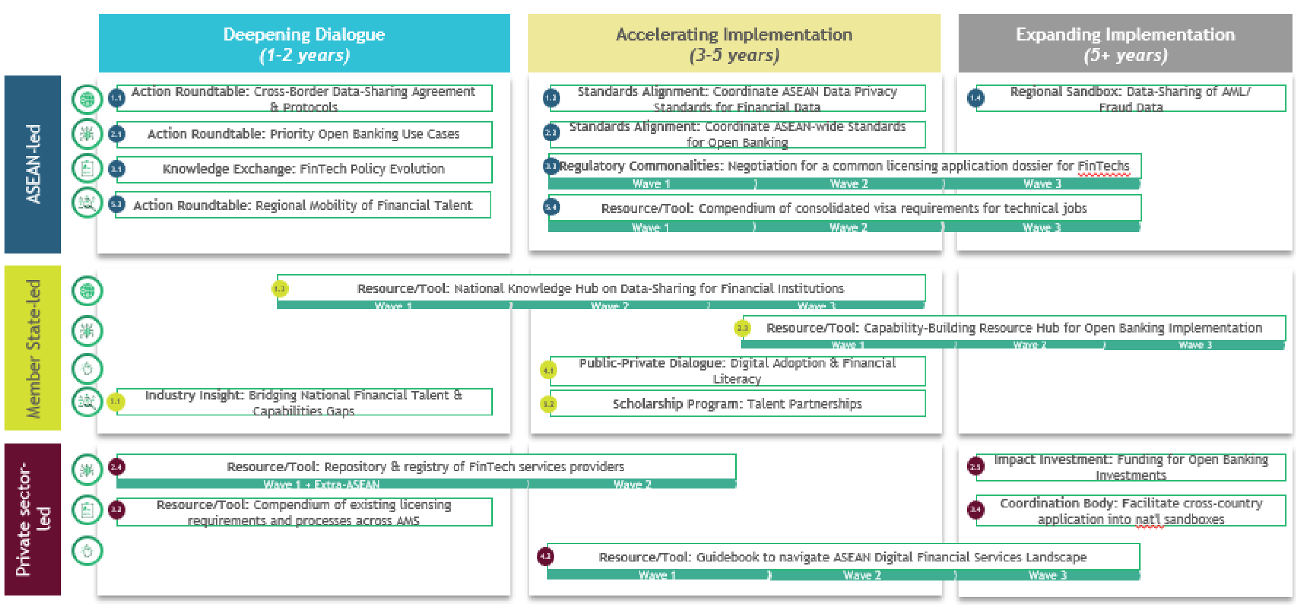
19 enabler-level initiatives for ASEAN have been identified in support of the five catalytic enablers to accelerate integration across financial services sub-sectors. This includes considerations of nine ASEAN-led initiatives, five member state-led initiatives and five private sector-led initiatives, which can be staged out over time based on inter-initiative dependencies and likelihood of participation from stakeholders. Description of each initiative can be found below.

Figure 25: *19 enabler-level initiatives for the five catalytic enablers*



1. Can be through for-profit companies and non-profit organizations (e.g. ASEAN Bankers' Association (ABA), ASEAN Business Advisory Council (BAC), etc.
Source: Industry stakeholder interviews, BCG Analysis

Figure 26: *19 enabler-level initiatives implementation roadmap*



Note: Wave 1, 2, 3 refer to groups of member states based on readiness to implement initiatives
Source: BCG Analysis

Enabler 1: Cross-border data sharing and usability		
1.1	**Action Roundtable:** Cross-Border Data-Sharing Agreement & Protocols	- Regular forum where AMS regulators can dialogue with industry players, and vice versa, to determine priority use cases and consequent protocols for cross-border data sharing - To start with areas with high likelihood of alignment: regional security (e.g. AML, fraud, terrorism) and build on top of the ASEAN Interoperable Data Framework (IDF)
1.2	**Standards Alignment:** Coordinate ASEAN Data Privacy Standards for Financial Data	- Map commonalities and differences of data privacy regulations across AMS, and build on top of the ASEAN Interoperable Data Framework (IDF)
1.3	**Resource/Tool:** Knowledge Exchange Hub on Data-Sharing for Financial Institutions	- Online knowledge repository containing resources to guide financial services players in operationalising data sharing as aligned by common standards in the region
1.4	**Regional Sandbox:** Data-Sharing of AML/Fraud Data	- Regional sandbox overseen by AMS regulators and participated by key regional players, starting with 2–3-member states - To stimulate investment and development of solutions to share AML-related information across countries and between industry players
Enabler 2: Systems Interoperability		
2.1	**Action Roundtable:** Priority Open Banking Use Cases	- Formal forum where AMS regulators can dialogue with industry players, and vice versa, to determine priority use cases for open banking
2.2	**Standards Alignment:** Coordinate ASEAN-wide Standards for Open Banking	- Determine ASEAN-wide standards for open banking for priority use cases
2.3	**Resource/Tool:** Capability-Building Resource Hub for Open Banking Implementation	- Online platform that provides access to capability-building material and consultative experts to boost in-house capabilities of industry players on open banking implementation
2.4	**Resource/Tool:** Repository & registry of FinTech services providers	- Repository of FinTech service providers, ASEAN and non-ASEAN, to help industry players looking to start its open banking journey find technical providers with right capabilities

2.5	**Impact Investment:** Funding for Open Banking Investments	- Regional investment platform that matches industry players and funders to bridge cost gaps for the development of open banking digital solutions
Enabler 3: Coordination of licensing regulations		
3.1	**Knowledge Exchange:** FinTech Policy Evolution	- Regular forums for regulators (both AMS & international) and the private sector to share learnings from policy evolution for FinTech across different jurisdictions around the world
3.2	**Resource/Tool:** Compendium of existing licensing requirements and processes across AMS	- Reference on commonalities and differences of FinTech licensing regulations across AMS for regulators and industry players to expand/enter ASEAN; can serve as a foundational tool for future streamlining of licensing application
3.3	**Regulatory Commonalities:** Negotiation for a common licensing application dossier for FinTechs	- Identify common licensing application data requirements shared across jurisdictions - AMS retains control to request additional requirements and make approval decisions - Start with priority FinTech sub-sector with aligned interest from AMS to support regional expansion e.g. P2P lending
3.4	**Coordination Body:** F**a**cilitate cross-country application into national sandboxes	- Facilitate cross-border sandbox application and testing in multiple ASEAN countries; start small with bilateral agreements - AMS retains control to approve participation and gain shared learnings to guide development of domestic policies
Enabler 4: Improving digital literacy & adoption		
4.1	**Public-Private Dialogue:** Digital Adoption & Financial Literacy	- Facilitate collaborative roundtable discussions between AMS governments and the private sector to support initiatives aligned with national roadmaps - Bridge gap between the theoretical aspects of literacy and practical application of financial products offered by the private sector
4.2	**Resource/Tool:** Guidebook to navigate ASEAN Digital Financial Services Landscape	- Regional 'playbook' to navigate digital maturity of each ASEAN country and key strategies to succeed - Eases complexity of new fin. players in understanding country variance
Enabler 5: Talent sourcing & development		
5.1	**Industry Insight:** Bridging National Financial Talent & Capabilities Gaps	- Information gathering forum to collate input from industry and regulators on talent development needed in each country - ASEAN to facilitate discussions with individual AMS on distilled findings on talent & capabilities needed specific to domestic financial services industry i.e., developers, programmers, compliance specialists - Individual AMS retain sovereignty on policy decisions based on findings

5.2	**Scholarship Program:** Talent Partnerships	- Scholarship programs jointly sponsored through public-private partnerships - Talented university students receive scholarships with bonds lasting 3-5 years to banks or providers in less developed markets - Training programs may incl. summer internships in more developed markets or rotations to FinTech firms
5.3	**Action Roundtable:** Regional Mobility of Financial Talent	- Work with existing working groups on ASEAN connectivity to facilitate structured industry commentary on needs relating to talent mobility specific to financial services sector
5.4	**Resource/Tool:** Compendium of consolidated visa requirements for technical jobs	- Consolidated platform of visa and work pass requirements for finance and tech professionals to ease & accelerate mobility processes, i.e., template submissions to justify hiring and moving foreign executives

6.3. Sub-sector prioritisation criteria

The assessment to determine priority financial services sub-sectors for integration takes into consideration two dimensions:

i. **Integration feasibility** across ASEAN Member States
ii. **Scope for improvement** considering the progress made among ASEAN Member States to date

Integration feasibility is assessed using the following criteria:

Figure 27: *Criteria for integration feasibility assessment*

Integration feasibility assessment

Low — Medium — High

Criteria	Low	High
Strategic Convergence & Inclusion	• **Limited** impact to regional growth • **Minimally contributes** to financial inclusion (SMEs, women, unbanked population) • Distribution of impact **largely not equitable** (e.g. 1-2 ASEAN member state benefiting most)	• **Large** impact to regional growth • **Directly contributes** to financial inclusion (SMEs, women, unbanked population) • Impact distributed **equitably**, even including developing ASEAN member state
Regulatory and Legal Frameworks	• Regulatory & legal divergences are **unaddressable**	• Regulatory & legal divergences are **currently being addressed** through policy changes and/or workarounds
Infrastructure and Capacity	• There is **limited** infrastructure / capacity to enable integration of this sub-sector	• There is **sufficient** infrastructure, technologies and potential innovations to enable integration of this sub-sector

Source: BCG Analysis

6.4. Key features of pilot program

The proposed pilot program collaboration model is designed based on key features and learnings distilled from past pilot programs:

Private sector-led consortium, with oversight from regulators

Private-sector players are well-positioned to lead the formation of consortiums. There are clear benefits to collaborate in utilising new technologies to solve trade finance issues to share costs and risks, maximise network benefits, and strengthen their voice of industry to regulators. To ensure the pilot program is well executed with appropriate risk management protocols and an enabling environment, regulators can play a role in providing oversight and regulatory support based on specific needs and member-state discretion.

Solution-agnostic

The pilot program provides flexibility for private-sector banks to select which solution or technology provider they would like to prioritise for testing. This accounts for the differences in banks' product offerings and digital maturity levels, which increases banks' appetite to participate. Additionally, the approach is also in line with ASEAN's principle to refrain from providing selective endorsement of a particular 3rd party service provider. As seen in other pilot programs, such as the ASEAN Smart Cities Network, ASEAN focuses on providing guidelines on potential types of technology for consideration, allowing participating cities to prioritise and procure the technology independently.

Convening bodies participation

Endorsement from both private and public sector convening bodies is critical for the pilot program's success. On the private sector side, industry associations can play a pivotal role in driving conversations among banks and technology providers. On the public sector side, ASEAN facilitation is critical to drive regional momentum across member states, as seen in multiple pilot programs such as the ASEAN Single Window initiative which was initially piloted in seven member states and later adopted across all ten member states.

Private sector-led funding

Pilot funding to be primarily private-led, with optionality to unlock public sector incentives to drive participation. To incentivise adoption, technology providers can cover a portion of the upfront costs, such as the subscription fees or per transaction fees for limited scope during the pilot period, while banks cover other bank-specific items such as integration and internal change management costs. The funding split between technology providers and banks are subject to negotiations within each consortium, and can vary across types of technology deployed.

Depending on member state capacity and appetite, regulators have the option to provide incentives to drive greater participation from banks. For example, the Monetary Authority of Singapore allowed banks that integrated trade finance operations to the SGTraDex[16] platform to obtain reimbursement for the investments made. Apart from investment subsidies, other common government incentives suitable for technology pilot program include tax break or credits, capital relief, or regulatory sandboxes under close supervision. Regulators can design incentive schemes to promote long-term uptake, with benefits given out only if specific milestones or usage level is met.

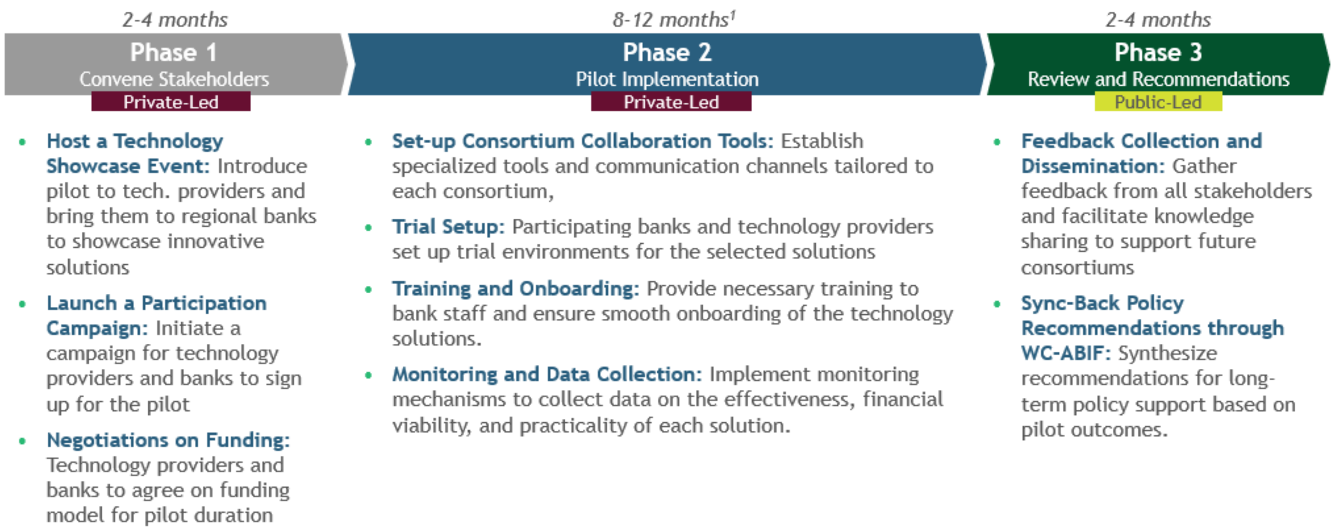
[16] SGTraDex, or Singapore Trade Data Exchange, is a digital infrastructure that facilitates trusted and secure sharing of data between supply chain ecosystem partners

6.5. Implementation blueprint to activate pilot program

The pilot program can start small with one consortium consisting of a few banks from champion member state/s to establish proof of concept. This can be implemented in three phases over a timeline of one to two years, depending on the complexity of solution deployment.

The key actions for consideration on each phase are outlined in Figure 28. Private-led stakeholders, including banks, technology providers and industry associations are key players to set up and implement the pilot program in the first two phases. In parallel, public-sector stakeholders can provide oversight and guidance where needed. In the last phase, ASEAN and regulators play a role to scale up the impact, by ensuring that feedback and learnings are factored into future consortium rollouts and long-term policy enhancements across the region.

Figure 28: *Proposed implementation blueprint to activate pilot program*



1. Pilot implementation could vary depending on complexity of technology solution deployed (e.g. SaaS solutions can be implemented in less than 1 month)
Source: BCG Analysis

6.6. National trade finance registry benchmark examples

Many countries around the world have embarked on their journey to develop a central information registry to enhance information transparency in trade finance. This report highlights five notable examples with a focus on detection of duplicate financing to showcase the development journey, as well as different technology and collaboration model options that can be considered. In addition, five critical features are distilled from the examples to serve as a guideline for countries looking to establish a registry.

Singapore

In 2020, Monetary Authority of Singapore (MAS) initiated a country-wide cooperation to develop the Trade Finance Registry (TFR) aimed at solving the duplicate financing fraud issue, which became the national priority after a series of high-profile trade finance fraud cases in the country earlier that year. With the endorsement from Association of Banks in Singapore (ABS) and Enterprise Singapore, DBS and Standard Chartered jointly led a workgroup of 12 other banks to develop a proof of concept of the registry using the blockchain technology from a Singapore-based third-party provider, dltledgers. The technology allows banks to match data from trade documents across each bank's encrypted ledger and identify duplicate financing without data leaving each bank's database.

Post the proof-of-concept stage, ABS became the owner of the registry, continuing the development supported by a Standing Committee represented by the ABS Council member banks. Three working groups were set up to jointly lead the governance, technical development and business scope of the project. In 2021, ABS transitioned from the blockchain-based platform, selecting MonetaGo, a third-party technology provider, to develop the registry using its cloud-computing powered Secure Financing solution. Beyond the standard features to hash and match data across banks, MonetaGo's solution is integrated with SWIFT's global hash registry, allowing it to cross-check data against sources not just in Singapore but globally. TFR was launched in June 2023, with Banking Computer Services Private Limited (BCS), a subsidiary of NETS group, as the operator. The registry is integrated into Singapore's National Trade Platform (NTP) and SGTraDex, allowing the registry to verify the authenticity of trade transactions. Banks can access TFR through its standalone platform or NTP.

To incentivise the uptake, MAS allows banks to reimburse a portion of the investments incurred in integrating its systems to TFR if certain milestones are met, such as a minimum percentage of the bank's trade finance transactions shared with the registry.

Source: Trade Finance Global, ABS, DBS

Thailand

In early 2022, Thailand's launched a centralised information registry called Trade Document Registry (TDR) to combat duplicate financing fraud. The initiative was led by Thai Bankers Associations (TBA) and its member banks, with the support from National ITMX Company Limited (NITMX), Thailand's national infrastructure provider to develop and operate the platform. Leveraging blockchain technology, the platform allows banks to detect duplicate financing by cross-checking trade and transportation-related documents against information from other banks operating in Thailand. The platform has been adopted by 10 local and regional banks.

Later in 2022, the registry was integrated with the country's new National Digital Trade Platform (NDTP), giving the registry greater access to digital trade documents in the ecosystem. NDTP is a blockchain platform that focuses on digitising and exchanging trade-related documents to enhance end-to-end export and import processes and increase access to financing, particularly for SMEs. The integration between TDR and NDTP unlocks synergies between the two platforms, with TDR gaining access to digital documents exchanged through NDTP, and NDTP leveraging TDR capabilities to verify documents authenticity and financing history.

Source: ITMX, ESCAP, Industry stakeholder interviews

Malaysia

Central Bank of Malaysia led a proof-of-concept initiative called 'Spyder Project' to develop a platform that detects duplicate financing using inter-bank exchanges of invoice information. In 2019, a joint working group with nine banks and PayNet, Malaysia's national infrastructure provider, was formed to develop a distributed ledger technology (DLT)-based solution to digitalise finance. The proof of concept ran for 12 weeks, allowing banks to upload invoices to the system to be verified and cross-checked between banks in real time before making the decision to finance. To safeguard banks and their customers' confidentiality, data is shared on a need-to-know basis when fraud is detected. The proof of concept was successful, with over 290,000 invoices submitted and 1,700 duplicate invoices detected. The full platform, which is under development by PayNet, will allow over 40 banks that are already connected to the national payment system to utilise the platform for their trade finance operations. The development is funded by PayNet, with plans to charge member banks usage fees once the system opens for operations.

To scale up impact, Central Bank of Malaysia aims to expand the use cases of the blockchain infrastructure, integrating stakeholders along the supply chain such as shipping companies, customs, insurers and takaful operators[17] to facilitate the end-to-end digital trade finance process.

Source: Central Bank of Malaysia, Industry stakeholder interviews

India

India's first blockchain network aimed at addressing the risk of fraud in the trade finance market was introduced in 2018. The blockchain network was led by three India-based factoring platforms — RXIL, A.TReDS and M1xhange, leveraging Hyperledger Fabric technology from a third-party technology provider, MonetaGo, to detect duplicate invoices uploaded on the three platforms even if the bill has

[17] Takaful refers to Islamic insurance, where members contribute money into a pooling system to guarantee each other against loss or damage.

been slightly altered to appear different. This technology connects the previously siloed data pools of the platforms safely, allowing the ecosystem to benefit from the increased transparency of trade finance information.

Source: PYMNTS

United Arab Emirates

Launched in 2021, UAE Trade Connect, is the country's blockchain trade finance solution for banks, with duplicate finance detection as its initial application. Initiated by the First Abu Dhabi Bank (FAB), the working team included seven participating banks and Etisalat Digital, state-owned technology provider, with the central bank as an observing member on the steering committee. Built on the Hyperledger Fabric enterprise blockchain, the solution compares the hashed invoice information to check whether the invoice has been financed by one of the other consortium banks. Within the first nine months of its launch, the registry has processed USD 2.7 billion (GBP 2.1 billion) in invoices value on the platform.

Moving forward, the platform has the potential to expand with 48 banks in the UAE. The roadmap also includes a plan to enhance platform capabilities beyond duplicate financing, covering additional use cases such as sanctions screening and anti-money laundering as well as more traditional trade finance funding applications.

Source: Ledger Insights

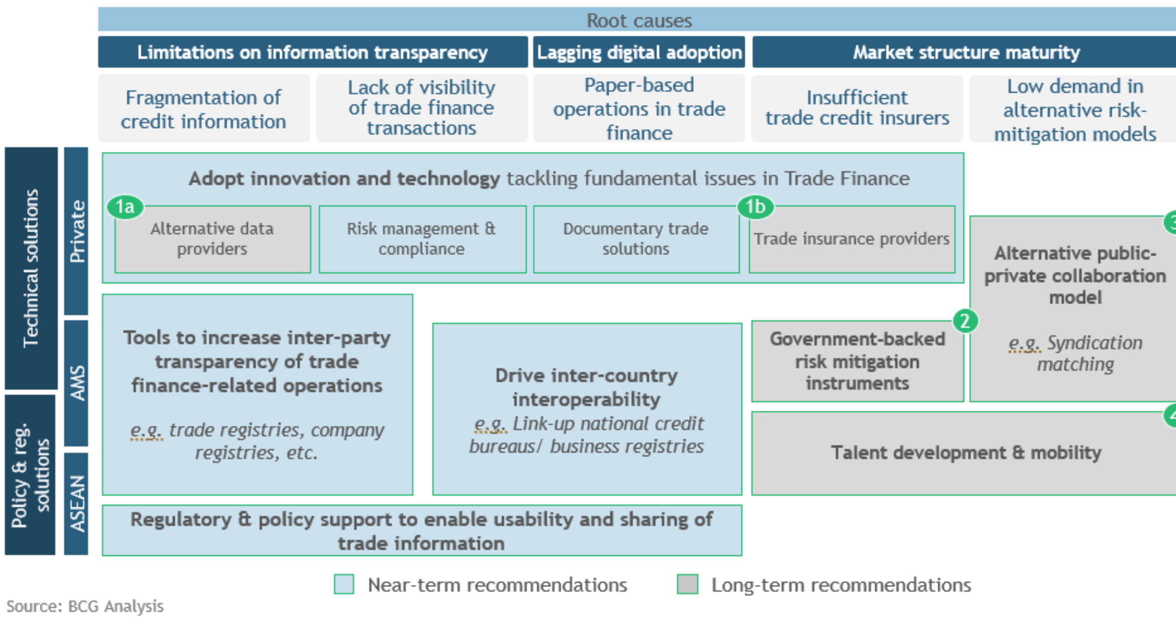
Five critical features are distilled from the benchmark examples, which can serve as a guideline for countries that are looking to develop a trade finance registry to ensure the platform is effective and scalable:

i. **Anonymised/Tokenised Information:** Employ advanced data protection methods, such as tokenisation and anonymisation, to ensure the confidentiality and security of sensitive trade information; information shared on need-to-know basis
ii. **Risk-Based Alerts and Notifications:** Automated alerts and notifications should be triggered based on predefined risk parameters, facilitating proactive fraud prevention
iii. **Interoperability with External Databases and Technologies:** Seamless interoperability with external databases (e.g. other national or private-owned registries) for cross-referencing & should be vendor-agnostic, allowing for integration where different vendors can access and contribute to the detection of diverse types of fraud
iv. **Trade Authenticity Verification:** Incorporate advanced verification technologies to validate the authenticity of trade documents and identities involved
v. **Minimal Impact on Transaction Time:** Optimised for high efficiency, ensuring that the addition of security and verification layers does not impede transaction processing times

6.7. Long-term recommendations for trade finance challenges

Beyond the near-term recommendations on digitisation and information transparency discussed in Chapter 4, ASEAN can consider other solution archetypes as part of a long-term plan. Select examples of long-term solutions include:

Figure 29: *Long-term recommendations for trade finance challenges*



1. **Adoption of innovation and technology tackling fundamental issues in Trade Finance:** In addition to the primary use cases in risk management and compliance and documentary trade solutions, ASEAN can encourage private sector players to adopt technology solutions in other use cases. For example:
   a. **Alternative data providers:** Companies offering non-traditional data sets beyond the scope of traditional credit reporting agencies, such as online transactions, shipping data, satellite imagery, who can enhance trade finance provider's ability to assess risks of trading parties.
   b. **Trade insurance providers:** Companies offering trade credit insurance, protecting businesses against losses from non-payment of commercial debt
2. **Government-backed risk mitigation instruments:** ASEAN Member States can work towards establishing or strengthening state-owned financial institutions to provide credit facilities, guarantees and insurance against risk for trading parties within the country.
3. **Alternative public and private collaboration model:** Private firms and ASEAN Member States could work together to encourage participation in alternative risk mitigation models, such as providing educational opportunities or facilitating matching for loan syndication where multiple banks can co-finance trade transactions to share risks.
4. **Talent development and mobility:** ASEAN can support ASEAN Member States in designing capability-building programs and enhance policies to encourage regional movement of talent with trade, finance and digital expertise. These efforts can help bridge the capabilities gap that finance providers and insurers face when expanding operations in the region, especially in nascent ASEAN economies.

UK Providers to Support Trade and Supply Chain Finance

Company	Description	Contact
Bolero International	Bolero International is a leading cloud-based platform driving the digitization of global trade. With more than 20 years of experience in trade, maritime and cloud technology, we have a proven track record in helping organizations transition to and capitalize on the benefits of digitization. Documentary trade solutions	**Vincent Acors** Trade Finance Director APAC vince.acors@bolero.net
Crossflow	Crossflow is an AI driven working capital marketplace enabling companies to access working capital via its global network of financial institutions underpinned by a unique legal framework and SOC2 standards. Dynamic supply chain finance	**Magda Rozczka** Chief Executive Officer mrozczka@crossflowpayments.co.uk +44 (0)20 34759080
Cytora	Cytora is the configurable platform that enables commercial insurers to create digital workflows by digitizing, evaluating, and routing risks. Alternative data providers	**Richard Hartley** Chief Executive Officer richard@cytora.com
Demica	A market-leading fintech, powering the trade finance programmers of the world's largest trade banks and corporations. Demica's proposition is simple: our intuitive, cloud-based platform enables financial institutions and corporates to automate and scale their working capital solutions. Dynamic supply chain finance	**Daniel O'Hara** Marketing Director, daniel.ohara@demica.com, +44 20 3958 5929
Earth-i	Earth-i is a leader in Earth Observation data analytics and experts in Artificial Intelligence. The Earth-i team helps companies and governments make better decisions by providing them with geospatial data insight, at global scale, simply and at low cost. Alternative data providers	**Chetan Pradhan** Head of Institutional Engagement Earth-i chetan.Pradhan@earthi.co.uk
EssDOCS	Provides paperless global trade management solutions which digitize, automate, and accelerate trade & post-trade operations, finance, logistics, compliance, and visibility. Documentary trade solutions	**Stanley Young** VP Business Development, Asia Pacific stanley.young@essdocs.com

Finanstra	A market-leading end-to-end lending solutions, Finastra offers the most comprehensive portfolio of end-to-end lending solutions in the market - across syndicated, commercial, consumer, and mortgage lending. Dynamic supply chain finance	**Iain MacLennan** Head of Trade and Supply Chain Finance Lending, Iain.MacLennan@Finastra.com
Finverity	Finverity is the only solution that enables banks and NBFIs to implement and offer the full spectrum of open account and supply chain finance products on one system. • Design and create new financial products (e.g: Reverse factoring, Factoring, PO Finance, Distributor Finance) • Create end to end workflows and process automation for your teams to efficiently operate them • Offer these products via user-friendly digital customer portals Dynamic supply chain finance	**Ahanna Anaba** Head of Sales – Digital Solutions & Partnerships ahanna@finverity.com
Geocento	An online provider of satellite images, with a massive library of imagery from a wide range of suppliers. Alternative data providers	**Kim Partington** CEO & Co-Founder kim.partington@geocento.com
Geospatial Insight	Leading provider of independent research derived from the analysis of satellite, aerial and drone imagery and the integration of this intelligence with a range of other data sources. Alternative data providers	**Dan Schnurr** Co-Founder dan.schnurr@geospatial-insight.com
Gresham Tech	Gresham Technologies plc is a global leader in mission critical software and automation solutions for financial services. Risk management & compliance	**Tom Olsson** Managing Director APAC tolsson@gresham-computing.com
Howden	Howden is a specialist insurance broker. We combine the strength of a global broker with the personal touch of a group with employee ownership at its heart. Founded in 1994, we have always put our people first, knowing that the P&L will follow. Trade insurance provider	**Goh Chye Huat** Regional CEO of Asia chye.goh@howdengroup.co.uk

iGTB	With a rich suite of transaction banking products, iGTB enable banks to meet their ambition to be the Principal Banker to their corporate customers. The platform is powered by Contextual Banking experience (CBX), a white labelled Digital Engagement Banking Platform that offers a seamless and contextual user experience for managing Cash and Trade digital channels. Documentary trade solutions	**Sachin Salian** Global Marketing Head sachin.salian2@intellectdesign.com +91 82 9122 5196
Kriya	Kriya keeps business flowing brilliantly through all your sales channels with flexible trade credit and B2B payments. Dynamic supply chain finance	**Anil Stocker** CEO & Co-Founder a.stocker@marketfinance.com
Levantor	Levantor finances distribution channel sales growth, helping global manufacturers and their key customers to substantially increase business on payment terms that work for both parties. Dynamic supply chain finance	**David Frye** Chief Executive Officer david.frye@levantor.com
Nexus	Founded in 2008 and based in London, UK, the Nexus Group is a leading, independent, specialty Managing General Agent (MGA) group with a focus on niche insurance classes of business. Trade insurance provider	**Anthony Egerton** Chief Executive Officer, Asia aegerton@nexusunderwriting.com
Nexus Frontiertech	Nexus Frontier Tech is an AI research company offering financial data processing products that utilise computer vision and NLP technologies to accelerate decision making for banking, asset management and trading industry. Our proprietary OneNexus generative AI platform powers modular AI components to provide traceable data in real time for credit analysis, fraud detection, onboarding and ESG portfolio monitoring. We have won numerous awards, including the prestigious Deloitte Fast 50 in the UK. Risk management & compliance	**Danny Goh** Chief Executive Officer danny@nexusfrontier.tech +44 7971301365 / +65 87599980
Orbian	Orbian is the longest tenure SCF provider and has been providing Supply Chain Finance (SCF) solutions for over 20 years. We are 100% dedicated to Buyer-centric SCF solutions including our Traditional Supply Chain Finance product and, more recently, Express SCF (xSCF) and Virtual Card (e-Card) offerings. Dynamic supply chain finance	**Thomas Dunn** Chairman at Orbian tom.dunn@orbian.com

Pelican	Pelican provides banks and corporates with solutions that enhance, streamline and secure the payments life-cycle. With over twenty years of expertise in the practical application of Artificial Intelligence technology to payments and financial crime compliance, Pelican partners with its customers to deliver innovative and agile solutions and drive growth. Risk management & compliance	**Parth Desai** Chief Executive Officer pdesai@pelican.ai
Ripjar	Countering global money laundering, terrorism, and criminal networks. Our Labyrinth platform supports leading global companies and governments in detecting criminal behavior. Risk management & compliance	**Peng Hui Kee** Sales Director - APAC penghui.kee@ripjar.com
RiskLogix	Risklogix provides a proprietary GRC software platform, aCCelerate, which has 500,000 users in over 80 countries. Risk management & compliance	**John Kiddy** Chief Executive Officer John.kiddy@risklogix-solutions.com
Satago	Satago is a flexible invoice finance, debt chasing and risk insight platform that has been designed to help businesses get paid on time - every time. Dynamic supply chain finance	**Robert Mills** Chief Strategy Officer robert.mills@satago.com
Stenn	A leading digital marketplace enabling growth for businesses engaged in international trade, e-commerce and digital services. Dynamic supply chain finance	**Cissy Hon** Partnerships Director, Asia cissy.hon@stenn.com
Traderiver	TradeRiver is an alternative finance provider of working capital to fast growing businesses in the UK. Dynamic supply chain finance	**Richard Fossett** Chief Executive Officer rfossett@traderiverfinance.com
Tradeteq	Tradeteq is a trading platform that makes trade finance and other private debt instruments investable through the power of innovative technology. We provide flexible funding lines through automated underwriting which empower our asset partners to advance more working capital to businesses. Dynamic supply chain finance	**Mattia Tomba** Head of Markets mtomba@tradeteq.com + 971 54 336 2049

Traydstream	Traydstream is a cloud-based platform whose modular OCR technology digitises and stores Trade Finance documentation, extracting the data intelligently and, based on machine-learned experience, validating the transaction documentation against a vast, evolvable library of Trade Rules and Compliance checks. The platform redefines and streamlines Trade Finance processing. Risk management & compliance Documentary trade solutions	**Srividya Subramanian** Global Sales & Implementation Head – META & APAC srividya.subramanian@traydstream.com
Quantexa	Quantexa is a Decision Intelligence company using AI & network analytics to uncover hidden customer connections & behaviors. Risk management & compliance Alternative data providers	**Christopher Yap** FSI Director chrisyap@quantexa.com
White Oak	FCA authorized and regulated European lending platform which provides capital to support SMEs and mid-corporates through its full suite of flexible lending products. Dynamic supply chain finance	**Paul Thompson** Portfolio Director paul.thompson@whiteoakuk.com

Addendum

In consideration of the questions raised during the live discussion on this report at the 15th WC-ABIF held on 22nd February, 2023, this addendum aims to directly address the inquiries regarding the adoption feasibility for emerging ASEAN economies, the practicality of SME participation, and the need for broad stakeholder engagement. Recommendations in this report are crafted with a keen awareness of the diverse capacities and needs within the ASEAN region, emphasizing an inclusive, scalable approach to trade finance.

Strategic Path and Vision

What is the envisioned scope of the pilot and trade registries? This pilot focuses on intra-ASEAN trade, given that 22% of ASEAN trade in goods is attributed to intra-ASEAN flows. Considerations for extra-regional linkages and broader trade and investment regimes can be further studied during the 'scale fast' phase.

What regulatory support is needed for these recommendations? Regulators play a crucial role in facilitating open dialogue amongst ASEAN Member States around key regulatory areas: enabling anonymized access to inter-bank data, expanding the pool of digital transaction data, enhancing the integrity of company identification data and enabling cross-border comparison of company identification data. Further analysis on legal requirements will be subject to country-by-country discussions.

What other stakeholders can be further engaged? In the immediate-term, engagement with relevant ASEAN working groups, such as Working Committee-Financial Services Liberalization (WC-FSL), Working Committee on Financial Inclusion (WC-FINC), and various committees looking at ASEAN's trade and market integration is welcomed. As we 'scale fast', broader engagement with customs authorities and traders is essential.

Technologies and Accessibility

How do existing technologies and platforms fit into this pilot? Existing technologies and platforms can serve as the foundation for these pilots. Countries that have started implementing these should continue to do so, future interoperability should be a key consideration.

How do we encourage SME participation? The design of trade platforms need to consider the inclusion of SMEs, incorporating user-friendly interfaces, affordable access, local language support and investments in capacity building. Proper capacity building must also be considered to drive uptake of SMEs on these platforms.

Challenges and Adoption

What are the challenges driving adoption amongst banks and users? Anticipated challenges in the adoption of trade finance solutions, especially for emerging economies and SMEs, primarily revolve around technological adaptation, regulatory alignment, stakeholder engagement, and operational integration.

Do we need all ASEAN member states to move together on these recommendations? The incremental implementation strategy is crafted to allow ASEAN Member States to progressively enhance their trade finance systems at their own pace. Depending on starting points, countries can very well start with 'start small' pilots while others may in parallel initiate their 'scale fast'.