



# MALAYSIA

## SELECTED ISSUES

February 2020

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# MALAYSIA

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January 23, 2020

Approved By  
**Asia and Pacific  
Department**

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## CONTENTS

|   |          |
|---|----------|
| <b>Glossary</b>   | <b>2</b> |
| <b>FINTECH IN MALAYSIA</b>  | <b>4</b> |
| A. Introduction   | 4        |
| B. Digitally Enabled to Capture FinTech Growth                                | 4        |
| C. Changing Financial Sector Landscape  | 6        |
| D. FinTech and Incumbent FIs  | 10       |
| E. Regulatory Environment: Balance Between Innovation and Financial Stability | 13       |
| F. Key Challenges   | 18       |
| References  | 21       |
| <b>BOXES</b>  |          |
| 1. Mobile Wallets in Malaysia   | 8        |
| 2. Examples of Malaysian FinTech Players                                      | 10       |
| 3. BNM's FTEG FinTech Regulatory Sandbox                                      | 14       |
| 4. FinTech and Malaysia's Vibrant Islamic Finance Landscape                   | 16       |
| <b>FIGURE</b>   |          |
| 1. Digital Readiness  | 4        |
| <b>TABLES</b>   |          |
| 1. Malaysian Banks' Digital Initiatives                                       | 11       |
| 2. Partnerships between Malaysian Banks and FinTech Startups                  | 12       |
| 3. Initiatives and Regulations in Malaysia                                    | 20       |

## Glossary

|   |   |
|---|---|
| <b>Chatbot</b>  | An artificial intelligence computer program that is designed to have a conversation with human users.   |
| <b>Cloud services</b>                                 | The delivery of services such as servers, storage, databases, software, analytics over the internet (the cloud).  |
| <b>Crowdfunding</b>                                   | The activity or process of raising money from a large number of people, usually through online platforms, for a project or a small business.  |
| <b>Cryptocurrency</b>                                 | A digital asset that depends mainly on cryptography and distributed ledger technology as part of its perceived or inherent value. Bitcoin is an example of a cryptocurrency.  |
| <b>Electronic Know-Your-Customer (e-KYC)</b>          | Paperless authentication process of the user, in which credentials such as identity and address can be verified electronically.   |
| <b>Electronic payment (e-Payment)</b>                 | A non-cash payment method that includes mobile payment, or through charge cards, credit cards and debit cards.  |
| <b>GrabPay</b>  | The mobile wallet created by Grab, Southeast Asia's largest ride-hailing operator.  |
| <b>Initial Coin Offering (ICO)</b>                    | An operation through which companies, entrepreneurs, developers or other promoters raise capital for their projects in exchange for digital tokens (or 'coins'), that they create.  |
| <b>Insurtech</b>                                      | The combination of insurance and technology, refers to the use of technology in insurance to raise efficiency, reduce costs, or improve customer service.   |
| <b>Interoperable Credit Transfer Framework (ICTF)</b> | A framework issued by Bank Negara Malaysia (BNM) that creates a shared payment infrastructure for banks and non-bank e-money issuers with the aim to promote collaborative competition.   |
| <b>Islamic finance</b>                                | Financial activity that is shariah-compliant. Key principles include the prohibition of charging interest (riba), uncertainty (gharar), speculation (maysir) and dealing with impermissible activities or products (such as alcohol). |
| <b>Maybank QRPay</b>                                  | An application by Maybank that allows users to pay at authorized merchants by scanning a QR code.   |
| <b>Mobile wallet</b>                                  | Mobile wallets are smartphone applications that enable users to make online and in-person payments at authorized merchants via the mobile phone.  |

|   |  |
|---|--|
| <b>Open Application Program Interface (API)</b>   | Publicly available programming interface for a software application or web service that a programmer can access with relatively few restrictions.  |
| <b>Quick response (QR) code</b>                   | The trademark for a machine-readable code that consists of an array of black and white squares, which usually stores URLs or other information that can be read by a camera of a smartphone. |
| <b>Payments Network Malaysia Sdn Bhd (PayNet)</b> | A Malaysian payments infrastructure company that designs, builds and operates payments and financial market infrastructures. It is jointly owned by BNM and 11 Malaysian banks.              |
| <b>Peer-to-Peer (P2P) lending</b>                 | The lending of money to individuals or businesses through online platforms that match lenders to borrowers.  |
| <b>Regtech</b>                                    | The use of technology in regulation.   |
| <b>Regulatory sandbox</b>                         | A framework that allows for the experimentation of innovative FinTech solutions in a live market environment within specified parameters and timeframes.                                     |
| <b>Sukuk</b>                                      | Debt security structured under any Shariah compliant contract, which is also known as an Islamic bond.   |
| <b>Takaful</b>                                    | A type of Islamic insurance in which at least two parties agree to jointly guarantee one another in the event of a loss or damage.   |

# FINTECH IN MALAYSIA

## A. Introduction

### 1. Financial Technology (FinTech) is increasingly important in Malaysia's financial sector.

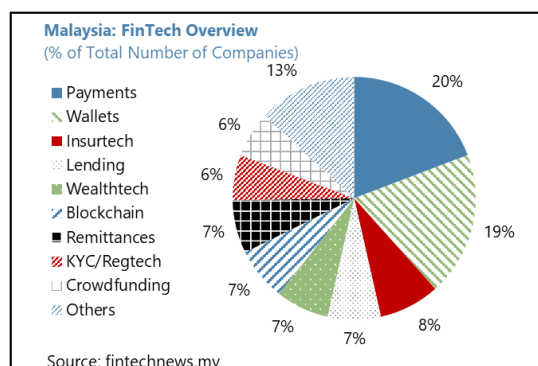
Conditions are good for further growth given a growing middle class, high mobile and internet penetration rates, and the government's commitment to grow the digital economy through proactive regulations and support. FinTech provides opportunities for incumbent financial institutions (FIs) and new entrants including in areas such as Islamic finance. Incumbent FIs, concerned about the threat that FinTech poses to their business model, are increasingly investing in digitalization and are also partnering with entrants. FinTech in Malaysia is in the early stages and important challenges need to be addressed (skills, talent, infrastructure, and funding) to ensure continued rapid growth with due regard to financial stability.

## B. Digitally Enabled to Capture FinTech Growth

2. **Malaysia is digitally enabled to seize the opportunities brought by FinTech** (see panel Digital Readiness). It is ranked highly (31 out of 139 countries) in the World Economic Forum's Network Readiness Index, an aggregate measure that aims to capture how well an economy is using information and communication technologies. Connectivity indicators are mostly strong with good internet and mobile penetration and widespread smartphone usage. However, coverage and adoption of fixed broadband services lags relative to Malaysia's per capita income level and lack of competition has led to high prices (World Bank, 2018). Building on the availability of digital infrastructure, internet banking usage has soared over the years, exceeding 90 percent in 2018,<sup>1</sup> quadrupling from ten years ago. Mobile banking is growing fast, supported by high 4G mobile network coverage. The roll out of fast 5G technology planned in the next years, alongside affordable mobile data,<sup>2</sup> will support further growth in the mobile space.

## C. Changing Financial Sector Landscape

3. **FinTech developments are changing Malaysia's financial sector landscape.** First, financial services offerings by existing FIs are affected as they adopt new technologies. Second, technology start-ups



<sup>1</sup> The calculation is based on total subscribers, rather than unique, active subscribers. The number of active internet banking users is estimated at close to half the population.

<sup>2</sup> Malaysia's cost of 1GB of mobile internet data was 0.2 percent of Gross National Income per capita in 2018, compared with 0.8 percent in the six Southeast Asian Countries covered in the e-Economy SEA 2018 report.

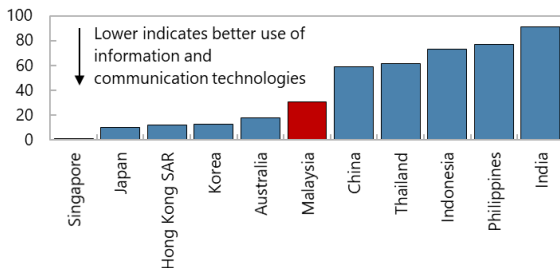
(continued)

and tech companies entering the financial services space sometimes compete with incumbent FIs, but often collaborate and complement existing financial services (paragraph 9). There are close to 200 FinTech startups<sup>3</sup> as of April 2019 which are active in a wide-range of FinTech activities, including payments, lending and blockchain.

**Figure 1. Malaysia: Digital Readiness**

Malaysia ranks highly in the World Economic Forum's Networked Readiness Index.

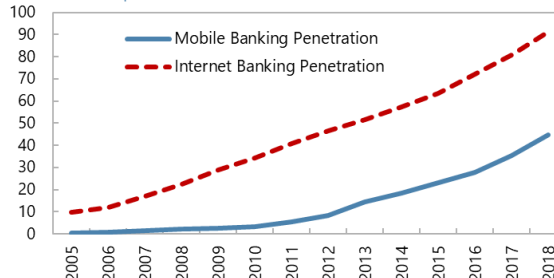
**Networked Readiness Index**  
(Ranking out of 139; 2016)



Sources: World Economic Forum, IMF staff calculations

Internet and mobile banking penetration rates have soared...

**Mobile and Internet Banking Penetration**  
(% of Total Population)

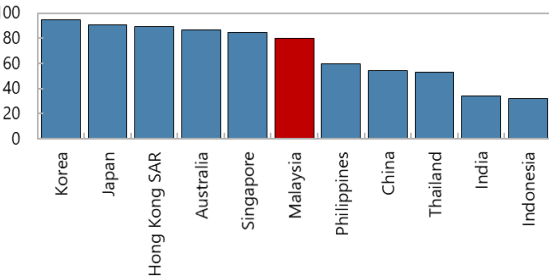


Sources: BNM, IMF staff calculations

...enabled by widespread internet usage...

**Internet Users**

(% of Individuals; 2017)

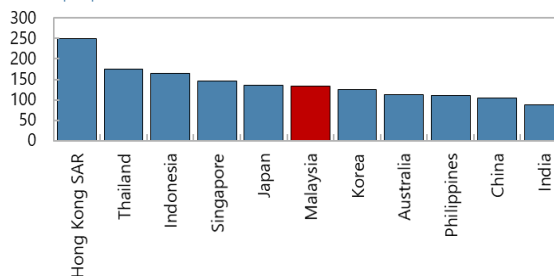


Sources: International Telecommunications Union, IMF staff calculations.

...and mobile subscriptions.

**Mobile Subscriptions**

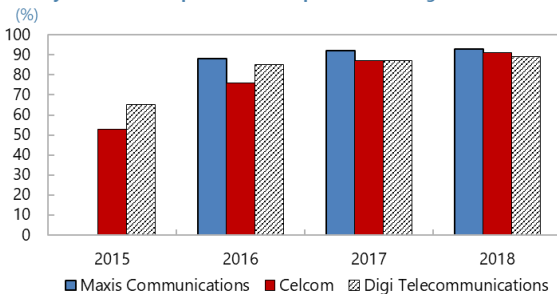
(Per 100 people; 2017)



Sources: International Telecommunications Union, IMF staff calculations

4G network coverage is almost universal and work is underway to roll out 5G...

**Malaysian Telecom Operators' 4G Population Coverage**

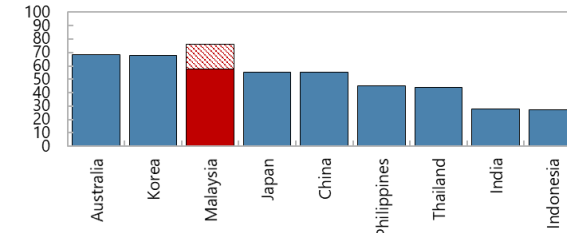


Sources: Financial reports, IMF staff calculations

...which together with good smartphone penetration will enable additional mobile FinTech applications.

**Smartphone Penetration**

(%)



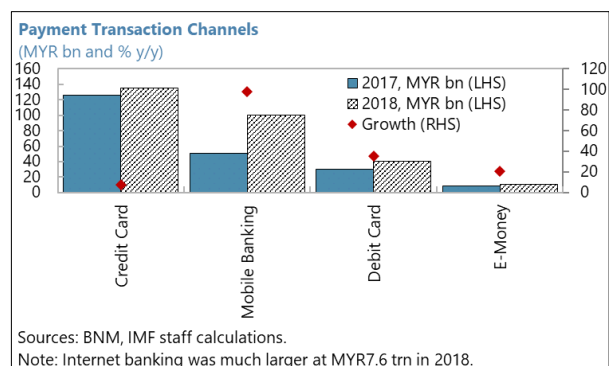
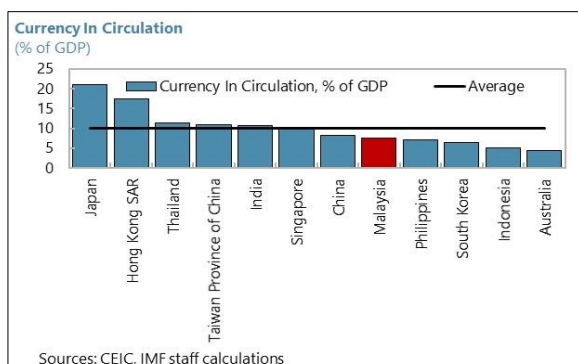
Sources: Newzoo, Malaysian Communications and Multimedia Commission (MCMC), IMF staff calculations.  
Note: The overall bar (inclusive of red pattern) for Malaysia reflects data from MCMC, while the blue and red block bars are data from Newzoo.

<sup>3</sup> Finance Minister Lim Guan Eng stated the figure during "Unlocking the Potential of the Digital Economy" speech at the World Bank on 12 April 2019.

**4. FinTech activities can be broadly classified under five sub-categories:** (1) payments, clearing and settlement; (2) deposits, lending and capital raising; (3) insurance; (4) investment management; and (5) market support.<sup>4</sup>

- **Payments, clearing and settlement:** Malaysia's payment sector is an active market for FinTech players (40 percent of the market according to BNM; the largest FinTech segment), both entrants and incumbents. Malaysia's cash-use as a share of GDP is already below the regional average of 10 percent. Credit card usage is wide-spread, and debit card transaction volumes are growing rapidly. Mobile banking is fast becoming mainstream. E-money, defined as an electronic store of monetary value on a technical device that may be widely used for making payments, is still small perhaps reflecting the ubiquity of other convenient payment methods in Malaysia. That said, there is much activity in the e-money space. Domestic players including Boost, Mpay and Grabpay have established e-wallets, while major technology firms from China

such as Alibaba (Touch 'n Go eWallet) and Tencent (WeChat Pay MY) have entered the market (Box 1). Remittances are also moving online, with MoneyMatch being a prominent domestic FinTech player (Box 2) and UK-headquartered TransferWise obtaining a remittances license in June 2019.



- **Deposits, lending and capital raising:** Malaysia currently has no digital-only banks in operation<sup>5</sup> but new entrants in this area are market-based financing platform operators. They include peer-to-peer (P2P) and equity crowdfunding (ECF), which have provided additional funding channels for entrepreneurs and small and medium-sized enterprises (SMEs). There are currently 21 licensed market-based financing platform operators (11 P2P and 10 ECF) in Malaysia, according to the Securities Commission (SC). As of September 2019, they have provided MYR587 million (with P2P accounting for 89 percent), growing approximately 18 times from September 2017 figures. The number of successful financing campaigns grew 84 times to 6,292 over the same period.

<sup>4</sup> This framework was developed by the Financial Stability Board. See <http://www.fsb.org/2017/06/financial-stability-implications-from-fintech/>

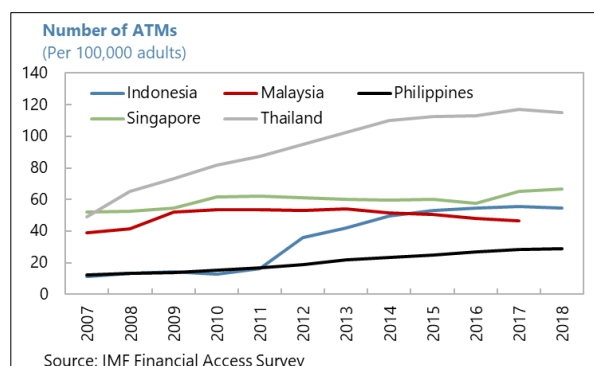
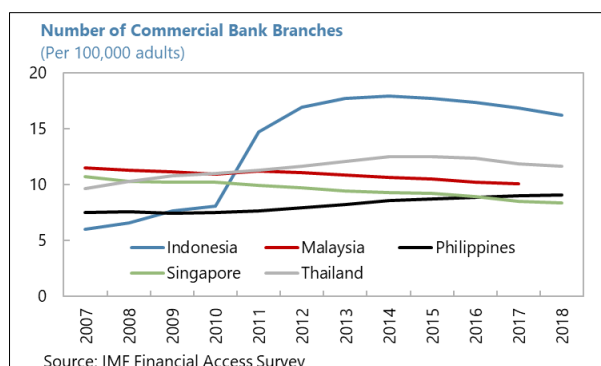
<sup>5</sup> BNM launched its exposure draft on digital bank licensing framework on December 27, 2019. As of end 2019, more than 20 parties have expressed interest in applying for the license.

- **Insurance:** The insurance sector is adopting technology in a wide range of areas including digital distribution, claim management, after-sales service, customization, and underwriting using algorithms. Local startups active in Insurtech are, for example, PolicyStreet and Katsana.
- **Investment management:** The use of FinTech in investment management is notably seen in the use of automated discretionary portfolio management services to investors. Wealth management solutions are provided through artificial intelligence-based platforms such as digital advisers. Regulated players include locally-headquartered ALGEBRA and Singapore-based StashAway. HelloGold is a shariah-compliant Malaysian-based wealth management Fintech company, which promotes savings in gold.
- **Market support:** Technologies that provide support to the Malaysian financial sector include innovation in areas such as electronic Know-Your-Customer (e-KYC), voluntary Open Application Program Interface (API) and cloud services. E-KYC—currently available for individuals in Malaysia for money services businesses and will be implemented in phases over the next year in other sectors—can improve customers’ convenience by eliminating the need for face-to-face verification and help with financial inclusion especially in remote areas. Open API (currently on a voluntary basis in Malaysia in contrast to mandatory open banking regulations in some jurisdictions) allows third party providers to develop applications and services for FIs and could enhance competition. Migration to cloud services can spur cost efficiencies in areas such as IT infrastructure and increase flexibility to scale existing resources.

**5. Digital currency and tokens including crypto-assets are an additional and growing area.** There are no official statistics on domestic initial coin offerings (ICO) activity, but activity appears small. Trading on declared digital asset exchanges (DAX) was on a decreasing trend in number and value of transactions in 2018, according to BNM.

## D. FinTech and Incumbent FIs

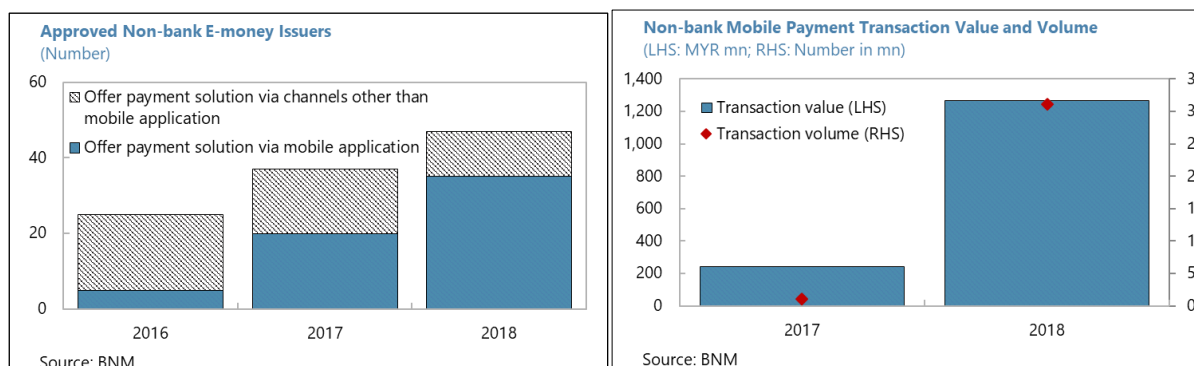
**6. Malaysian banks continue to dominate in deposits, lending and capital raising, but they have been gradually reducing their emphasis on physical distribution networks.** The number of commercial bank branches in Malaysia has been declining. Malaysia is the only ASEAN-5 nation that has seen the number of ATMs fall over the past couple of years to 46.75 ATMs per 100,000 adults in 2018 from a peak of 53.7 in 2010.





### Box 1. Mobile Wallets in Malaysia

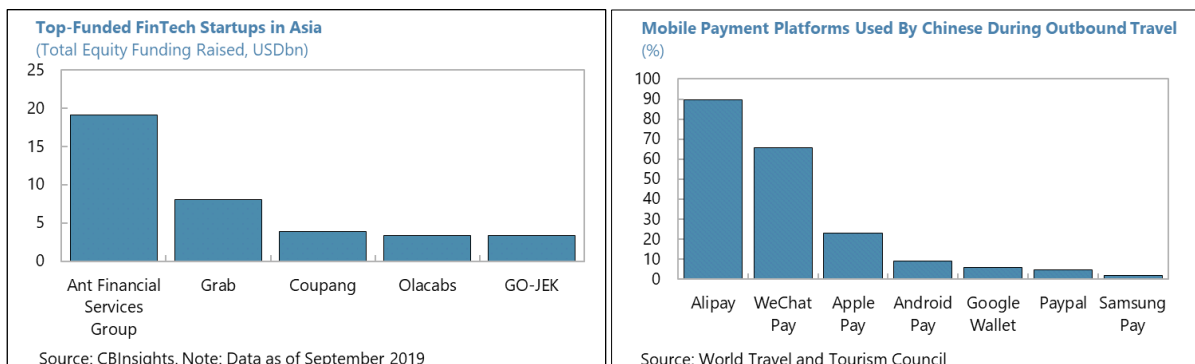
**Mobile wallets have gained traction in Malaysia over recent years.** Mobile wallets are offered through smartphone applications and enable users to make online and in-person payments at authorized merchants via the mobile phone. Multiple mobile wallets have been launched by non-bank players in Malaysia, particularly FinTech startups and big technology firms. According to Bank Negara Malaysia (BNM), the number of non-bank e-money issuers that offer payment solutions through mobile apps grew seven-fold to 35 in 2018 from five in 2016. Out of the many mobile wallets in Malaysia, GrabPay, Touch 'n Go (a partnership with Ant Financial) and WeChat Pay are among the most popular based on a survey conducted by Financial Times Confidential Research.



**Grab, Southeast Asia's largest ride-hailing operator, has ventured into mobile wallets and other financial services.** Grab is the only digital payments provider with access to e-money licenses in six major ASEAN economies. Grab's mobile wallet, GrabPay, is integrated into the Grab mobile super app. GrabPay was rolled out in Malaysia in June 2018 after launching in Singapore in 2017. Users can top up GrabPay credits through the mobile app using online banking, debit and credit cards. In-store purchases can subsequently be made at GrabPay's authorized merchants. Since 2018, GrabPay has established a partnership with Maybank. The partnership aims to provide greater value to users and merchants of the Grab and Maybank mobile wallets. This includes, among others, a more seamless mobile wallet top up experience and an increase in the number of merchant that can accept payments from both mobile wallets.

**Chinese big tech firms Ant Financial and Tencent have entered Malaysia, providing Malaysians access to their mobile wallets.** Ant Financial has been in a joint venture with Malaysian smart card company Touch 'n Go since 2017 to offer a mobile wallet based on Alipay's payment system. 'Touch 'n Go eWallet' was accepted by more than 18,000 merchants in mid-2018. Tencent's mobile wallet, WeChat Pay MY, was introduced in Malaysia in 2018. Malaysia is the first foreign country outside China where local WeChat users can make payments at participating merchants and transfers in local currency through the mobile wallet. WeChat Pay MY at a launch event in March 2019 said that it had a merchant base of more than 3,500 and was looking to expand it further into truly local businesses and restaurants, which would boost cashless usage. WeChat Pay MY and Touch 'n Go eWallet also cater as payment solutions to Chinese tourists, Malaysia's ninth largest inbound market. A survey by the World Travel and Tourism Council showed that 90 percent and 66 percent of Chinese outbound travelers used Alipay and WeChat Pay, respectively, for their travel-related transactions.

### Box 1. Mobile Wallets in Malaysia (concluded)



**The growth of mobile wallets has been supported by regulatory efforts to develop the use of mobile payments in Malaysia.** BNM has a longstanding commitment to accelerate Malaysia's migration to e-payments, which is part of the Financial Sector Blueprint 2011-2020. The rise of mobile wallets has enabled non-bank mobile payment transactions in value and volume terms to surge to MYR1.3 billion and 31.1 million, respectively, in 2018 from just MYR240.3 million and 1.0 million in 2017. A key initiative to foster an enabling environment for mobile payments is the central bank's Interoperable Credit Transfer Framework (ICTF), which took effect on July 1, 2018. According to BNM, the ICTF aims to promote collaborative competition. Industry players (banks and non-banks e-money issuers) collaborate at the infrastructure level through a shared payment infrastructure, which intends to expand network reach and avoid the duplication of resources. Competition among players meanwhile takes place at the product level through the development of value-added features for end-users. Malaysia is also promoting interoperability by rolling out PayNet's Interoperable quick response (QR) payment scheme nation-wide. According to BNM, the scheme allows customers and merchants to make and receive payments seamlessly between each other at the point-of-sale regardless of the participating QR code payment provider or where their accounts are maintained.

**The authorities aim to raise wallet adoption through targeted transfers.** Budget 2020 announced the e-Tunai Rakyat initiative in which the government will offer a one-time MYR30 transfer to qualified Malaysians aged 18 and above with annual income less than MYR100,000. To be eligible for the transfer, an identity-verified e-wallet account with selected service providers is required. The Government will allocate up to MYR450 million to Khazanah Nasional to implement this digital stimulus, which will potentially benefit up to 15 million Malaysians. The authorities hope to significantly increase the number of Malaysians, participating merchants and SMEs that use e-wallets.

### Box 2. Examples of Malaysian FinTech Players

FinTech players in Malaysia operate in a range of areas. A few examples are:

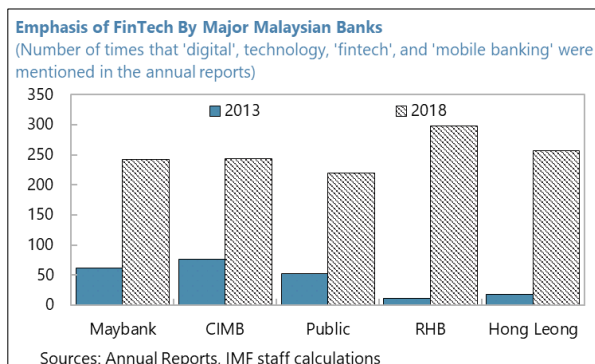
**CapitalBay (Deposits, lending and capital raising):** CapitalBay is a supply chain finance company established in 2016 and is one of the 11 P2P players that have been licensed by the SC. The company employs technology such as optical character recognition and machine learning to cost-effectively provide short-term finance to SMEs. CapitalBay focuses mostly on transactions that are too small for banks. Since starting operations in late-2017, CapitalBay has conducted approximately 1,500 transactions of over MYR100 million with zero defaults to date.

**MoneyMatch (Payments, clearing and settlement):** MoneyMatch aims to provide cross-border payments services at lower cost than incumbents. The company was founded in 2015 and its products were established in 2017. MoneyMatch has used the Ripple blockchain for transactions out of Malaysia. It is a graduate of the central bank's regulatory sandbox.

**PrimeKeeper (Market support):** PrimeKeeper, founded in 2015, provides a payment aggregator platform. In partnership with banks, the company enables users to manage multiple bank accounts on its mobile app for payment at merchants via their ATM pins and QR codes. The product is currently in the pilot phase.




**7. Facing competition from innovative startups, incumbent Malaysian FIs are increasing their digitalization efforts to raise efficiency, improve service, and prepare for challenges from new entrants and big-tech firms.** The increased focus on technology by Malaysian banks is apparent in their annual reports (see chart).

Banks have launched digital transformation plans to cater to the shifting of customer preferences and banking services towards electronic platforms such as mobile and away from traditional branches (Table 1). Banks are also striving to improve operational efficiency through technologies such as advanced analytics, automation and chatbots.<sup>6</sup>



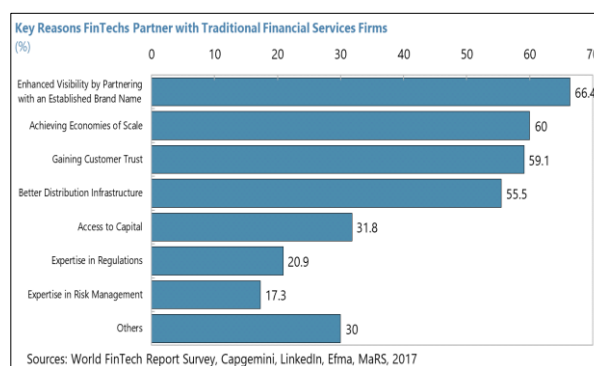
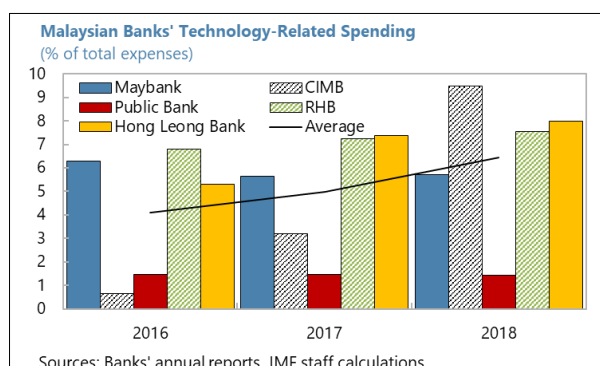
<sup>6</sup> 87 percent and 76 percent of Malaysian FinTech firms listed differentiation and cost reduction as the two main opportunities relating to the rise of FinTech in PwC's 'A Survey on FinTech in Malaysia' published in 2016.

Table 1. Malaysian Banks' Digital Initiatives

| Bank   | Select Digital Initiatives   |
|--|--|
|   | <b>2017:</b> Launched the Regional Collaborative FinTech Sandbox Platform; Released facial and voice recognition to its Maybank2u app.<br><b>2018:</b> Entered into partnership with Grab to drive usage of Grabpay; Launched "FutureReady" digital upskilling programme.  |
|   | <b>2017:</b> Set up CIMB Fintech unit to develop innovative banking solutions; Received regulatory sandbox approval from BNM for e-KYC.<br><b>2018:</b> Joined Ripple xCurrent Network to enable real-time payments for customers; Piloted an AI-powered, HR ChatBot service.  |
|   | <b>2017:</b> Partnered with Alipay to offer mobile wallet services.<br><b>To Date:</b> Launched PB Direct - online insurance application via iPad and Ask Sara - virtual assistant. Working closely with AIA Group, its bancassurance partner.   |
|   | <b>2017:</b> Introduced RHB Smart Account (digital account opening) and provided loan origination via chatbot.<br><b>2018:</b> Launched a number of new digital solutions including online mortgage app (RHB MyHome), SME online financing and digital sales tool for SMEs (iSMART).   |
|  | <b>2017:</b> Introduced Loan2Go - a straight-through-processing mobile auto loan application platform. Piloted in-branch mobile servicing solution through the use of iPads.<br><b>2018:</b> Launched Hong Leong Connect First (comprehensive online banking platforms for corporate, commercial and SME banking). Established first digital concept flagship branch, featuring Personalized Teller tablets and Teller Assisted Units. |

Sources: Annual Reports, Various News Sources, IMF staff.






**8. The top five Malaysian banks have increased their technology-related spending over the past three years.** Average technology-related spending as a share of overall expenses rose to 6.4 percent in 2018 from 4.1 percent in 2016. This was close to an estimated 6.5 percent average for ASEAN-5 but remained below levels by Singaporean banks, which spent an average of 13.2 percent of overall expenses on technology in 2018.



**9. Leading Malaysian FIs have sought to strategically partner with startups.**<sup>7</sup> (see Table 2)

Cooperation can potentially be mutually beneficial giving FIs access to the agility, creativity and talent of startups, while startups can leverage on banks' wider distribution networks, customer data and reputation. For example, in the insurance sector, 14 leading insurers and Islamic insurance (takaful) companies have partnered with Grab to offer usage-based motor insurance for its ride-hailing drivers, starting from August 2019. For banks, the World FinTech Report 2018 showed that FinTech companies partner with incumbent banks with the aim of enhancing visibility through the banks' established brand name. Bank-FinTech partnerships in Malaysia are helped by infrastructural enablers such as increased voluntary adoption of Open API<sup>8</sup> in the financial services sector, particularly around publicly available and product-related data.

**Table 2. Malaysia: Partnerships Between Malaysian Banks and FinTech Startups**

| Bank  | FinTech Startup   | Collaboration   |
|---|---|---|
|  |  | Strategic partnership to drive the acceptance and usage of cashless payment.  |
|  |  | Strategic collaboration to power instant cross border payments across the bank's ASEAN markets.                           |
|  |  | Made available personal loan applications on FinTech platform, powered by credit reporting agency RAM Credit Information. |

Sources: Annual Reports, Various News Sources, IMF staff.

## E. Regulatory Environment: Balance Between Innovation and Financial Stability

**10. Malaysian regulators—BNM, SC and the Malaysia Digital Economy Corporation (MDEC)—have so far struck an appropriate balance between promoting innovation in the FinTech sector and safeguarding financial stability.** Their approaches have been proactive.

Regulations have sought to promote a conducive environment for FinTech development by reducing barriers to innovation, developing supportive infrastructure, encouraging greater competition and room for experimentation within the sector, while ensuring financial stability and confidence in the financial system.

**11. BNM has a dedicated department 'Financial Development and Innovation' focusing solely on FinTech issues.** BNM established the Financial Technology Enabler Group (FTEG) in June 2016, with the goal to facilitate technological innovation and testing within the financial services sector. The FTEG encourages innovation by operating the regulatory sandbox (Box 3), undertaking outreach efforts to the industry, and coordinating and adapting regulatory measures with other

<sup>7</sup> 35 percent of FIs prefer joint partnerships with FinTech companies and they are the most widely used form of collaboration that was mentioned in PwC's 'A Survey on FinTech in Malaysia' published in 2016. Another PwC study in 2017 indicated that 82 percent of global banks, insurers and investment managers intend to increase their partnerships with FinTech firms over the next three to five years.

<sup>8</sup> BNM is working on an Open Banking framework and is looking to release a consultation paper in 2020.

regulators (see Table 3 for initiatives launched by various agencies). Additionally, MDEC, the government agency driving digital transformation and adoption since 1996, supports FinTech innovation through providing working spaces and collaborative initiatives. In addition to FinTech in conventional finance, there are also opportunities for FinTech in Islamic finance (Box 4). From a regulatory perspective, FinTech in conventional and Islamic finance tend to be subject to the same regulations given a function-based regulatory approach.

**12. Malaysia has been at the forefront of regulation to ensure the safety and soundness of the financial system amid the rapidly evolving FinTech landscape.** The rapid digitalization of the financial system increases cyber threats, which could threaten financial stability. Cyber security is among the top issues in the annual reports of major Malaysian banks as cyber-attacks could undermine customers' trust and result in a loss of confidence. Banks are adopting risk management measures and increasing investments to mitigate these threats. Cyber risks are also on top of regulators' minds, with BNM highlighting them in its Financial Stability Review First Half 2019. BNM has already set out basic guidelines for FIs on cyber security risk management through its policy on Risk Management in Technology. To better identify cyber risks, BNM and the financial industry are in the process of creating a 'Financial Threat Intelligence Platform' by 2020Q2. Cyber threats will be a key focus of this platform as it seeks to guard against threats through collation, analysis and dissemination of real-time information.<sup>9</sup> Additionally, the National Cyber Security Policy, which was first launched in 2006, was updated in late-2019.

**13. Regulators have been mindful of developments outside of the traditional regulatory perimeter that could pose financial stability risks.** Crypto assets could pose risks through insufficient liquidity, high volatility, opaque pricing, and outright fraud. In 2014, BNM clarified that digital assets are not legal tender in Malaysia and has reiterated its message in multiple press releases. The SC has also been regularly warning investors of the potential risks involved in ICO schemes and shut down an ICO in 2018.<sup>10</sup> The SC is adopting a phased approach to developing a regulatory framework for digital assets.<sup>11</sup> It has recognized digital currencies and tokens as securities subject to securities regulation and has set requirements for electronic platforms that aid with trading of these assets starting from January 2019. The SC has also conditionally approved three recognized market operators to establish and operate DAX beginning from June 4, 2019. Moreover, 19 DAX were not permitted to continue operations with effect from June 1, 2019. In 2017 and 2018, Malaysia took legislative and regulatory measures regarding AML/CFT considerations for certain types of activities in virtual assets (or crypto-assets). With regard to new lending areas developed by non-financial companies, the SC introduced regulatory frameworks for crowdfunding and P2P financing already in 2015 and 2016, respectively.

<sup>9</sup> This initiative was shared by BNM Governor Datuk Nor Shamsiah Mohd Yunus in her opening remarks at the inaugural MyFintech week and Financial Industry Conference hosted by the central bank in June 2019.

<sup>10</sup> The SC issued cease and desist order on January 19, 2018 to Singapore's CopyCash Foundation for violating existing securities regulation in its ICO.

<sup>11</sup> The SC has issued a public consultation paper on the Proposed Regulatory Framework for the Issuance of Digital Assets through Initial Coin Offerings as of March 2019.

### Box 3. BNM's FTEG FinTech Regulatory Sandbox

**BNM is among several authorities globally to introduce a FinTech regulatory sandbox framework to foster FinTech development.** FTEG's sandbox provides an opportunity for both FIs and FinTech firms (domestic and foreign) to operate and experiment in a live environment while containing risks. The sandbox was established on October 18, 2016. As of December 2019, 83 applicants have applied for the sandbox, with seven solutions approved for live-testing. One firm currently remains in the sandbox. The other six approved participants (comprising of two insurance aggregators, two e-remittance service providers, an e-KYC solution provider and a secured chat banking service) have completed live-testing. Post sandbox, the FinTech firms have either obtained the necessary regulatory approvals to commercialize, ceased operations or are exploring new technology partners to achieve more value from their solutions. Additionally, there are six applications in the preparation stage to conduct live-testing. To encourage more targeted and efficient testing for high-impact innovation, FTEG enhanced its sandbox framework in 2018 by introducing the 'Specialized Sandbox', adding specialized thematic tracks to the sandbox. For example, there is an e-KYC specialized sandbox currently with seven participant banks.

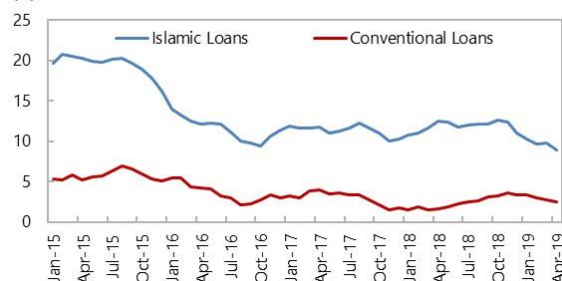
**FTEG adopts a transparent and structured approach starting from the assessment of the eligibility to participate in the sandbox to the determinants of success/failure in the testing phase.** To enter the sandbox, an applicant must demonstrate that its product, service or solution has the potential to improve the accessibility, efficiency, security and quality of financial services; enhance the efficiency and effectiveness of risk management of the financial sector; or address gaps in or open up new opportunities for financing or investments in the economy. The applicant also needs to produce a business plan that demonstrates a viable business model upon exiting the sandbox and demonstrate sufficient resources to go through the testing phase (limited to a one-year period). The sandbox incorporates safeguards to manage risks and consequences from failure, requiring the firm to identify the potential risks in areas such as financial stability, consumer protection and money laundering/ financing of terrorism. Interim and final reports help FTEG and the sandbox participants assess the viability of the innovation, address key issues before operating in an uncontrolled environment and mitigate risks.

### Box 4. FinTech and Malaysia's Vibrant Islamic Finance Landscape

**Malaysia is a leader in Islamic finance, which puts it in a strong position to harness Islamic FinTech opportunities.** Islamic bank loan growth expanded by 8.9 percent y/y in 2018, compared to 2.5 percent y/y for conventional banks. This brought Islamic loans to close to 32 percent of overall bank loans (2017: 30.2 percent). Malaysia is a leader in the global Islamic bond (sukuk) market, accounting for approximately half of total outstanding sukuk (USD 456.7 billion) globally. Saudi Arabia is a distant second largest at 12.6 percent market share. Takaful accounts for 10 percent of Malaysia's insurance market.

**Loan Growth By Category**

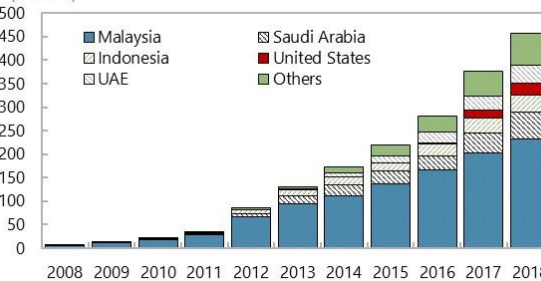
(% y/y)



Sources: Bloomberg, IMF staff calculations

**Sukuk - Cumulative Outstanding Amount**

(USD bn)



Sources: Bloomberg, IMF staff calculations

**FinTech can benefit Islamic finance similarly to conventional finance and some FinTech applications may be particularly useful in Islamic finance products.** Islamic FIs can harness many of the same

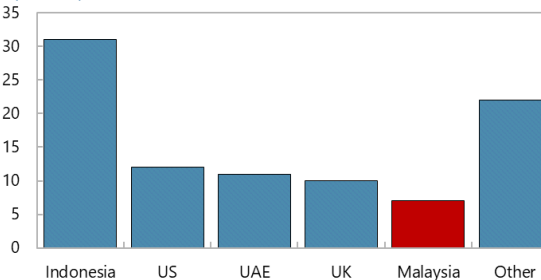
efficiency gains and service improvements that FinTech promises in conventional finance. For example, mobile banking, P2P lending, e-KYC and technologies such as artificial intelligence, big data, blockchain, cloud services and machine learning are all equally applicable in Islamic finance. Technologies such as blockchain could be particularly useful for Islamic finance players as they can improve transparency – a core principle of Islamic finance – and minimize risk through the improved movement and traceability of underlying assets and cashflows in real time. For sukuk, blockchain technology could for instance improve the tracking of payment streams from the issuing special purpose vehicle to investors and enhance oversight. Investments of Islamic endowment funds (Waqf) – involving charitable donations of cash and tangible assets such as buildings or land - could benefit from blockchain, which can track the lifespan of investments.

**Islamic FinTech is in its infancy in Malaysia, but BNM is supporting infrastructure to promote the sector.**

Malaysia is home to seven Islamic FinTech startups, according to DinarStandard's Islamic FinTech Report 2018. According to the report, around 70 percent of Islamic FinTech companies globally are focused on facilitating business and consumer financing through equity crowdfunding ECF and P2P lending. In this area, BNM launched the Investment Account Platform (IAP) - an Islamic crowdfunding platform for SMEs,

**Islamic FinTech Startups**

(Number)



Source: Islamic FinTech Report 2018



#### Box 4. FinTech and Malaysia's Vibrant Islamic Finance Landscape (concluded)

involving six Islamic banks - in 2016. An example of a private Islamic crowdfunding platform is Ethis Venture which is one of 10 ECF players licensed by the SC. According to IFN FinTech, Ethis Venture is eyeing to launch its platform by March 2020 to support domestic SME funding. SMEs and startups that raise funds through the platform must be shariah-complaint and the issuance of shares must be in line with Mudarabah – an Islamic contract in which one party supplies the capital and the other provides the expertise for investing in a pre-determined activity with a pre-determined profit sharing ratio.

**Malaysia's Islamic Finance's expansion will likely be spurred by FinTech, coupled with product and infrastructure development as well as regulatory support.** Islamic banks are likely to increase their investment in digitalization and technology to improve customer experience and raise efficiencies. For example, MBSB Bank Berhad and Bank Islam Malaysia Berhad, two major standalone Malaysian Islamic banks, previously committed increased investments to enhance their digital offerings in 2019<sup>1</sup>. Regulatory support for the development of Islamic finance more broadly should also benefit the application of FinTech in Islamic finance.

<sup>1</sup> News reports indicated that MBSB Bank Berhad's board approved MYR250 million for IT investments, while Bank Islam Malaysia Berhad is committing the same amount for digitalization.

<https://www.theedgemarkets.com/article/mbsb-bank-eyes-fundraising-grow-business-and-boost-capital>

<https://www.nst.com.my/business/2019/04/482557/mbsb-bank-investment-spree-realise-premier-islamic-bank-dream>

## F. Key Challenges

**14. Rapidly evolving technology is likely to bring multiple challenges to the financial sector.** Some of the key challenges faced by FIs and new FinTech players include: (1) talent shortage; (2) conforming to regulations; and (3) access to funding. In addition, profit margins of incumbent FIs could be squeezed by competition from start-ups and big tech firms. Meanwhile, regulators have to ensure an appropriate balance between innovation and financial stability and support the development of critical infrastructure.

- **Talent shortage:**<sup>12</sup> Malaysia is facing a shortage of talent in key technological areas relevant for FinTech such as machine learning and data analytics. Banks also need to equip their existing staff with essential technology skills through training initiatives. Furthermore, there is a rising demand for compliance talent by FinTech companies to meet regulatory requirements.

<sup>12</sup> 100 percent of Malaysian respondents felt that they have trouble hiring talent who meet the needs and growth of the industry in Ernst & Young's 'ASEAN FinTech Census 2018'. Talent was one of the most important enablers identified by respondents of PwC's 'A Survey on FinTech in Malaysia' published in 2016.

- **Conforming to regulations:**<sup>13</sup> Regulatory requirements are an important component of operating in the FinTech space. Regulators must strike a balance between ensuring financial stability and consumer protection, while promoting innovation and competition. To address the lack of regulatory acumen among FinTech industry players, BNM has spearheaded various initiatives. For example, BNM, in collaboration with SC and MDEC, conducts quarterly regulatory bootcamps with FinTech companies to improve their understanding of regulatory frameworks and developments. BNM is also working with MDEC to operationalize the FinTech Booster Program, aimed at providing guidance to promising FinTech solutions that are in the ideation stage and not yet ready for the market.
- **Access to funding:** The funding landscape of Malaysian FinTech startups has lagged some ASEAN peers and additional support to access funding channels may be needed according to an EY survey. Funding volumes for Fintech start-ups in Malaysia were relatively modest.<sup>14</sup> Conversations with local FinTech companies suggest difficulty in attracting later-stage funding in Malaysia.
- **Implementation of digital infrastructure:** Infrastructure such as digital identities and open APIs is needed to drive growth of FinTech and reduce barriers to entry for smaller players. The provision of this infrastructure often requires coordination among multiple government agencies. An example is the national digital identity initiative which falls under the jurisdiction of various government agencies. Its implementation therefore requires close collaboration among the authorities to ensure interoperability and applicability across industries.
- **Striking the right balance between encouraging innovation and ensuring financial stability:** A key challenge for Malaysian regulators is to strike a balance between reaping the benefits of FinTech and mitigating potential downside risks in both conventional and Islamic finance. Frequent refinements to regulations and supervision are required to keep pace with the highly dynamic nature of FinTech to balance benefits and risks.

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<sup>13</sup> 45 percent each of Malaysian respondents stated that they find it moderately difficult or difficult to conform to local regulations, respectively, in Ernst & Young's 'ASEAN FinTech Census 2018'.

<sup>14</sup> UOB research showed that Singapore attracted USD222 million in FinTech funding in the first 10 months of 2018, compared to USD13 million in Malaysia.

**Table 3. Malaysia: Initiatives and Regulations in Malaysia**

| Initiatives |   |  |
|-------------|---|--|
| Date        | Initiative  | Description  |
| Sep-15      | Alliance of FinTech Community (afFINity@SC)   | Established by the SC to accelerate growth and innovation in FinTech; Conducts sessions to listen to ideas and provide investor education  |
| Jun-16      | BNM's Financial Technology Enabler Group (FTEG)   | The FTEG facilitates innovations that will improve the quality, efficiency and accessibility of financial services in Malaysia. Comprising of cross functional group within BNM, the FTEG is responsible for formulating and enhancing regulatory policies to facilitate the adoption of technological innovations in the Malaysian financial services industry  |
| Oct-16      | FinTech Association of Malaysia   | A private sector initiative aimed to serve as the industry's enabler and platform to grow Malaysia to be a leading hub for FinTech innovation and investment in the region. Members include conventional and Islamic Finance players   |
| Sep-18      | Digital Finance Innovation Hub and Inclusive FinTech Accelerator  | The Digital Innovation Hub was launched by BNM, United Nations Capital Development Fund (UNCDF) and MDEC. It is aimed at meeting the financial needs of the low-income segment of the population, with a focus on enabling service providers (including financial institutions and fintech start-ups) to use technology in promoting inclusive finance and building a community of innovative and resourceful developers |
| Nov-18      | Project Castor  | Launched by the SC to test and research the feasibility of using blockchain technology for the underlying market infrastructure for unlisted and OTC markets, aiming to improve transparency and efficiency  |
| 2019        | Orbit FinTech Hub   | Co-working space licensed by the MDEC to encourage FinTech activity  |
| Regulations |   |  |
| Issued Date | Framework   | Description  |
| Feb-15      | Equity Crowdfunding (ECF) Framework   | Introduced requirements for the operations of ECF platform, type of participants and who can seek funding. ECF platforms are supervised by the SC  |
| May-16      | Peer-To-Peer (P2P) Lending Framework  | Provided guidelines to the type of issuer and investor who can participate in P2P. P2P players are supervised by the SC  |
| Oct-16      | Bank Negara Malaysia Financial Technology Regulatory Sandbox (Sandbox)                                  | Promoted the testing and experimentation of FinTech solutions in a live environment, but subject to appropriate regulatory requirements and parameters. The sandbox is monitored by FTEG within BNM  |
| May-17      | Digital Investment Management Framework   | Set out licensing and conduct requirements for the offering of automated discretionary portfolio management services to investors  |
| Nov-17      | Anti-Money Laundering and Counter Financing of Terrorism (AML/CFT) - Money Services Business (Sector 3) | Set out minimum requirements and standards that an approved remittance service provider must meet when onboarding and maintaining customers using e-KYC  |
| Feb-18      | Anti-Money Laundering and Counter Financing of Terrorism (AML/CFT) – Digital Currencies (Sector 6)      | Set out minimum requirements and standards that a reporting institution must observe to improve the transparency of digital currencies relating to AML/ CFT. Reiterated that digital currencies are not recognized as legal tender in Malaysia   |
| Mar-18      | Interoperable Credit Transfer Framework (ICTF)  | Issued credit transfer guide for bank and non-bank electronic money (e-money) issuers to foster an efficient, competitive and innovative payment landscape   |
| Dec-18      | Policy Document on Outsourcing  | Set out requirements for outsourcing arrangements, including cloud services, to address risks such as data accessibility, confidentiality, integrity, sovereignty, recoverability and regulatory compliance  |
| Jan-19      | Policy Document on Publishing Open Data using Open API  | The policy document serves as a guidance to the industry in publishing Open Data APIs, including open data API standards, API architecture standards and third party governance process.   |
| Jan-19      | Order under Capital Markets and Services Act  | Recognition of digital currencies and digital tokens as securities   |
| Jan-19      | Revision to Guidelines on Recognized Markets  | Added a new chapter to set out the requirements for electronic platforms that facilitate the trading of digital assets   |

Sources: Regulatory websites, Various news sources, IMF staff.

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