HONG KONG MONETARY AUTHORITY
香港金融管理局

Report on the

Review of Virtual Banks

6 August 2024

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I. INTRODUCTION

1. The introduction of virtual banks (VBs) in the Hong Kong banking sector was one of the key initiatives announced by the Hong Kong Monetary Authority (HKMA) in September 2017 in transforming Hong Kong into the smart banking era. The VB initiative aims to achieve three policy objectives in Hong Kong, namely:

(a) promoting fintech and innovation;
(b) offering new customer experience; and
(c) promoting financial inclusion.

2. Following the issuance of a revised "Guideline on Authorization of Virtual Banks" in 2018, the HKMA granted banking licences to eight VBs as listed in Table 1 below after going through a rigorous approval process. Subsequently, the eight VBs commenced businesses officially at different times over the period from March to December 2020, and expanded their scope of banking business gradually thereafter. Some of the VBs had also commenced provision of wealth management and insurance intermediary services, with six VBs being Registered Institutions engaging in securities business and three VBs being Licensed Insurance Intermediaries as of end-July 2024.

Table 1 : Overview of VBs *(in alphabetical order)*

		Date of Bank Licence Approval	**Date of Official Business Launch**
1.	Airstar Bank Limited	May 2019	June 2020
2.	Ant Bank (Hong Kong) Limited	May 2019	September 2020
3.	Fusion Bank Limited	May 2019	December 2020
4.	Livi Bank Limited	March 2019	August 2020
5.	Mox Bank Limited	March 2019	September 2020
6.	PAO Bank Limited (formerly known as Ping An OneConnect Bank (Hong Kong) Limited)	May 2019	September 2020
7.	Welab Bank Limited	April 2019	July 2020
8.	ZA Bank Limited	March 2019	March 2020

3. The global outbreak of the COVID-19 pandemic in 2020 had tremendous impact on the operating environment of the banking sector in Hong Kong. It presented a mix of opportunities and challenges for VBs. On the one hand, it had significantly changed the public's habit of using physical bank branches, obtain banking services, and handle cash. With the need to reduce the risk of contagion through physical contact, bank customers increasingly turned to digital financial services, and VBs provided a convenient and safe channel for customers to manage their finances. This shift in consumer behaviour created a favourable environment for the long-term development of VBs.

4. On the other hand, the pandemic had caused unprecedented economic challenges globally, such as impact on service industries, disruption to supply chains, increase in unemployment rates, and reduced consumer spending. Amid the market uncertainties, some customers became more risk-averse and cautious in trying out services provided by new banking entities. Some customers also reduced their demand for banking products and appetite for investments and other financial services. The social distancing measures during the pandemic also created challenges to the VBs in carrying out service launch as well as branding and promotion activities, making it difficult for them to reach out to customers (e.g. activities aiming at helping prospective customers to install the VB applications onto the mobile phones and guiding them through the new service applications). Coupled with the generally negative sentiment in the community under the pandemic, all these factors had a negative impact on the launch and expansion plans of VBs.

5. With the pandemic subsiding in 2023 and market returning to normalcy locally and globally, and all the eight VBs having launched their businesses for several years, the HKMA considered it an opportune time to carry out a review of VB in 2024 (the "Review") to look into the operations of the VBs and their impact on the Hong Kong banking system.

6. This report sets out the results of the Review, which aims to:

(a) assess how well the three policy objectives of introducing VBs to Hong Kong have been delivered so far;

(b) review the level of market acceptance, business and financial performance, and user response of VBs since their inception;

(c) discuss the challenges facing VBs and the HKMA's policy initiatives to support their development; and

(d) recommend the next steps for further development of the VB industry.

II. EXECUTIVE SUMMARY

7. The Review assessed the operation and performance of the VBs in terms of their fulfilment of the three policy objectives (namely, promoting fintech and innovation; offering new customer experience; and promoting financial inclusion), their level of market acceptance, their business and financial performance, and the response of the users in personal and small and medium-sized enterprise (SME) segments vis-à-vis general banking products and wealth management services.

8. In term of **fulfilment of the three policy objectives of VBs**, the Review notes that the launch of VBs in Hong Kong has contributed positively to the banking sector's fintech adoption and innovation. VBs introduced innovative business and operating approaches through adoption of emerging technologies in product and service offerings, such as remote on-boarding, flexible time deposits, tailored loan products and expedited loan approvals, and special payment card features. The ecosystem becomes more active with incumbent retail banks also accelerating their own digital transformation. Furthermore, the innovative products and services by VBs have brought about new customer experience and helped further promote a customer-centric culture across the banking sector. Indeed, according to a survey commissioned by the Virtual Banking Education Taskforce set up by The Hong Kong Association of Banks (the "HKAB Survey") in February 2023, there was positive feedback with the majority of individual and SME customers having considered the VBs as innovative and convenient. In addition, VBs have had a positive impact on financial inclusion by removing minimum balance requirements and offering more accessible financing options, especially for small businesses and individual borrowers.

9. In terms of **market acceptance**, since the official launch of the eight VBs in 2020, they have seen growing acceptance, evidenced by a robust growth in the number of depositors, amount of customer deposits, as well as loans and advances. As at the end of 2023, the VBs had a total number of 2.2 million depositors. The collective market shares of VBs among all retail banks in Hong Kong in terms of total number of depositors increased notably to 8.8% in 2023, indicating strong customer acquisition. However, the VBs have yet to translate this momentum into higher business volumes. Their collective market shares among all retail banks in Hong Kong, in terms of customer deposits, loans and advances, and total assets, was relatively small at around 0.3% at the end of 2023. The divergence of VBs' smaller share of business (in terms of customer deposits, total assets and total loans) versus their higher share of total number of depositors suggests opportunities for VBs to further enhance customer engagement and encourage active usage of their various banking products and services.

10. In terms of **business and financial performance**, VBs experienced delay in launching their business mainly due to the outbreak of COVID-19 pandemic in early 2020. After becoming operational during 2020, the widespread disruption caused by the COVID-19 pandemic and the worsening of the economic environment in the following years rendered it difficult for VBs to conduct promotion activities, acquire customers and launch new products as originally planned. As a result, it took VBs longer than expected to achieve their projected growth and profitability. While none of the eight VBs was able to achieve profitability as at the end of 2023 in the light of various headwinds, VBs recorded moderate business growth over the past three years, with total assets reaching HK$49.9 billion, total loans and advances of HK$19.5 billion, and customer deposits of HK$37.5 billion at the end of 2023. Their operating performance continued to improve, with aggregate operating income increasing seven-fold and net losses narrowing by 15% from FY2021 to FY2023.

11. In terms of **general banking products**, all VBs remotely open accounts and offer a range of general personal banking services, such as savings and time deposits, local fund transfers, personal loans, payment card services, and foreign exchange. Individual VBs have strategically focused on different market segments, with some specialising in personal banking services and others primarily serving SME customers. In respect of personal banking, loan services had recorded significant growth, with the average number of loans and advances drawdown per quarter increased significantly by about 90% during the period from FY2021 to FY2023. The total amount of deposit from personal customers of the eight VBs increased by 47% during the same period. In respect of the SME segment, six VBs had launched SME banking business as at the end of 2023. Similar to personal banking, loan services for SME banking had recorded a robust growth with the average number of loans and advances drawdown per quarter increased by about 150% in FY2021 to FY2023. The total amount of deposit from SME customers increased by about 150% during the period from FY2021 to FY2023.

12. In terms of **wealth management and insurance-related activities**, since 2022, some VBs have expanded into securities and/or insurance intermediary businesses to widen their service offerings, providing sale and distribution of collective investment schemes as well as life insurance, general insurance and stock trading services to customers. As of end-July 2024, six out of the eight VBs are Registered Institutions engaging in securities business and three VBs are Licensed Insurance Intermediaries. Although the VBs are in their early stage of development, the wealth management services provided by some VBs received positive response from customers, with the total number of wealth management accounts growing by more than 140% and total market value of clients' investment portfolio increasing seven-fold in 2023. On the other hand, the scale of VBs' insurance intermediary business is currently small and developing.

13. The HKMA has been supportive of the development of banks including VBs through various initiatives. For instance, the Fintech Supervisory Sandbox (FSS) process had been streamlined since December 2022 to facilitate a faster and smoother access for testing new technology solutions, enabling early supervisory feedback to facilitate speedier rollout of new fintech products and services. In addition, enhancements have been introduced to the financial data infrastructure (e.g. Commercial Data Interchange) as well as launching the pilot programme of Interbank Account Data Sharing, with a view to enabling digitalisation of banking operations and facilitating greater use of data by banks in innovating products and services. Having regard to the recent developments in the digital asset space, a risk-based approach, which is equally applicable to both incumbent banks and VBs, has been adopted to supervise the digital asset-related activities of the institutions. The implementation of these policy initiatives has provided an environment conducive to banking development.

14. In light of the recent developments of the VBs, such as increasing exposures to and dealings with business entities, including the digital asset-related sector and the Web3 ecosystem, the current requirement that a VB should primarily deliver retail banking services is considered no longer appropriate or necessary and will therefore be removed.

15. Looking ahead, VBs are well-positioned for continued growth by leveraging their agility and customer-centric approach. With incumbent banks undergoing digital transformation, the rising tide of digital innovation across the banking sector will raise customer expectations and financial inclusion overall. Competition among the existing eight VBs will also drive innovation and product refinement, as they continue to invest in technology and prioritise customer experience. With the diversity of VBs and incumbent banks, there is not any strong justification to introduce more new VB players to the market at this juncture, and doing so is unlikely to be conducive to the healthy development of the sector.

16. Overall speaking, the development of VBs in Hong Kong has thus far achieved the three policy objectives of introducing virtual banking. Virtual banking, the innovative banking model driven by the adoption of technology, is gaining wide market acceptance in Hong Kong. The products and services offered by the VBs have also received positive response. Some of them have already demonstrated good growth momentum and are progressing steadily towards profitability through continuous service innovations, whereas some have undertaken a major shift in business strategy or group restructuring initiatives with an aim to enhancing their business performance, thereby accelerating the pace to profitability. The HKMA considers that the current structure of the VB sector should be maintained with a view to facilitating long-term development of VBs as well as maintaining a healthy competitive landscape in the banking industry.

17. The HKMA will continue to monitor the operations and development of the eight VBs and provide guidance in the process of their development of new products and services, and provide policy clarity as and when necessary.

18. In the meantime, the HKMA will consult the public on a proposal to rename "Virtual Bank" as "Digital Bank". It is expected that the proposed new name can better reflect the banking model of VBs.

III. THE REVIEW

Fulfilment of the three policy objectives

19. In 2017, the Hong Kong Monetary Authority (HKMA) unveiled seven initiatives aimed at preparing Hong Kong to move into a New Era of Smart Banking. One of the initiatives is to facilitate the establishment of VBs in Hong Kong. It was believed that as VBs would operate in a different model of service delivery and normally target small customers, be they individuals or small and medium-sized enterprises (SMEs), VBs would help promote financial inclusion. Further, the emergence of VBs in Hong Kong was expected to provide additional impetus to the application of fintech in Hong Kong. Recognising the technological innovations and rising aspirations of customers for more personalised and integrated services, VBs were expected to offer a new kind of customer experience in mobile and digital banking.

(i) Promotion of fintech and innovation

20. Based on the experience in the past four years, the launch of VBs has contributed positively to fintech adoption in the Hong Kong banking sector. This assessment is based on the progress made by the eight VBs in fulfilling the policy objective of promoting fintech development since their commencement of business, making reference to the result of a survey commissioned by the Virtual Banking Education Taskforce set up by The Hong Kong Association of Banks (the "HKAB Survey") in February 2023, the fintech adoption plans submitted by the VBs when they launched business, utilisation of the Fintech Supervisory Sandbox (FSS) of the HKMA[1] by the VBs as compared with the incumbent banks, as well as various new fintech initiatives launched by the VBs.

21. Since VBs commenced business in 2020, they have been actively adopting fintech to offer innovative banking services and deliver them with higher operational efficiency than conventional means of service delivery. Between March 2019 and December 2023, VBs completed testing of over 100 initiatives, or more than 40% of the total cases under the FSS, reflecting VBs' active role in exploring and promoting fintech development within the banking sector.

22. In particular, the unique business model of delivering banking services primarily through internet/electronic channels without physical branches, coupled with the advantage of starting without the burden of legacy systems, has well-positioned VBs to adopt new fintech solutions extensively. Examples of fintech adoption cases by VBs include remote on-boarding of customers, hosting

1 The HKMA launched the Fintech Supervisory Sandbox in 2016 with an aim to expedite the launch of new technology products by banks in partnership with technology firms.

banking systems and data in cloud computing platforms, advanced data analytics for credit approval and fraud detection, and early exploration of digital assets-related initiatives (e.g. non-fungible tokens (NFTs), e-HKD pilot) in collaboration with various technology companies.

23. These developments have also had a positive impact on promoting constructive competition in the banking sector in Hong Kong, with incumbent banks also accelerating their digital transformation. For instance, as of end-December 2023, the number of incumbent banks providing remote account opening option doubled to 18 in four years. The success of VBs in launching certain innovative products (e.g. near real-time loan approval using alternative data, gamification of time deposits) have also encouraged incumbent banks to develop more sophisticated uses of fintech for better banking services and customer experience.

(ii) New customer experience

24. The launch of VBs has achieved the policy objective of improving customer experience. Since their launch of business in 2020, VBs have introduced a range of new products and services targeting new customer experience. These include convenient remote on-boarding for personal and SME customers, flexible time deposit options, and upfront interest payments for time deposits. In terms of lending, some VBs utilise alternative data from business partners to expedite loan approvals for SMEs. They also offer tailored loan products for customers of offline merchants, innovative consumer credit products with various custom-made options like "buy-now-pay-later (BNPL)" products, salary-linked personal loan products, deposit-linked personal loan products, etc. In the realm of payment card services, some VBs are among the first in the banking sector to provide combo cards with both debit and credit functions, as well as "numberless" physical cards for enhanced security. Additionally, some VBs are early providers of other innovative services such as banking for Web3 players, participation in e-HKD trials, integration with e-Wallets, robo-advisors for personalised investment recommendations, collaboration with affiliated e-Wallet platforms, banking services for visitors to Hong Kong, QR code payments and cash withdrawals, and gamification elements within their services.

25. Services and mobile apps of VBs in Hong Kong have garnered recognition both locally and globally. The mobile banking apps of some Hong Kong VBs were ranked among the global top 10 digital banking apps in a 2023 study by an international strategy consulting firm. According to the HKAB Survey, over 70% of the 1,000 individual respondents and over 90% of the 200 SME respondents considered VBs innovative and convenient with technology-enabled advanced services. Finally, the success of the operating models and technology platforms of some VBs have also enabled their parent groups to replicate their setup to establish digital banks in other jurisdictions.

(iii) Promotion of financial inclusion

26. VBs have delivered a positive impact on financial inclusion. The fact that VBs do not charge low-balance fees or maintain minimum balance requirements generated positive market dynamics, with several major incumbent retail banks in Hong Kong having removed their minimum account balance requirements or low-balance fees for various types of personal accounts before commencement of business of VBs in 2020.

27. Furthermore, documentation for loan applications has been streamlined through the use of technology, and financing can now be provided to more borrowers, such as small businesses with small turnover and often without financial statements. According to a paper "Virtual banking and beyond" (Paper No. 120) issued by the Bank for International Settlements in January 2022, the average SME loan size from VBs is substantially lower than that from the incumbent banks depending on the loan purpose and financial strength of borrowers. As for individual borrowers, the average loan size of personal loans of incumbent banks is around HK$250,000, whereas the average credit limits offered by VBs using credit assessment models are in the range of HK$40,000 to HK$110,000. All these are indicators of positive impact of VBs on financial inclusion.

Level of market acceptance

28. Acceptance of VBs has been growing since their official launch in 2020, as evidenced by the robust growth in the number of depositors, total deposits, loans and advances as shown in Table 2 below.

Table 2 : Market acceptance of VBs

	End-2020	**End-2021**	**End-2022**	**End-2023**	**Compound annual growth rate between 2020 and 2023**
Total number of depositors (million)	0.4	1.3 (+225%)	1.9 (+46%)	2.2 (+16%)	77%
Total deposits (HK$ billion)	15.8	25.3 (+60%)	30.4 (+20%)	37.5 (+23%)	33%
Total loans and advances (HK$ billion)	1.3	6.3 (+385%)	16.4 (+160%)	19.5 (+19%)	147%

Source: HKMA

29. Increasing market acceptance towards VBs had also been recorded from the HKAB Survey. About 45% of the individual respondents owned VB accounts and another 30% of the respondents had the intention to open a new VB account in the next three months at the time of the HKAB Survey. Increased efficiency, branding and reputation, high deposit rate and rebates were cited as the top three elements that would entice SMEs to open VB accounts under the Survey. Over 70% of surveyed individuals perceived VBs as innovative and convenient. The perception towards VBs was even more positive among the SME respondents, with 76% possessing VB accounts and over 90% considering VBs as convenient and efficient. Further, most of the surveyed individuals (79%) and SMEs (90%) perceived that the introduction of eight VBs helped to increase healthy competition in the market and increased available banking options, and have brought new and innovative banking services to consumers.

30. In addition, according to the HKAB Survey, the public have good understanding of VBs. More than 70% of the individuals and SMEs respondents were aware that VBs are licensed and regulated by the HKMA as with the incumbent banks. The HKMA also noted an increasingly better understanding of VBs by the public over the past three years, evidenced by the decrease in the number of public enquires received on the licence status of VBs and depositor protection for customers of VBs.

Business and financial performance

31. VBs encountered challenges in their early stage of development, with the launch of their operations unexpectedly delayed mainly due to the outbreak of COVID-19 in early 2020. Even after becoming operational during 2020, the widespread disruption caused by the COVID-19 pandemic and the worsening of the economic environment in the following years rendered it difficult for VBs to conduct promotion activities, acquire customers and launch new products as originally planned. As a result, it took VBs longer than expected to achieve their projected growth and profitability.

(i) Balance sheet size

32. Despite facing challenges during the initial stage of business launch mentioned above, VBs recorded moderate business growth over the past three years.

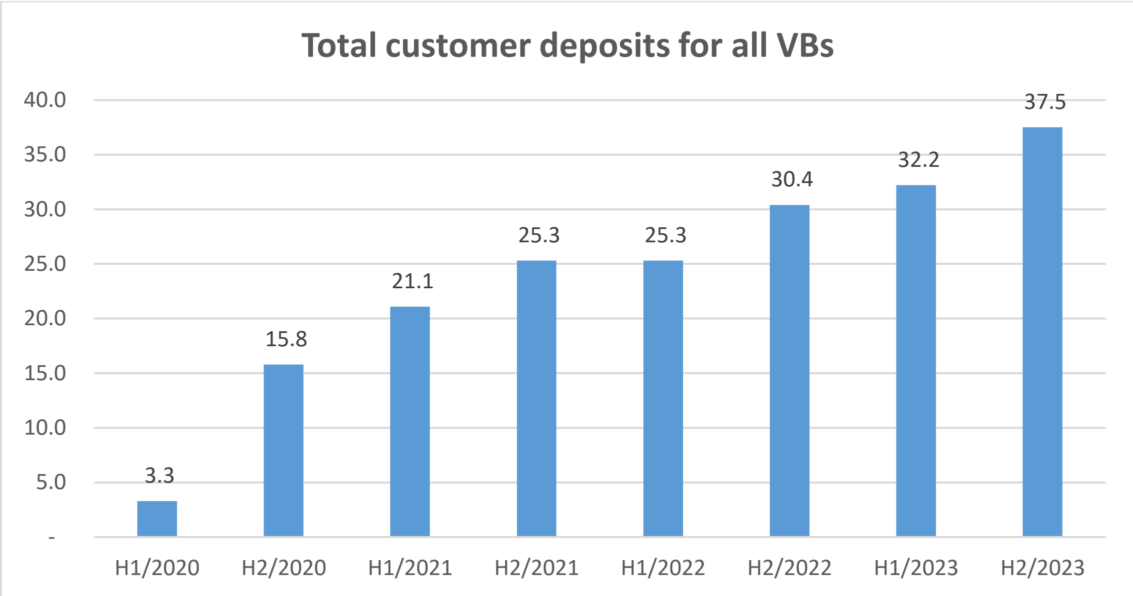
33. In terms of assets, the eight VBs had total assets of HK$49.9 billion as at the end of 2023 (up 23% year-on-year) and total loans and advances of HK$19.5 billion (up 19% year-on-year). In terms of liabilities, the eight VBs had total customer deposits of HK$37.5 billion as at the end of 2023 (up 23% year-on-year) and total capital and reserves of HK$9.4 billion (up 16% year-on-year).

34. As at end-2023, the assets of the VBs were mainly represented by investment in securities (42%), loans and advances (39%), and due from banks (10%). In respect of asset quality, the classified loan ratio of the eight VBs at end-2023 was 1.45%, slightly lower than the classified loan ratio of the banking sector of Hong Kong (1.56%).

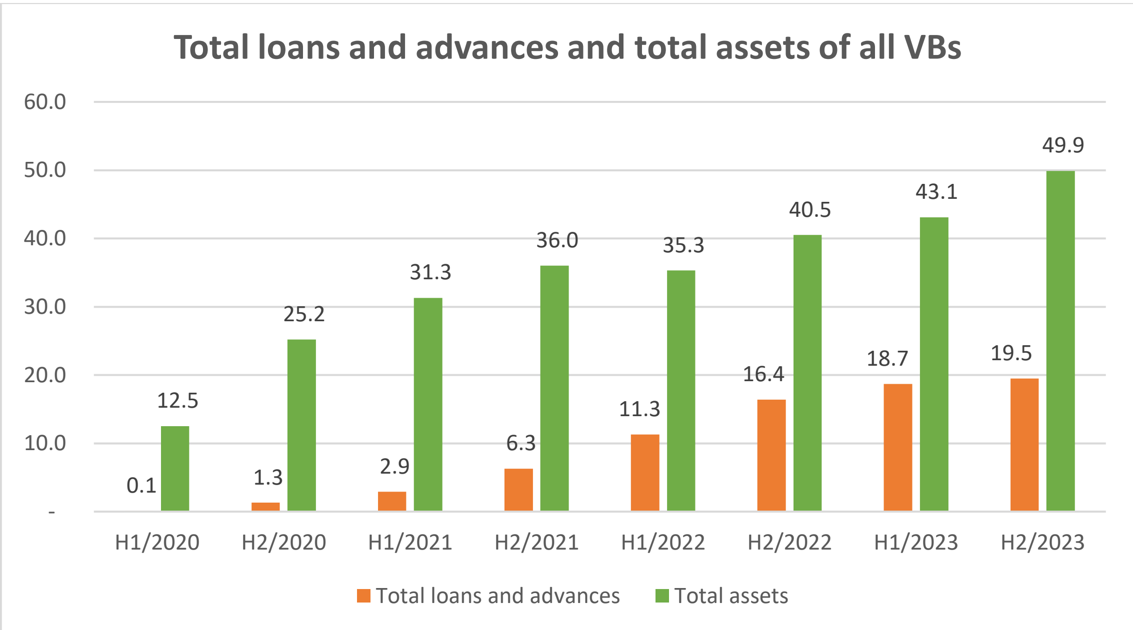
35. In terms of capital, all VBs maintained regulatory ratios well above the minimum requirements over the past three years, although their ratios varied widely due to their different business models. At the end of 2023, the total capital ratio of VBs ranged from 20% to 107%.

Chart 1 : Key balance sheet items of all VBs from Jun-2020 to end-2023

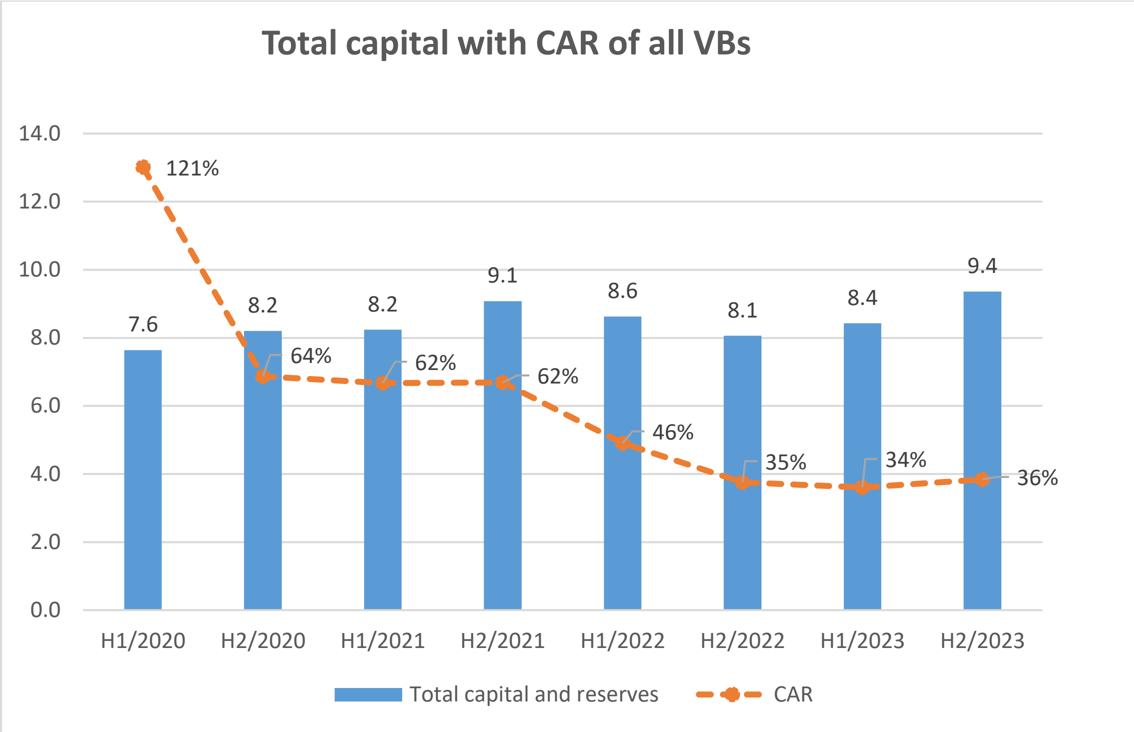
1a : Customer deposits (HK$ billion)



1b : Loans and advances and total assets (HK$ billion)



1c : Total capital and reserves (HK$ billion) and Capital Adequacy Ratio (CAR)



(ii) Profitability

36. Overseas experiences showed that the path to profitability for digital-only banks is typically a multi-year process. In the United Kingdom, the three leading challenger banks took an average of over six years to achieve profitability. In Germany, one of the largest digital banks projected that it would achieve profitability in the second half of 2024, i.e. taking it eight years to achieve profitability.

37. With only a few years into operations and amid challenges posed by the outbreak of the COVID-19 pandemic and macroeconomic uncertainties, the eight VBs have yet to achieve profitability. Nevertheless, the aggregate operating performance of VBs has shown continuous improvement. The aggregate operating income of all VBs increased seven-fold from HK$180 million in FY2021 to HK$1,260 million in FY2023. Accordingly, their total net losses narrowed by 15% during the same period.

38. Net interest income constituted the major income source of all VBs in the past three years, representing 85% of total operating income in FY2023 (61% in FY2021 and 77% in FY2022). The net interest margin of the eight VBs increased from 0.36% in FY2021 to 2.54% in FY2023, partly due to the higher interest rate environment.

39. Since 2022, a few VBs have launched wealth management and/or insurance intermediary business activities. While the fees and commission income arising from such regulated activities still accounted for a small portion of these VBs' total operating income in 2023, the contribution of such income is on a rising trend.

(iii) Market shares

40. In their initial years of operation, VBs focused on acquiring new customers and building up a sizeable user base by offering attractive deposit rates and rewards to customers. Their market shares among all retail banks, in terms of total number of depositors, increased notably to 8.8% in 2023, indicating that they had been gaining momentum in customer acquisition over the past three years. Nonetheless, VBs had yet to translate this momentum into higher business volumes. The collective market shares among all retail banks in terms of customer deposits, loans and advances and total assets was relatively small, standing at about 0.3% at end-2023 (up about 0.1 percentage point compared with end-2021 and end-2022). In terms of total capital and reserves, VBs' market share maintained steady at around 0.7% at end-2023 (end-2021: 0.7%; end-2022: 0.6%).

41. Similarly, VBs had started to gain traction in their market penetration in respect of their wealth management and insurance intermediary businesses, but had yet to monetise it. At end-2023, the number of wealth management accounts opened with VBs represented about 3.1% of those opened with retail banks, up from 1.3% at end-2022. However, VBs' total fee and commission income arising from wealth management activities accounted for a small 0.01% of the retail banks' aggregate fee and commission income in 2023. In respect of insurance intermediary business, the number of insurance policies for long term business and general business distributed by VBs at end-2023 accounted for 1.6% and 0.3% of total policies distributed by all retail banks, whereas due to their focus on insurance product types with lower premiums, the insurance premiums of new policies received by VBs for long term business and general business in 2023 accounted for only 0.3% and 0.05% of the aggregate premiums of all retail banks respectively.

(iv) Operational performance

42. Some VBs encountered teething issues and intermittent system disruptions during their initial operations. The majority of these incidents however involved only system stability issues without causing real impact on customer interests.

43. The HKMA attached great importance to these incidents and requested the banks concerned to promptly identify the root causes and remediate these issues. With subsequent enhancements in systems and controls, the number of IT-related and non-IT operational incidents reported by the VBs to the HKMA declined to a low level. Over the past three years, the average number of incidents (including both IT-related and non-IT operational incidents) per year was about two for each VB. Furthermore, conduct-related incidents of VBs remained at a very low level up to the end of 2023.

User response

44. Individual VBs have strategically chosen their respective areas of focus, with some concentrating on personal banking services and some mainly serving SMEs.

45. All VBs offer general personal banking services. They open accounts remotely and their major types of personal banking services include savings and time deposits, local fund transfer (including fund transfer via the Faster Payment System (FPS), electronic Direct Debit Authorization (eDDA), merchant bill payment), personal loans, payment card services (including credit and debit cards) and foreign exchange. Six out of the eight VBs also offer SME banking services, with major services being savings and time deposits, local fund transfer and SME lending (clean loans and guaranteed loans under the SME Financing Guarantee Scheme).

46. Some VBs are also providing securities and/or insurance intermediary services to widen their service offerings, including sale and distribution of collective investment schemes as well as life insurance, general insurance, and stock trading services, etc. As at the end of July 2024, six out of the eight VBs are Registered Institutions i.e. engaging in securities business and three VBs are Licensed Insurance Intermediaries.

47. According to the HKAB Survey, among the individual respondents who owned a VB account, 63% used the account for deposit or savings, 49% for credit card or debit card services, and 45% rewards such as cash rebates and free gifts. As for the SME respondents that had a VB account, 38% used the account for deposit or savings, 28% each for investment funds and money transfer.

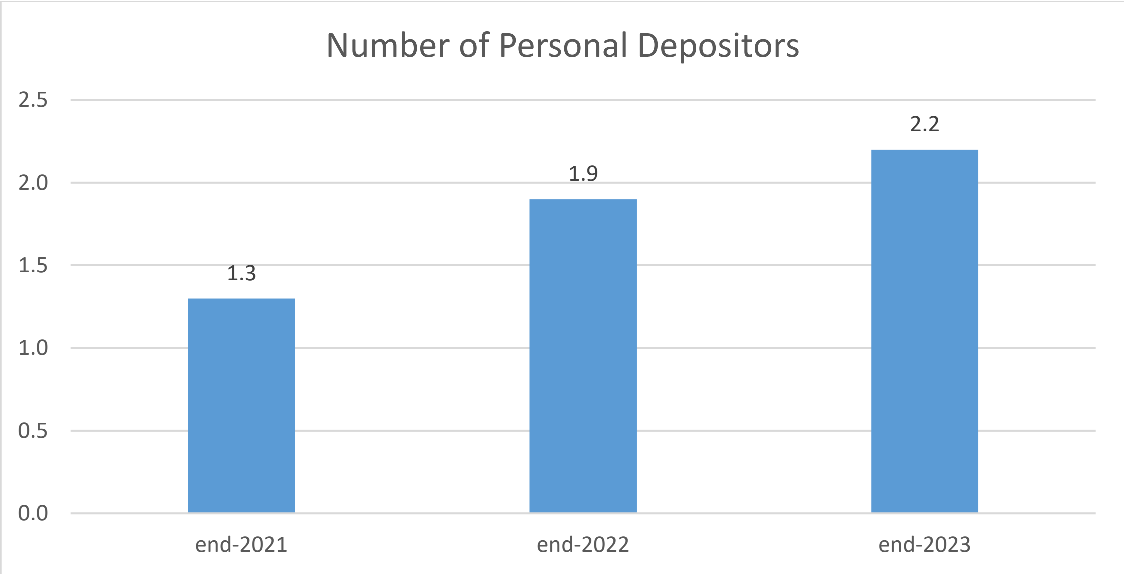
48. VBs received positive user response on their products and services. The HKAB Survey revealed that VBs had a very good user response among the SME respondents. 99% of these respondents would recommend VBs to their business contacts, with top reasons being convenience, usefulness and responsive customer service of the business banking services of VBs. Further, 87% of these respondents also owned personal VB accounts. Likewise, 89% of the 1,000 individual respondents would promote the use of VBs to others, attributing their satisfaction to the convenience and benefits of VBs. In addition, utilisation of loan services, by both individual and SME customers exhibited strong growth over the past three years. Although the VBs are at their early stage of development, their wealth management services have received positive response from customers.

Personal banking

49. In respect of personal banking, VBs had registered strong expansion in customer adoption and market penetration over the past three years, evidenced by their sharp increase in the number of depositors from about 1.3 million at end-2021 to 2.2 million at end-2023.

50. Nonetheless, as mentioned in the paragraph 40 above, VBs had yet to translate their expansion in customer base into higher business volumes, suggesting opportunities for VBs to further enhance customer engagement and encourage those personal customers who are maintaining low balance in their accounts or conducting very few transactions to have active usage of the various banking services of VBs.

Chart 2 : Number of personal depositors from 2021 to 2023 (in million)



51. There was a higher utilisation of loan services than deposit-taking services. Among VBs that offered loans and advances to personal customers (not including those that offered "buy-now-pay-later (BNPL)" products which are of a different nature from general unsecured personal loans), the average number of loans and advances drawdown per quarter increased significantly by about 90% during FY2021 to FY2023. Besides, the total amount of deposit from personal customers of the eight VBs increased by 47%.

52. At end-2023, four VBs issued debit cards and/or credit cards services to customers. The total number of debit and credit cards issued increased from about 1.6 million at end-2021 to about 2.8 million at end-2023, indicating an increased adoption of VBs' payment channels by customers.

SME banking

53. At end-2023, six VBs had launched SME banking business and there had been a notable growth in the number of SME customers. The majority of SME customers were active customers and the total amount of deposit from SME customers increased by about 150% during FY2021 to FY2023. Besides, the average number of loans and advances drawdown per quarter also increased by about 150% during the period.

Wealth management and insurance intermediary

54. VBs have gradually expanded their offerings to include wealth management and insurance intermediary services. In 2022, a couple of VBs launched wealth management business, providing purchase and sale of investment fund services and/or personal fund portfolio services. In 2023, certain VBs also launched investment fund services, and in the first quarter of 2024, a couple of VBs expanded their services to stock trading. In the second quarter of 2024, another VB obtained approval from the Securities and Futures Commission (SFC) to become a Registered Institution to engage in funds distribution and advisory activities.

55. VBs' wealth management services received good response from customers, evidenced by the sharp rise in business volume over the past two years. The total number of wealth management accounts at end-2023 was 2.4 times of that at end-2022, and the total market value of clients' investment portfolio increased seven-fold during the same period.

56. Since 2022, a few VBs have become Licensed Insurance Intermediaries under the Insurance Ordinance to carry on long term business (excluding linked long term business) and/or general business. Product offerings include but not limited to life, health, travel and home insurance. The scale of such business is currently small while notable growth has been recorded.

Complaints against VBs

57. Following the official launch of VBs' businesses in 2020, the number of customer complaints against VBs received by the HKMA recorded an upward trend in the first two years before stabilising in 2023. About 30% of the complaints were related to the operation of banking accounts, followed by credit or stored value card issues (13%) and cash deposit or withdrawal or refund transfer disputes (12%). Other complaints include service quality issues, system failings, lending business/decision issues and client agreement issues. In general, VBs had properly handled and followed-up on the complaints. Over the past three years, the average number of customer complaints against VBs received by the HKMA was about 0.2 per 1,000 depositors per year for VBs, as compared to an

average of about 0.13 customer complaints per 1,000 depositors per year against the incumbent retail banks.

Development of VBs

The HKMA's policy initiatives

58. As elaborated earlier in this report, VBs encountered challenges during their initial stage of business launch. The outbreak of the COVID-19 pandemic and the uncertain macroeconomic outlook had affected their pace of development. Referring to the same regulatory standards, the HKMA has adapted its supervisory approaches commensurate with the risk profiles of VBs, and provided relevant guidance in terms of governance, adoption of new processes and technologies, risk management and control. Set out below are the measures implemented by the HKMA which have yielded positive outcomes.

(i) Launch of new products

59. To facilitate banks including VBs to roll out new fintech products, the FSS process has been streamlined since December 2022 to aid a faster and smoother access for testing new products by banks, including VBs. Information requests have been minimised and independent assessment reports will normally not be required. A pragmatic approach with one-stop contact point has been set up for coordinating early supervisory feedback from various teams within the HKMA on innovative initiatives before full launch.

60. Further, the supervisory arrangements for launching products under the "New Personal-lending Portfolio" (NPP) framework have been streamlined (by removing the requirement to discuss the product proposals with the HKMA in advance) since October 2022. The revised NPP framework helps facilitate VBs to adopt innovative credit analytic tools in credit underwriting processes.

(ii) eDDA fund transfer fees

61. The simplified eDDA service, launched in 2018, has gained significant traction among banks, with an increasing number of banks supporting the service. eDDA enables customers to transfer funds efficiently through the payee bank's app, eliminating the need to access the payer bank's app, and which complements other options such as the FPS for instant interbank transfers.

62. Over the years, customer usage of eDDA has increased, particularly among VBs. With encouragement by the HKMA, The Hong Kong Association of Banks (HKAB) facilitated dialogues between the VBs and the incumbent banks to provide two-way fund flow through both inbound and outbound eDDA, and to set fair and reasonable fees for the service.

63. The HKMA is supportive of the development of eDDA and the principles set by HKAB. As banking services continue to digitise and eDDA adoption increases, major banks have also reviewed and adjusted their fee structures to facilitate the use of eDDA for interbank transfers, ultimately enhancing customer experience.

(iii) Financial data infrastructure

64. The HKMA has also further developed the financial data infrastructure to make more data available for use by banks (including VBs) in providing personalised services and risk management. Significant effort had been made, resulting in notable enhancements of financial data infrastructure over the years, which has addressed the suggestions of VBs to a large extent. These enhancements include:

(a) **Commercial Data Interchange (CDI):** CDI was officially launched in October 2022. With the addition of Companies Registry as a data provider for CDI in 2023, company search can be automated, thereby reducing manual work of checking companies' profile. The onboarding process for corporate customers can be sped up. At present, some VBs have participated in CDI while some of them have already had successful use cases; and

(b) **Open Application Programming Interface (Open API):** The pilot programme of the Interbank Account Data Sharing (IADS) initiative was launched in January 2024, which aims to allow customers to securely and efficiently share their bank account data with other banks subject to their consent. The pilot programme covers retail, corporate and SME customer segments. All eight VBs participate in the pilot programme.

(iv) Digital asset-related businesses

65. Some VBs have interest in expanding their product coverage and engaging in business activities relating to Web3 and digital assets. The HKMA continues to support VBs to explore such new initiatives, and has provided guidance to them on the relevant regulatory expectations and requirements.

66. The HKMA embraces financial innovations and encourages all Authorized Institutions to explore the potential of distributed ledger technology (DLT) to support the sustainable and responsible development of the digital asset ecosystem in Hong Kong. A risk-based approach is adopted to supervising the digital asset-related activities of Authorized Institutions, including both incumbent banks and VBs, in line with applicable international standards and based on the principle of "same risk, same regulation". In light of the risks involved in digital

asset related activities, the HKMA focuses on three areas, namely prudential supervision, anti-money laundering and counter financing of terrorism and financial crime risk, and investor protection.

67. As always with launching new products or services, banks (including VBs) are expected to undertake risk assessments to identify and understand the associated risks before engaging in any digital asset related activities, and they should take appropriate measures to manage and mitigate the identified risks, taking into account applicable legal and regulatory requirements, locally or outside Hong Kong.

68. In January 2022, the HKMA issued a circular to all Authorized Institutions, elucidating the regulatory approaches to their interface with virtual assets and related service providers. At the same time, the HKMA and the SFC also issued a joint circular to introduce investor protection measures for intermediaries, i.e. Registered Institutions and securities firms, which intended to distribute virtual asset related products and to provide dealing, advisory and asset management services of virtual assets. Since then the requirements have been updated twice to reflect market developments. Under the latest joint circular on intermediaries' virtual asset related activities issued by the HKMA and the SFC on 22 December 2023, intermediaries may distribute all such funds authorised by SFC for public offerings, including spot exchange-traded funds, to their retail clients. They may also provide dealing, advisory and asset management services of virtual assets to retail clients.

69. Apart from intermediaries selling digital asset related products, custodians which hold client digital assets are also major players in the crypto space, whereas tokenisation of assets is gaining traction because of its potential benefits to both financial institutions and investors in enabling fractional ownership of high-value assets, making it possible for investors to purchase smaller portions of assets which are otherwise inaccessible to small investors; reducing trading cost; enhancing liquidity; improving efficiency and increasing transparency. The HKMA issued guidance to Authorized Institutions on the expected standards of digital asset custodial services and sale and distribution of tokenised products in February 2024.

70. Some VBs are interested in the area of digital asset related activities, such as opening of bank accounts for Web3 companies and related service providers, and carrying on digital asset related intermediary activities.

(v) Setting up local office by VBs

71. A local office under the Banking Ordinance means a place of an Authorized Institution in Hong Kong from which business of the institution is promoted or assisted and to which members of the public ordinarily have physical

access for the purposes of that business. As opposed to bank branches, no banking business (i.e. taking deposits or paying or collecting cheques) or any other business which incurs financial exposure can be conducted in local offices.

72. While VBs are not allowed to establish physical branches in Hong Kong, they can set up local offices to assist customers in circumstances that would be more convenient to be handled through a face-to-face than a non-face-to-face environment, with a view to offering better customer experience. The HKMA has communicated to the industry on its policy stance on setting up a local office.

(vi) Requirement of "primarily delivering retail banking services"

73. Pursuant to the statutory "Guideline on Authorization of Virtual Banks" (the "Guideline") issued by the HKMA, a VB is defined as "a bank which primarily delivers retail banking services through the internet or other forms of electronic channels instead of physical branches". In light of the recent developments of the VBs, such as increasing exposures to and dealings with business entities, the digital asset related sector and the Web3 ecosystem, the HKMA considers that the requirement for VBs to be engaging primarily in retail banking business is no longer appropriate or necessary. Accordingly, the definition of VB set out in the Guideline will be revised as "a bank which delivers banking services through the internet or other forms of electronic channels instead of physical branches".

Outlook for VBs

74. VBs have been steadily growing their business with increased market acceptance. They have been able to leverage technology to provide more personalised and convenient services customers, enabling customers to enjoy more and value-for-money choices. VBs have also been a catalyst for change in the Hong Kong banking sector, accelerating digital innovation in the banking industry, resulting in incumbent retail banks becoming more efficient in their operational processes.

75. Looking ahead, VBs are well-positioned for growth by capitalising on their flexibility and customer-oriented approach. As incumbent banks undergo digital transformation, the digital innovation across the banking industry will increase customer expectations and broaden financial accessibility. Simultaneously, competition among the existing eight VBs will spur further innovation and product enhancements, as they are committed to technological investment and prioritising customer experience.

76. To pave a path to profitability, VBs have devoted substantial efforts to establish and refine their business strategies, obtain capital injections from existing or new shareholders in some cases, or undertake group restructuring.

Some of them have already demonstrated good growth momentum and are progressing steadily towards profitability through continuous service innovations and sound financial management. Based on their business projections, VBs will continue to enrich their product suite, and their aggregate financial performance is expected to continue to improve in the next three years, with increasing operating income and narrowing net losses. The key driver for the improvement will be loan growth, whereas the contribution of non-interest income is growing from a small base.

77. While VBs are on an upward trajectory of growth and development, the HKMA does not see any strong justification at this stage to introduce more VB players to the market. The already keen competition in the retail banking sector will be further intensified if more new market participants are introduced. Moreover, with VBs yet to achieve profitability, introducing new players to the market is unlikely to be conducive to a healthy development of the sector. The number of enquiries from interested parties about VB application received by the HKMA has also declined over the past few years, indicating a lack of interest from prospective new players in the sector.

78. As an international financial centre, banks in Hong Kong offer products and services not just to customers who are local Hong Kong residents, but also customers from other places around the world who find the products and services by banks in Hong Kong attractive, convenient, efficient and meeting their needs. Over the years, there were questions from time to time as to whether VBs can offer banking services to non-Hong Kong residents. As VBs are authorized to carry on banking business in Hong Kong as the incumbent banks, and given that VBs have acquired a solid customer base and reached a steadier state of development in Hong Kong, they should also be able to provide banking services to non-Hong Kong residents who are physically in Hong Kong. VBs intending to offer such services should ensure that they will comply with all applicable legal and regulatory requirements, locally or outside Hong Kong. The HKMA will continue to provide policy clarity as and when necessary.

IV. CONCLUSIONS AND WAY FORWARD

79. Overall speaking, the development of VBs in Hong Kong has thus far achieved the three policy objectives of introducing virtual banking. Virtual banking, the innovative banking model driven by the adoption of technology, is gaining wide market acceptance in Hong Kong. The products and services offered by the eight VBs have also received positive response. Some of the VBs have already demonstrated good growth momentum and are progressing steadily towards profitability through continuous service innovations, whereas some have undertaken a major shift in business strategy or group restructuring initiatives with an aim to enhancing the business performance, thereby accelerating the pace to profitability.

80. The HKMA considers that the current structure of the VB sector should be maintained with a view to facilitating long-term development of the eight VBs as well as maintaining a healthy competitive landscape in the banking industry.

81. In light of the recent developments of the VBs, the current requirement that a VB should primarily deliver retail banking services is considered no longer appropriate or necessary and will therefore be removed.

82. The HKMA will continue to monitor the operations and development of the eight VBs closely and provide guidance in the process of their development of new products and services, and provide policy clarity as and when necessary.

83. In the meantime, the HKMA is consulting the public on a recent proposal to rename “Virtual Bank” as “Digital Bank”. It is expected that the proposed new name can better reflect the banking model of VBs.