



**pwc**



Financial Services in the  
Greater Bay Area:

# Ready for take-off

November 2023

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# Foreword: “an unmissable opportunity”





# An unmissable opportunity

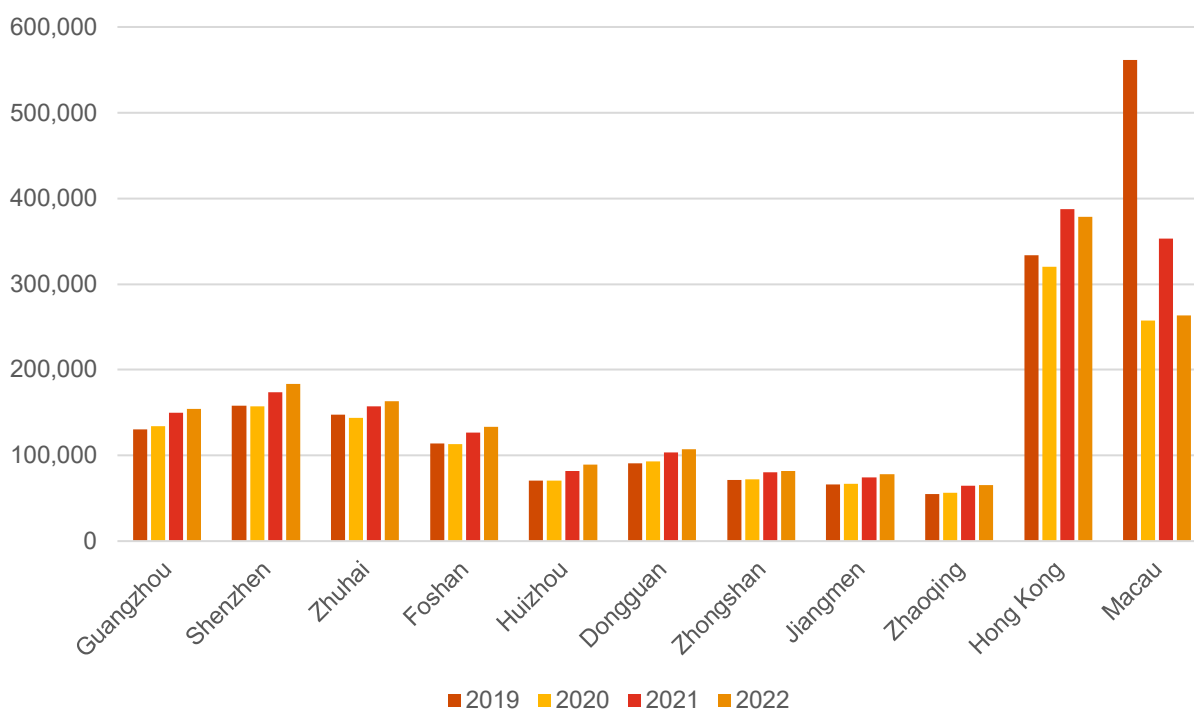
This paper is based on in-depth interviews with a range of PwC’s financial services clients, as well as representatives from industry bodies and academia. As with our previous papers on Financial Services in the GBA<sup>1</sup>, these interviews have identified some areas where there is broad consensus. But they also highlight issues where views are quite polarised – often because policy and regulation are still being formulated.

We should also add that attitudes towards the GBA have evolved in the five years since our first paper. Some industry players initially adopted a ‘wait and see’ attitude. Others felt that the opportunities

presented by the GBA might not match their own service offerings. Still others wondered about scarcity of talent or the constraints of regulation.

Attitudes have grown perceptibly more bullish since we started monitoring this space. Hong Kong has been made the base for a number of senior positions<sup>2</sup> – particularly in the insurance and wealth management sectors – in order to drive broader Asia strategies and for market entry into the GBA. In the words of one senior Chinese banker: “the GBA is an unmissable opportunity.” In this paper we look at how market participants can best leverage it.

## Per capita GDP (RMB)



Source: <https://www.dsec.gov.mo/BayArea/en-US/#home>

- <https://www.pwccn.com/en/research-and-insights/Fintech/fintech-greater-bay-area-breaking-down-barriers.pdf>  
<https://www.pwccn.com/en/industries/financial-services/publications/gba-takes-shape-feb2022.html>
- [https://www.scmp.com/business/banking-finance/article/3224226/manulife-relocates-senior-executive-hong-kong-canadas-biggest-insurer-joins-peers-using-city-base?module=service\\_journalism\\_hk&pgtype=homepage](https://www.scmp.com/business/banking-finance/article/3224226/manulife-relocates-senior-executive-hong-kong-canadas-biggest-insurer-joins-peers-using-city-base?module=service_journalism_hk&pgtype=homepage)



# 1. Overview





# Overview

## After a period of enforced inertia, the brakes are off and the GBA can open for business

The Outline Development Plan of the Greater Bay Area<sup>3</sup> was issued in February 2019 and immediately triggered intense discussion and analysis. As PwC argued in a paper issued the following year<sup>4</sup>, financial institutions were beginning to prepare for this new market and the opportunities it presented. They were devising new products and services, while assessing related resource requirements, to fully leverage the GBA opportunity.

Shortly after, of course, many plans and forecasts were significantly disrupted by the global Covid-19 pandemic. In some respects, the business landscape and our ways of working have fundamentally changed. Some trends, particularly digitisation, have been accelerated. Other issues – such as mobility of people – are now seen in a completely different light.



The ongoing improvements in digitisation in the GBA, as well as the acceleration of programmes such as Wealth Management Connect and Swap Connect, are leading to greater interconnection across the GBA's financial services industry.

**James Chang**

Managing Partner of Regional Economic Clusters, Mainland China Financial Services Leader, PwC China



GBA integration will have the greatest impact at the point where financial services, healthcare and technology intersect.

**Chris Chan**

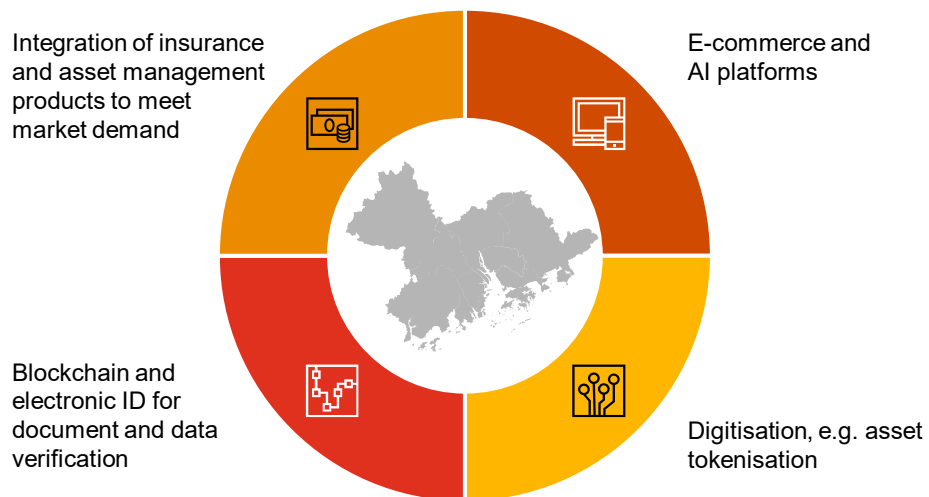
Financial Services Markets Leader, GBA Services, PwC China



3. [https://www.bayarea.gov.hk/filemanager/en/share/pdf/Outline\\_Development\\_Plan.pdf](https://www.bayarea.gov.hk/filemanager/en/share/pdf/Outline_Development_Plan.pdf)

4. <https://www.pwccn.com/en/financial-services/publications/developing-a-gba-mind-set.pdf>

## Key drivers for the development of financial services in the GBA



Coping with the operational implications of the pandemic has demanded the full attention of many business leaders over the last three years. This has led to some frustration at a perceived lack of progress in the GBA project. But, as we will outline in this paper, the last three years have allowed time for greater policy development and for many businesses to more profoundly develop their business strategies.

A recent example of policy development at the regulatory level is the new FinTech Promotion Roadmap<sup>5</sup> developed by the Hong Kong Monetary Authority with the support of the Securities and Futures Commission and the Insurance Authority. The Roadmap encompasses Wealthtech, Insurtech and Greentech, as well as AI and Distributed Ledger Technology (DLT), thus taking a more holistic approach to helping the sector put FinTech into action.



There have been a lot of concrete announcements since President Xi's visit [to Hong Kong in July 2022]. I have never seen so many supporting initiatives in such a short space of time. These include Swap Connect, International Stock Connect and the Qianhai private fund connect. The '30 measures to boost Qianhai-HK financial cooperation' are very detailed and specific, offering a very clear roadmap.



**Dr King Au**  
Executive Director, Financial Services  
Development Council (FSDC)

5. <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2023/08/20230825-3/>







The challenge for many market participants is which elements to prioritise in their GBA strategy. Institutions need to map their capabilities to a rapidly expanding range of opportunities.



**James Tam**

Banking and Capital Markets Leader,  
PwC Hong Kong

While some of the market participants we have interviewed are focussed on delivering discrete service or product offerings, others have emerged from the last few years impatient to see a more all-encompassing vision for the GBA. As Dr Ma Jun, Chairman of the Hong Kong Green Finance Association, points out: “The GBA’s advantage is that the willingness to cooperate is very high – on the part of both regulators and institutions. The Mainland wants to raise money; Hong Kong wants to lend and to provide consulting for GBA projects.”

Bullishness about the benefits arising from synergies in the GBA is most pronounced in the tech sector. As we will outline elsewhere in this paper, the progress that has been made in recent years – particularly in data sharing – leads many of our tech interviewees to argue that the supposed barriers to GBA integration can be managed with support from policy makers and provided appropriate technologies are adopted.



Cross-border data sharing requires a lot of coordination at the government level. One of the more successful cases is the faster payment system (FPS). While it took a long time, it has finally realized the sharing of payment information through a unique identifier. We now envision a GBA Resident Card that could link information such as mainland medical insurance accounts, bank cards and HR records through a data aggregation platform to facilitate the development of the GBA’s financial services industry.



**Dr Felix Lee**

Co-CEO, The GBA Healthcare Group

## Faster Payment System

| Year | HKD                    |                  | RMB                    |                  |
|------|------------------------|------------------|------------------------|------------------|
|      | Volume of transactions | Value (HKD 000s) | Volume of transactions | Value (RMB 000s) |
| 2018 | 5,370,855              | 127,864,039      | 67,248                 | 2,774,578        |
| 2019 | 43,678,835             | 817,717,619      | 304,339                | 14,921,912       |
| 2020 | 138,000,982            | 1,538,743,079    | 209,387                | 19,583,613       |
| 2021 | 263,656,093            | 2,239,266,271    | 268,574                | 50,084,071       |
| 2022 | 391,372,121            | 2,901,384,284    | 345,817                | 75,708,674       |

Source: Hong Kong Interbank Clearing Limited

As well as the exciting new opportunities presented by technology, some of our interviewees emphasise the importance of fully leveraging existing strengths. As Alice Law of the Asia Securities Industry & Financial Markets Association (ASIFMA) points out:

“Hong Kong is extremely well run, with robust, dependable payments and settlements systems. The HKMA offers efficient, centralised utilities that aren’t available elsewhere. The GBA can be much bigger than Wealth Management Connect.”



The whole is more than the sum of its parts. Hong Kong has certain legacies that are unique, such as common law. These are working to everyone’s benefit, so why change? The HKD peg is another legacy that works, as is the free flow of capital. Hong Kong has clear advantages compared to other GBA cities, but they are of limited use without the GBA itself.

**Dr King Au**  
FSDC

As we will discuss in Section 4, Wealth Management Connect’s slow start is largely due to caution on the part of regulators regarding the sales process and levels of investor education. Regulators on both sides of the boundary are anxious to avoid mis-selling or practices that direct investors to inappropriate products.



In the current economic and geopolitical climate, the GBA remains an important source of innovation and growth. It has been one of the most open and internationally-connected parts of China’s economy for decades, and home to some of the most prominent and innovative Chinese companies. This looks set to continue.



**Tim Summers**  
Assistant Professor, Centre for China Studies,  
The Chinese University of Hong Kong



At the same time, the wealth management sector continues to lobby for an expanded Wealth Management Connect, with larger quotas and more sophisticated products. As we discuss in Section 3, a recent announcement from the SFC indicates<sup>6</sup> that this hoped-for Wealth Management Connect 2.0 is indeed in the pipeline. Institutions may be able to move beyond the strictly retail segment and provide a more sophisticated range of products to meet the needs of 'mass affluent' investors.

As well as Wealth Management Connect, insurance is an important driver of GBA integration. It provides a cross-border wealth management proposition while meeting daily needs and encouraging loyalty. The establishment of service centres in the GBA so that offshore insurers (mainly Hong Kong-based) can provide claims support will be another major step forward.

The market for insurance products targeting the GBA customer base will broaden and deepen as familiarity with offshore brands grows. Cross-boundary motor and health insurance will move from niche to mainstream as the GBA 'living circle' concept becomes a reality. A recent paper from the Hong Kong Retirement Schemes Association<sup>7</sup> makes a number of recommendations – particularly regarding mobility of savings products and individual tax concessions – that could help accelerate these trends.

6. <https://apps.sfc.hk/edistributionWeb/gateway/EN/news-and-announcements/news/doc?refNo=23PR111>

7. [https://hkrsa.org.hk/image/catalog/HKRSA\\_GBA\\_2022\\_EN\\_v8.pdf](https://hkrsa.org.hk/image/catalog/HKRSA_GBA_2022_EN_v8.pdf)



## 2. The GBA as an engine of innovation





# The GBA as an engine of innovation



The financial integration of the GBA is evolving fast, driven by digitisation. Blockchain infrastructure is being developed across the GBA to support new financial products, many of which will include elements of digital assets.

**Albert Lo**

Financial Services Consulting Leader, PwC Hong Kong



As outlined in our opening section, the constituent parts of the GBA have a unique array of strengths and synergies. These are being enhanced by a steady stream of new policies and initiatives, such as Swap Connect and the 'Thirty measures for Qianhai-Hong Kong financial cooperation'.

Opportunities within the GBA are being turbocharged by a powerful combination of regulatory openness and technical innovation. As one of our interviewees argues: "The GBA's main differentiator is regulation. Hong Kong's regulators are very open, so we see a lot of innovation here compared to Japan, Korea or Taiwan."

As we illustrate in Section 6 of this paper, much of this innovation is focussed on protocols around the sharing and circulation of data. As Jennifer Tan, of Ant Group, points out: "If cross-border data circulation is realised within the GBA, the entire banking and financial system will be reshaped. The problem of cross-border account opening will be solved, and there will be more wealth management and lending activities in the GBA, which will greatly affect people's daily lives."

As more and more use cases build up, a greater range of financial and non-financial data will be able

to be shared or verified. The permissioned sharing of data, as demonstrated in the HKMA's Commercial Data Interchange project<sup>8</sup>, has already improved access to credit for SMEs and would have enormous potential once launched within the GBA. From its launch and up to June 2023, it had processed over 4,900 loan applications and approved over HK\$4.4bn of loans.

The mBridge project<sup>9</sup> (led by the BIS Innovation Hub and four central banks) has established that CBDCs can deliver faster and cheaper wholesale banking fund remittance transactions. A recent paper from Standard Chartered Bank and PwC<sup>10</sup> has demonstrated the utility of CBDCs at both the wholesale and retail level and how they can be a catalyst for a new era of digital payments and programmable banking.

These innovations are not confined to Hong Kong: Macau's Executive Council announced in October 2022<sup>11</sup> that it wishes to use digital currency. More recently, the Hengqin authorities announced new incentives for bond issuance in Macau<sup>12</sup>. As these developments may increase the competition for talent, the Macau government has also introduced new measures to attract candidates from overseas<sup>13</sup>.

8. <https://cdi.hkma.gov.hk/>

9. [https://www.bis.org/about/bisih/topics/cbdc/mcbdc\\_bridge.htm](https://www.bis.org/about/bisih/topics/cbdc/mcbdc_bridge.htm)

10. <https://www.pwchk.com/en/industries/financial-services/publications/cbdc-white-paper-may2023.html>

11. <https://forkast.news/headlines/macau-digital-currency-cbdc-legal-tender/>

12. <https://www.macaubusiness.com/hengqin-authorities-unveil-new-rules-to-promote-bond-issuance-in-macau/>

13. <https://www.macaubusiness.com/explainer-new-legal-regime-for-recruiting-qualified-staff/>

Many of these innovations, of course, are not exclusive to the GBA. They are likely to have a significant impact on economies and industries in many other parts of the world. But they can be transformative for the GBA because they can release the potential of the region's dormant synergies.

The GBA is also relatively compact – institutions and regulators work in close proximity to each other and industries can more effectively lobby. This has had a beneficial effect on the progress of green finance.

Hong Kong's FSDC also sees the GBA as a promising launch pad for green finance infrastructure. As Dr King Au explains: "Our recent paper<sup>14</sup> proposes a Carbon Connect scheme that could link the voluntary carbon market with the Guangdong Carbon Futures Exchange. Starting with the GBA and then rolling it out more widely would be the easiest course."

The paper argues that – just as Hong Kong is a super-connector between Mainland and international financial markets – the city could play an analogous role in carbon markets: "The Guangdong carbon market would be an ideal market to connect with. Hong Kong should leverage the large emission and trading volume in Guangdong and seek to be a part of the carbon market in the GBA."<sup>15</sup>



With Hong Kong acting as an international green and sustainable finance hub, the GBA is well positioned to lead the way in driving scale and innovation in this critical field.



**Cindy Ngan**

Partner, Climate & Sustainability,  
PwC Hong Kong



The GBA needs to transform from the current '9+2' thinking into a unified entity. When we imagine the 'one-hour living circle' of the GBA, we should start from the fundamentals and regard it as a super metropolis. A GBA resident card should be able to meet the daily needs of people in all three jurisdictions for study, employment, medical care and business.



**Jennifer Tan**

Executive Vice President, Strategy  
Development and Government Affairs, Greater  
Bay Area, Ant Group

14. <https://www.fsd.org.hk/media/4plathbr/20230202-fsdc-carbon-paper-en.pdf>

15. Ibid



# 3. The GBA as a regional wealth management centre



## Section 3



# The GBA as a regional wealth management centre



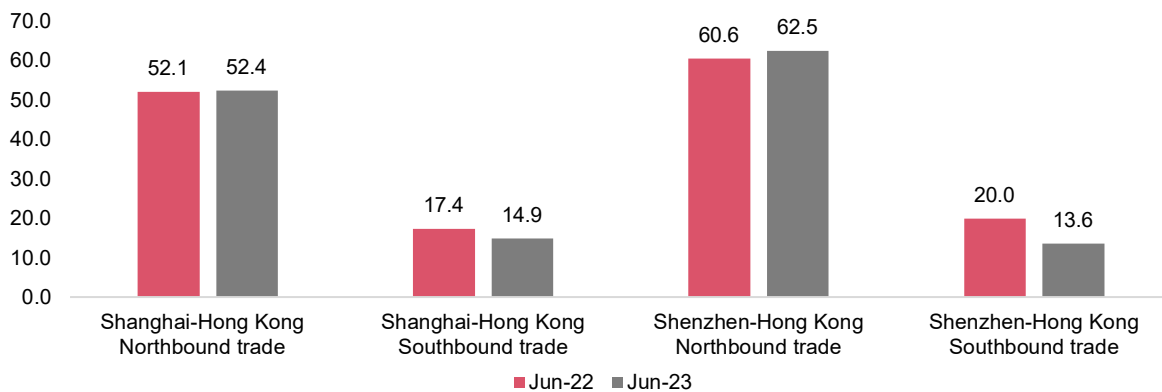
We welcome the recently announced enhancements to the Wealth Management Connect Pilot Scheme. These initiatives will enable more GBA residents to participate in the scheme and will further facilitate cross-border investments and the development of the Hong Kong wealth industry.

**Horace Yip**

Head of Hong Kong and Greater Bay Area, Citi Private Bank



### Stock Connect daily turnover - buy & sell (RMB bn)



Source: Hong Kong Exchanges and Clearing Limited

We envision Wealth Management Connect (WMC) and an eventual Insurance Connect as twin pillars supporting the GBA as a regional wealth management centre serving the mass affluent market. Launched in October 2021, WMC differs from previous capital liberalisation measures in that it is aimed specifically at GBA residents and defines eligibility as a GBA investor<sup>16</sup>. The robustness of these eligibility criteria has been widely discussed, as this could determine the feasibility of implementing further GBA-specific initiatives – in financial services and beyond.

The timing of WMC's launch proved to be unfortunate, as the outbreak of Covid and the subsequent boundary closures greatly impacted the initial quota utilisation. The take-up of the Southbound quota has started to pick up, albeit from a low base, whereas utilisation of Shanghai-Hong Kong and Shenzhen-Hong Kong Stock Connect has remained steady (see above). The main impediments have been identified as the restrictions on the offering of cross-boundary sales advice, as well as a limited choice of products and a modest individual quota (RMB1m per investor).

16. <https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/wealth-management-connect/southbound-scheme/#eligible-investor-product>



| Wealth Management Connect Southbound Utilisation | 16/7/23 | 16/8/23 | 17/9/23 | 17/10/23 |
|--|---------|---------|---------|----------|
| RMB m  | 1,150.8 | 1,441.4 | 1,690.0 | 2,096.8  |
| Utilisation (%)                                  | 0.77    | 0.96    | 1.13    | 1.40     |

Source: <http://guangzhou.pbc.gov.cn/guangzhou/129196/4332364/4332372/4332394/index.html>



WMC is distinct from the investment channels available to HNWIs. Along with pension portability, it is an important part of GBA integration because it is aimed at the masses.

**Dr King Au**  
FSDC

However, as mentioned in Section 1, a recent announcement from the SFC<sup>17</sup> has clearly signalled that a so-called Wealth Management Connect 2.0 will be launched in the near future. This will refine eligibility criteria and expand the scope of products to be included. It is expected that individual quotas will be increased – possibly to RMB5m per investor. This would increase the attractiveness of WMC while maintaining its status as essentially a retail investment channel. However, as King Au of the FSDC points out: “there are still issues with remote account opening and the types of products available. Understanding of markets and the different products is very different on the other side of the boundary. Mutual recognition of professional qualifications would really help overcome this knowledge gap.”



Requiring Mainland investors to come over to Hong Kong for the day to spend a couple of hours making investments isn't ideal. Even with cooling-off periods for mis-selling or mis-purchasing, it doesn't allow time for people to contemplate investment decisions. We need to 'think outside the box' and advocate for special GBA 'facilitations'. Post-pandemic, the demand for technology-supported solutions is increasing and channels should be explored to enable better customer experience within the GBA. The GBA could be a showcase for China: we have a world-class international financial centre in Hong Kong plus an incredible pool of entrepreneurs and wealth in Guangdong. Where else can you find such a combination?



**Alice Law**  
Chief Executive Officer  
ASIFMA

17. <https://apps.sfc.hk/edistributionWeb/gateway/EN/news-and-announcements/news/doc?refNo=23PR111>



“

Cities in the GBA need to work together to narrow the gaps and loopholes in the standards of their healthcare, education, housing, tax incentives, customs arrangements, and the provision of a social safety net. There have been policy initiatives to make it more convenient for talent to work across cities in the region, but we are still at a relatively early stage of overcoming existing barriers and facilitating large-scale talent mobility.



**Professor Li Chen**

Associate Professor, Centre for China Studies  
The Chinese University of Hong Kong

Demand for an increasingly diverse range of insurance products is expected in the GBA. The recently introduced ‘unilateral recognition policy’<sup>18</sup> for cross-boundary motor insurance will make Northbound travel for Hong Kong vehicles much easier and will help further develop the ‘one-hour living circle’ concept. Technology (as discussed in the previous section) could enable the expansion of insurance as protection, according to Dr Felix Lee of The GBA Healthcare Group: “if medical data can be exchanged across borders, we can re-examine the allocation of medical resources in the GBA. This will affect the pricing of medical insurance products. If these are sold on a large scale, it will help insurance companies better control costs and risks.”

18. [https://www.ia.org.hk/en/infocenter/press\\_releases/20230501.html](https://www.ia.org.hk/en/infocenter/press_releases/20230501.html)



Moving from the retail to the institutional level, the most significant raft of measures issued this year was the 'Thirty measures to boost Qianhai-Hong Kong financial cooperation'<sup>19</sup>. These will make it easier for offshore institutions to set up commercial banks, asset management subsidiaries, consumer finance companies and pension funds in the Qianhai Cooperation Zone. They will also be able to establish distribution of securities, mutual funds and futures in the Zone. Hong Kong private banks and family offices will also be able to set up franchises and joint ventures.

But, as Horace Yip of Citi points out, the GBA is increasingly seen as a single market. "Last year we combined our Hong Kong and China South & West teams into one unit dedicated to serving GBA clients. The 'one-hour living circle' enabled by cross-boundary infrastructure also makes meeting clients more convenient and seamless."




The 'thirty measures' are a game-changer for Hong Kong-funded institutions in Qianhai. They will boost cross-boundary transaction volumes in equities, bonds and insurance products.


**James Tam**  
Banking and Capital Markets Leader,  
PwC Hong Kong

While the market has become increasingly interconnected, the needs of UHNW clients have become ever broader, as Mr Yip adds: "These clients are not just interested in parking their wealth. They want us to help with wealth planning, listings and M&A. They want to know what the CIOs of PE funds are focusing on."

19. <https://www.info.gov.hk/gia/general/202302/23/P2023022300609.htm>



# 4. How digitisation can transform GBA financial services



# How digitisation can transform GBA financial services



## Technology has the potential to make the GBA a reality

Over the last ten years, China-based FinTechs have led the world in digital finance, innovations in payments and the creation of ecosystems. Financial institutions globally have worked hard to catch up with and emulate China's FinTech giants. This progress has been noticeable in Hong Kong. But, at the same time, these Chinese firms have been looking to expand globally. The result is a heightened interchange of ideas cross-border, making the GBA ground zero for the digitisation of financial services.

As mentioned in Section 2, a recent paper by PwC and Standard Chartered Bank demonstrates the broader applications of programmable Central Bank Digital Currencies (CBDCs). While their worth for large-scale transaction banking has already been established through the mBridge project, the new paper looks at retail services and at trade and supply chain finance.

A survey carried out by the Hong Kong Institute for Monetary and Financial Research in late 2022<sup>20</sup> found that 90% of Hong Kong financial institutions "consider cross-boundary payment and settlement systems essential for their GBA outreach activities". However, prerequisites for this include "improving functionality of the payment and settlement infrastructures and promoting emerging technologies" as well as better communications between regulators and market participants.


Digital assets such as CBDCs, stablecoins and bank deposit tokens can co-exist within the current financial infrastructure, together with e-wallets and payment networks in Hong Kong and the rest of the GBA.



E-wallets are convenient for users with cross-border needs: users can not only choose different currencies, but also directly use existing e-wallets for settlement. This is a win-win-win for users, for FinTech companies and for merchants.

**Jennifer Tan**  
Ant Group

A key theme emerging from this year's paper is that advances in the permissioned sharing of data are removing many of the obstacles to GBA integration and to the free flow of financial services. As we shall see in the next section, FinTechs and virtual banks have devised and refined methods to sift data into different categories and to grant varying degrees of visibility.



20. [https://www.aof.org.hk/docs/default-source/hkimr/applied-research-report/gbarep.pdf?sfvrsn=79a36dc7\\_0](https://www.aof.org.hk/docs/default-source/hkimr/applied-research-report/gbarep.pdf?sfvrsn=79a36dc7_0)



# 5. Cross-border data sharing





# Cross-border data sharing

By some estimates, there are nearly three million SMEs (including micro-enterprises) operating in the nine Mainland cities of the GBA. They accounted for 55% of the GDP of Guangdong Province in 2021<sup>21</sup>. Together they represent a significant constituency that could benefit from more efficient sharing of credit and other data cross-border. As mentioned in Section 3, the HKMA's Commercial Data Interchange initiative has already processed over 4,900 loan

applications. This is an area where we can expect to see significant expansion of activity in the coming years.

However, cross-border data sharing at a retail level is likely to be driven just as much by the need to share data related to employment, health, education and other fields.



'Minimum necessary information' is the basic principle. For example, a bank needs to make a credit risk model and therefore needs information about businesses and trade. This does not require any personal data – only the credit risk of the industry needs to be calculated.

**Jennifer Tan**  
Ant Group

A significant development in this regard was the signing of a memorandum in June 2023 by the Cyberspace Administration of China (CAC) and Hong Kong's Bureau of Innovation, Technology and Industry<sup>22</sup>. Under the memorandum, the Bureau and the Hong Kong Government's Chief Information Officer will work closely with the CAC to explore measures to foster cross-border data flows within the GBA. This will help financial institutions in the region to lower their compliance costs in cross-border data sharing cases and to encourage greater integration and innovation.

21. [https://www.bain.com/globalassets/noindex/2023/bain\\_brief\\_greater\\_bay\\_area\\_sme\\_report\\_a\\_story\\_of\\_resilience\\_and\\_opportunity.pdf](https://www.bain.com/globalassets/noindex/2023/bain_brief_greater_bay_area_sme_report_a_story_of_resilience_and_opportunity.pdf)

22. [https://www.news.gov.hk/eng/2023/06/20230630/20230630\\_120748\\_916.html](https://www.news.gov.hk/eng/2023/06/20230630/20230630_120748_916.html)



A number of our interviewees recommend a three-stage process for achieving greater connectivity:



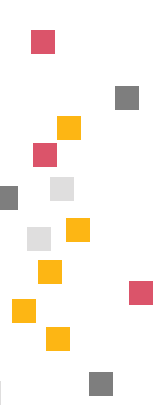
If cross-border exchange of medical data is realised, the pricing of medical indemnity insurance will be revamped, with the scope of having medical services delivered within the GBA being reimbursed by insurance products sold within Hong Kong. This will trigger major changes in medical insurance products and bring more business opportunities to the insurance industry in the GBA.

**Dr Felix Lee**  
Co-CEO, The GBA Healthcare Group



Once the obstacles to cross-border data exchange in the GBA are overcome, many labour-intensive processes will be digitised and the financial services industry will greatly improve. Innovative personal financial services will emerge as a result.

**Teng Wang**  
Deputy General Manager, Shenzhen Data Exchange



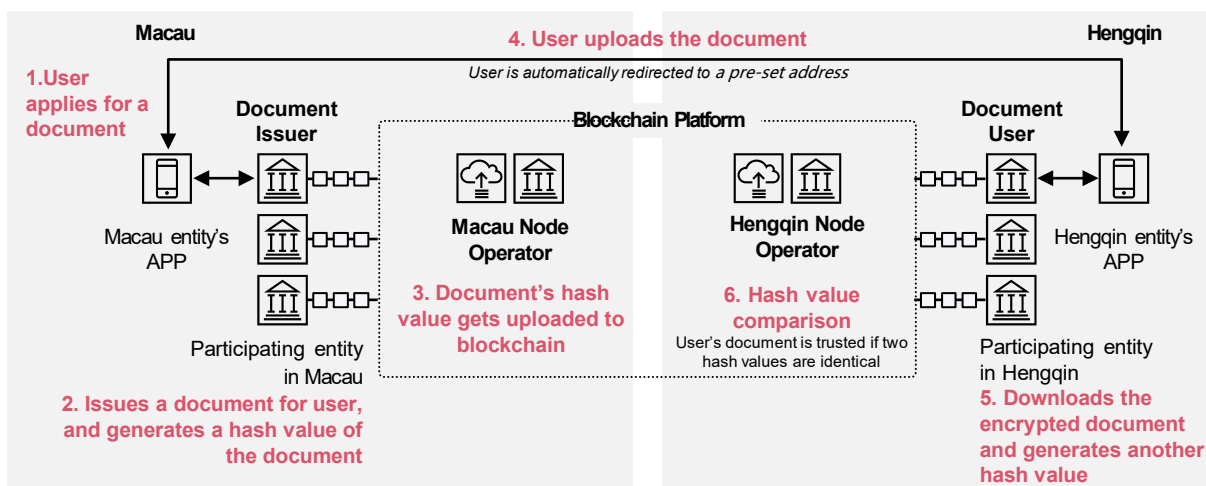


Whether in financial or other contexts, cross-border data sharing needs to strike a balance between security, cost and efficiency. However, this cannot be achieved solely by technological innovation. The laws and regulations of Guangdong, Hong Kong and Macau will also need to be more closely aligned.

In March 2022, the government of Hengqin announced the launch of the Guangdong-Macau

cross-border data verification platform<sup>23</sup>. This provides online, cross-border asset verification services for residents of Macau living in Hengqin (and vice versa) using blockchain technology and distributed data transfer protocol (DDTP). In this way, banks from both sides can verify customer data without having to directly transmit the data to one another. The platform has connected banks between Hengqin and Macau.

### The Guangdong - Macau cross-border data verification platform



Source: WeBank



'One country, two systems and three jurisdictions' means that organisations face vastly different regulatory requirements, but a new type of infrastructure is not in place yet.

To address this, we proposed a cross-border data portability solution based on the Distributed Data Transfer Protocol (DDTP). Applying the right to data portability, DDTP lets users initiate the transfer of personal information and perform data download/upload. Utilising a blockchain-based technical infrastructure, credible authentication and anti-tampering of data is ensured with 'data fingerprints' (hash values) verification. The entire process is compliant, traceable and audit-ready.



**Huiya Yao**  
Head of Technology Innovation, WeBank

23. [http://www.hengqin.gov.cn/macao\\_en/xwbb/content/post\\_3108394.html](http://www.hengqin.gov.cn/macao_en/xwbb/content/post_3108394.html)



The efficiency and risk trade-offs involved in cross-border data sharing are both complex and important. Based on our interviews and PwC's observations, we can summarise four viable models for cross-border sharing of financial data in the GBA:

- 1) Direct data transfer by financial institutions.** Each institution obtains cross-border data authorisation from their customers according to their business needs and applies for regulatory approval before data sharing, where necessary. This is the traditional approach currently followed by most financial institutions. However, communication and compliance costs are high.
- 2) Centralised processing of data transfer by official agencies or dedicated organisations.** This requires the regulatory authorities (i.e. the People's Bank of China, the Hong Kong Monetary Authority and Monetary Authority of Macao) to establish mechanisms or platforms (which could be operated by official agencies or dedicated organisations) in their respective jurisdictions to allow centralised cross-border sharing of data based on customer consent. This model reduces the regulatory approval time and compliance costs for financial institutions and improves the efficiency of cross-border data flows. However, it involves greater coordination between regulatory authorities and an enhanced legal and regulatory framework in the three jurisdictions.
- 3) Direct data transfer by data owner with validation mechanism.** Under this approach, data owners are able to send their data cross-border directly through technology infrastructure with data validation mechanisms based on advanced technologies (such as blockchain or application program interface). Both the financial institutions and customers will benefit from more efficient sharing of data without the need to go through stringent regulatory review and approval processes, while ensuring compliance. This is possibly the simplest and most efficient method and has already been applied in practice.
- 4) Industry collaboration for data sharing without the need to transfer personal information or sensitive data.** Under this approach, information is produced by financial institutions in different jurisdictions processing data collaboratively using advanced privacy-preserving technologies (e.g. federated learning with artificial intelligence (AI) models). The data output can be used by financial institutions cross-border to conduct model analysis (e.g. credit modelling) for financial products offered to their customers without the need to access personal information or sensitive data.



In terms of technology development, Guangdong and Hong Kong have their own advantages. Generally speaking, Hong Kong has paid more attention to the risk management of new technologies, while the Mainland has more willingly adopted FinTech. Both sides therefore need to collaborate in technology innovation in the GBA.



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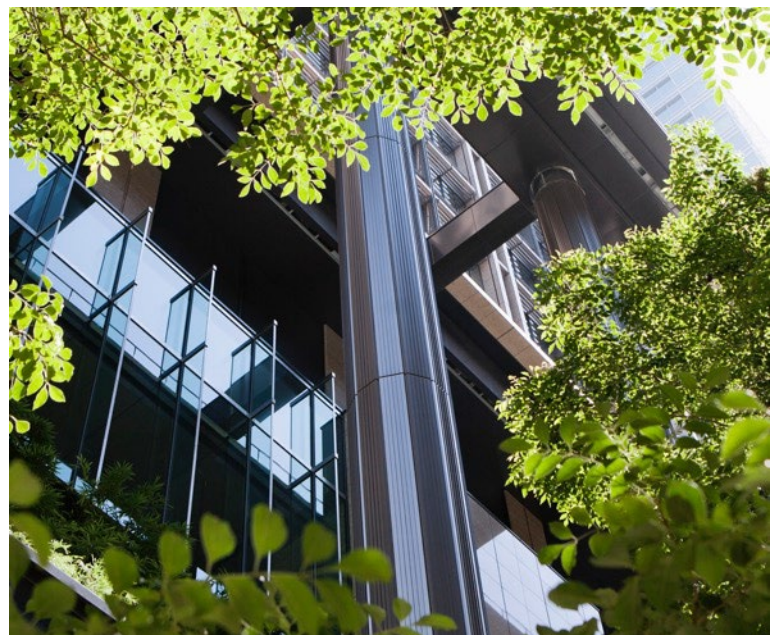


The HKMA's Commercial Data Interchange (CDI) enables businesses to authorise data providers to share their information with banks based on customer consent. This allows banks to access the trade information, payment records and other transaction history of these businesses, thus helping the banks make better credit decisions. With the support of governments and regulators, expanding this data sharing mechanism to all three jurisdictions in the GBA could greatly promote cross-border flows of financial data and the development of innovative services across all financial sub-sectors in the GBA.



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PwC looks forward to the realisation of efficient cross-border data sharing in the GBA. This will not only help promote the interconnection of financial institutions, businesses, markets and people. It will also create an international business environment, and consequent opportunities, within the GBA's one-hour living circle.





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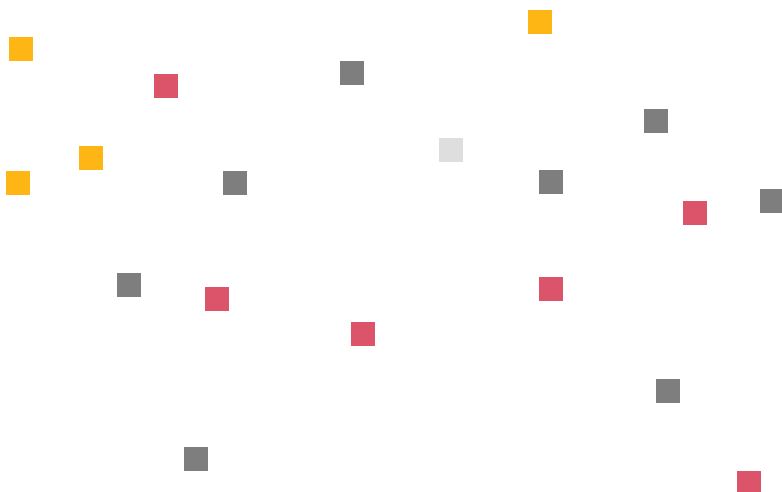
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