Eddie Yue: Opportunities and challenges of emerging technologies in the financial ecosystem

Welcoming remarks by Mr Eddie Yue, Chief Executive of the Hong Kong Monetary Authority, at the HKMA-Bank for International Settlements (BIS) Joint Conference "Opportunities and Challenges of Emerging Technologies in the Financial Ecosystem", Hong Kong, 31 October 2024.

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Distinguished guests, ladies and gentlemen,

Good morning! It is a great pleasure to welcome you all to this Conference, organised jointly by the BIS and the HKMA. In particular, a big welcome to those who have travelled all the way to Hong Kong for this event. This year, we are especially honoured to have the Global Association of Risk Professionals as our supporting organisation.

When the Conference was first held in March last year, the banking crisis in the US and Europe was just unfolding. And these incidents raised concerns about banks' risk management in a rapidly tightening interest rate environment. They also reminded us how technology that is meant to provide convenience to customers could also bring challenges to banks. When digital banking enables depositors to withdraw millions of dollars with a single click, banks and regulators are often left with little time to react.

Now, a year and a half later, the role of technology has only become more important. Technological advancements are reshaping our world at an astonishing pace. Among a wide array of cutting-edge technologies, artificial intelligence (AI) has drawn immense attention from the industry given its great potential to transform the financial system.

As a regulator, our instinct is to be prudent; however, as a facilitator, we are mindful that rapid advances in technologies can open up new opportunities for the financial industry. The key question is – how can we facilitate the industry to adopt novel technologies while at the same time managing new risks to the financial system brought by these changes? Are we fully prepared for these challenges? These are the very themes we will be discussing in today's Conference.

Let me spend a few minutes to share with you the HKMA's philosophy and approach towards the adoption of AI, especially Generative AI (GenAI), in financial services. I will also share some insights on where and how the banks should stay alert.

Nowadays, banks are deploying AI in many different areas to enhance operational efficiency and improve customer experience. We have seen AI applications in customer-facing functions, such as remote account onboarding and customer chatbots. We have also seen the use of AI in middle and back-office operations for risk management, fraud detection and automation of work processes.

The rise of GenAI in recent years has generated significant excitement due to its potential to further unlock the capabilities of AI. With its ability to create content in a human-like manner, GenAI holds the promise of achieving things that were thought to

be impossible in the past. While the application of GenAI in finance is still in its early days, many financial institutions are keen to explore its potential to step up their game.

We at the HKMA welcome and encourage the banking industry to embrace innovation driven by technological advances. At the same time, we must ensure any systemic risks arising from emerging technologies are effectively managed to safeguard the stability and resilience of the banking system. Balancing innovation with regulation is challenging but crucial.

Let's imagine the banking system is a bustling city. Emerging technologies are like highways that allow cars to travel faster, and more efficiently, towards their destinations. To keep these cars safe, we need guardrails along the edges of the highways to prevent the cars from going off course. In the financial world, the guardrails represent appropriate regulatory frameworks and risk management practices of banks in response to evolving risks associated with emerging technologies. These safeguards are essential for helping banks navigate through their digital transformation journey smoothly and safely.

To ensure the safeguards are proportionate and a right balance is achieved, the HKMA adopted an iterative approach in promoting the application of GenAI in the banking industry. The beauty of this approach lies in its step-by-step nature. We expect banks to plan carefully and assess risk implications, taking steps to properly manage them before launching a product at full scale. The HKMA's role, as the banking supervisor, is to provide room with enough flexibility to allow trial and error. This is where sandbox comes in.

We have recently launched a new GenAI sandbox in collaboration with Cyberport, one of the digital technology flagships in Hong Kong. With this sandbox, banks can test out new ideas within a risk-managed framework, supported by timely supervisory feedback and essential technical assistance. This allows banks to thoroughly assess the feasibility of use cases and make iterative adjustments before full-scale implementation. The sandbox is currently open for application. I strongly encourage banks to make good use of the sandbox to pilot their novel GenAI use cases.

The iterative approach also enables us to identify new risks that could threaten the broader financial system at an early stage, so we can develop and implement targeted safeguards in a timely manner. Currently, there are four key areas related to AI applications that are closely monitored by the international regulatory community, and we urge the banking industry to pay particularly close attention to them.

First, operational risk, or more specifically, concentration risk of third-party service providers. At the heart of AI are substantial computational power and large datasets. But these can only be handled by big tech firms that provide AI systems and related cloud services. If any of these few service providers suffer from IT failures or cyberattacks, the outcome could be catastrophic. The operations of many financial institutions relying on their services would be severely affected. This increasing dependence on a concentrated group of AI service providers is a cause for concern.

To strengthen the operational resilience of banks, we have required banks to conduct holistic risk assessment of AI service providers. Banks should also establish robust

business contingency plans to address potential disruptions to the services provided by third parties.

Fraud is the second area of concern. There is a saying: "In a doctor's hand, a knife is a tool for healing; but in a thief's hand, it becomes a weapon for harm." The content generation capabilities of GenAI has been exploited by malicious actors to create new forms of fraud. There have been cases where GenAI was used to produce deepfake videos that look real, to trick people into sharing personal information or making financial decisions. I have even found myself in a fake media interview promoting an investment scheme!

Even more concerning is the potential misuse of deepfakes to spread false rumours and trigger public panic, especially during times of market stress when public confidence is already weak. As the capabilities of GenAI continue to advance, there is a pressing need for all stakeholders in the financial system to work together to detect and combat the misuse of GenAI. It is equally important to raise public awareness and vigilance through education.

Thirdly, the customer protection angle should not be overlooked. AI is widely used in customer-facing activities. Yet, the decision-making process in some AI models is like a black box. They may produce incorrect outputs that appear credible. They may also produce biased results that unfairly favour or disadvantage certain groups or individuals. The even more complex models for GenAI may amplify these risks.

The key to addressing this issue is to embrace responsible innovation, with ethical considerations at the forefront of the innovation process. This approach should be backed by a robust AI governance framework that ensures proper governance and accountability, fair treatment to customers, transparency in decision-making, and strong data privacy measures. All these principles are critical to building customer trust and confidence in AI models. We have recently provided new guidance regarding the use of GenAI from a customer protection perspective. In particular, we have emphasised the importance of "human-in-the-loop". This means that critical judgement and decision-making should remain in the hands of humans. We will continue to closely monitor the development of GenAI, and guide the industry in using it in a responsible, fair and ethical manner.

Finally, we should be aware of the broader implications of AI on the economy. AI is reshaping the way we work by automating repetitive and routine tasks. This has led to changes in the nature of certain traditional job roles, allowing employees to focus on higher-value work. At the same time, there is increasing demand for labour with AI knowledge. To adapt to these changes, it is crucial to upskill and reskill our workforce in the financial industry. We are urging banks to proactively plan for manpower development and training to meet these new skill requirements.

To better support the industry, we are collaborating with banks on a capacity-building study for the second time. Building on our first study, we will update the skill mapping exercise to identify potential skill shortages in the banking sector over the next five years, from 2026 to 2030. The findings will be published next year. We hope this study will help banks better understand their future training needs, enabling them to adjust their talent development strategies in a timely manner.

Looking ahead, there are still many unknowns surrounding the actual application of GenAI in financial services. But one thing is clear – AI has no boundaries; it is advancing at an unprecedented speed; and its impact is revolutionary. No single party – be it a public or private entity – can deal with all the challenges alone. We must foster public-private partnerships and international collaboration to leverage the collective wisdom of all stakeholders.

With this, I would like to express my deepest gratitude to all the speakers at this Conference for sharing their valuable insights and experiences on how AI, tokenisation, and other technologies are transforming the financial industry, and how we can better prepare for these changes. In particular, I would like to give my warmest thanks to Sarah Breeden, Deputy Governor of the Bank of England. Although she cannot join us in Hong Kong in person, she is committed to delivering a keynote speech virtually to share the UK's experience in AI adoption. I assure you, this video is not a deepfake!

My heartfelt thanks also go to our co-host, the BIS, for its steadfast support of this Conference. We are especially pleased to have Cecilia Skingsley, Head of the BIS Innovation Hub, to share her insights on the implications of AI for central banks, as many of them are incorporating AI into their toolkits. The HKMA has been working very closely with the BIS Innovation Hub on pioneering projects in the technology space. This year is a special moment as the Hong Kong Centre of the BIS Innovation Hub celebrates its 5th anniversary, and I look forward to many more milestones together.

I hope all of you will find the discussions today fruitful and rewarding. Most importantly, I hope you will find yourself better prepared for both the opportunities and challenges of emerging technologies, as you navigate these promising and exciting new frontiers. Thank you.