



## International Trends in Regtech Innovation

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## Abstract

Fintech has swept the world, not only creating new transaction, business, and industrial models for financial services, but also challenging the supervisory models in effect for many years. Designing new regulations and rethinking the role of regulators, without restraining innovation, and creating an environment conducive for benign interaction, will all become key factors for the steady development of the industry. A balance must be struck between regulators, business, and Fintech. “Regtech” is a type of tool to help financial institutions comply with regulatory requirements and improve supervision efficiency, effectively resolving financial pain points.

This report draws several important conclusions. First, governments around the world have actively provided Fintech startups with experimental regulatory environments. The development of a country’s Fintech industry, the state of its policy and regulatory environment for staffing recruitment and attraction of capital, and the smoothness of its financing channels are all closely related, and greatly affect the construction of its Fintech ecosystem. Secondly, many Regtech startups have already appeared around the world. If they are able to cooperate with financial institutions, their technology will improve, helping reduce banks’ compliance risks. Third, a sound regulatory environment is needed to support Taiwan’s emerging Fintech industry. The passage of the Experimental Regulations on Fintech Development may focus attention on Taiwan’s Fintech development. Hopefully, the “sandbox” mechanism will be able to develop the industry. Increasing regulatory requirements will bring growth opportunities to Regtech startups. Fourth, most of the cases in this study are of Fintech startups – mainly because they have developed faster than banks, have provided Regtech to the financial industry, and have good reference value.



This study puts forward several suggestions for banks. 1) Watch the trend of risk-oriented supervision; 2) Use it to guide internal audit strategy; 3) Watch the trend of technology-oriented regulation; 4) Actively utilize Regtech and strengthen joint information security defenses in response to new international regulations; 5) Create Regtech accelerators and construct drills; 6) Early models for cooperation with Regtech; 7) Research Regtech topics and plan personnel training; 8) Regtech development priorities; and 9) Model Regtech policies.

Finally, in order to build up a Fintech ecosystem, Taiwan should first consider reshaping its regulation and innovation - a process with an important role for regulators. If Taiwan can make use of this opportunity to initiate new Regtech ideas and practices, and assist cooperation between technology entrepreneurs and financial institutions, it can become a model for Fintech and Regtech in Asia.



# Research Findings

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## 1. Introduction

The purpose of this study is to explore the latest issues, cases and trends in international Regtech, describe its possible new roles arising from Fintech development, and put forth suggestions for the financial sector. For Taiwan to lead in Regtech, financial institutions must carefully evaluate its impact on Fintech development and possible opportunities therein, then formulate policy directions and development strategies.

This study explores the regulatory approaches, legal statutes, and national policy measures taken by the UK, Singapore, Australia, US, Japan, and China (including Hong Kong) with regard to Regtech, and analyzes how their governments and industry support its long-term development.

## 2. Regtech Development in Major Countries

The UK's Financial Conduct Authority defines Regtech as "the use of the latest technology to aid supervision and compliance with laws and regulations."

The convenience and real-time nature transactions facilitated by Fintech not only improve consumer experience, but also challenge the thinking and structures of traditional regulation, in addition to existing business models and industry characteristics. These challenges create both problems and opportunities, with great reference value for the new government in its promotion of Taiwanese Fintech regulatory and legal reform. For example, consumer rights protection and Anti-Money Laundering (AML) prevention are the two core tasks of financial supervision. These tasks can only be implemented through strict adherence to the law and implementation of standard Know Your Customer (KYC) operating procedures. Meanwhile, KYC procedures are also an important way for businesses to understand their customers' risk tolerance and management.

## 3. Regtech Development by Industry and Major Regulators

The cases in this study are mostly Fintech startups, mainly because their development speed and the pace of their innovation is faster than in banks, and because they are more integrated with Regtech. They still have value as reference to banks. Based on observation of overseas Regtech trends, the importance of financial regulation around the world, and the growth of Regtech startups, several findings can be drawn.

First - for regulators - after 2013, as the Fintech industry started to flourish,



regulators in various countries realized that its destructive innovation could have a considerable impact on financial regulation, and invested in Regtech research. When Fintech startups or large financial institutions apply AI, big data, blockchain, and cloud computing technologies to new financial services, regulators must supervise activities related to financing, and new technology is bound to play a role.

Second, Taiwan's Fintech startups will start entering the "regulatory sandbox." Banks can choose two paths. They can either create their own Regtech startups, while retaining the risk themselves, or they can cooperate with Regtech startups after they enter the sandbox. After expiration, equity purchases, along with technological development, can allow these startups to enter the banking system.

Third, most domestic Fintech startups are oriented around payments, online lending, blockchain, or Bitcoin. Startups related to regulation are rare; banks urgently need technology related to AML/counter-financing of terrorism (CFT) to reduce their compliance risks. Facing increasingly strict regulation around the world, they will need to increase their efforts in compliance, so demand for Regtech will continue to grow. In the long run, banks should invest in R&D related to this need.

#### **4. Analysis of International Regtech Trends and Banking Strategies**

Fintech innovation and development involves the highly regulated financial industry, therefore cooperation with regulators is essential to appropriately loosen financial regulations. Thus, the role of Regtech will become indispensable during the Fintech development process.

In the UK, the scope of the FCA's discussion on Regtech includes three parts. The first is the use of new technologies by regulators, borrowing such tools to improve their own efficiency and effectiveness in the face of market changes. The second is as a response to Fintech activities. When new Fintech activities involve financing, regulators must be proactive in supervision. The first stage of this process is to establish an experimental regulatory sandbox mechanism through joint efforts with industry. The third part is mainly initiated by financial institutions themselves, using technology to help themselves communicate operational and financial information to the authorities to reduce their costs and risks.

Regtech trends can be summarized as follows:<sup>1</sup>

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<sup>1</sup> Partially quoted from Zang Zhengyun (2016), [book] Zhang Zhengyun: The Leading Tide of Fintech Leads to a New Realm of Financial Supervision. CommonWealth Independent Commentary, January 19, 2016.



**(1) From Know Your Customer (KYC) to Know Your Digital Customer (KYDC):** In the past, KYC was implemented through direct contact with customers, but with Fintech, customers' identity verification, credit history, solvency, and risk tolerance can all be verified digitally. Thus, the KYC of the past will become KYDC. The key lies in the ability to understand, collect, and analyze various data including the consumption patterns of current and even potential customers, rather than just simple questions and answers or questionnaires.

**(2) Decentralized supervision:** Due to the decentralization of Fintech and blockchain technology, control of systemic risks has become more difficult than ever, and the traditional regulatory regime led by large banks and other objects of supervision has also been adjusted.

**(3) Inter-industry integration:** With the development of Fintech, financial service providers, may be dominated by mobile, network, and telecom operators (such as Kenya's M-PESA), in addition to banks, resulting in strong and dense inter-industry regulation requirements. Fintech has already expanded beyond the scope of the financial industry. Regtech requires denser inter-industry integration than with traditional finance, and regulators have begun to shoulder the task of inter-industry supervision.

**(4) Regulation without borders:** in the past, cross-border regulation focused on coordination between relevant regulators for financial institutions' cross-border operations. With the development of online financing technologies such as blockchain, Bitcoin, P2P financing, and crowdfunding, however – all examples of international purchasing, trading, or financing – issues of cross-border supervision are becoming increasingly prominent. Establishment of and cooperation with cross-national regulators is a top priority for the future.

**(5) Consumer-oriented regulation:** Technology comes from the intersection of interaction and creativity. Fintech emphasizes real-time, mobile, and interactive experiences. Customer experience has become an important part of Fintech services, and consumer protection has become the core of regulation.

**(6) Real-time supervision:** Traditional financial regulation adopts pre-designed procedures or standards, such as bank capital adequacy requirements, applying corresponding measures in different situations. The logic of Regtech allows regulators to monitor the security of financial services to achieve real-time supervision.

**(7) Cost-oriented supervision:** Regtech is a major innovation in regulation, using technology to reduce risks. The introduction of technological systems can greatly reduce



human resources requirements, direct costs, compliance costs, and litigation from supervision. The concept has been highly valued by developed countries like the UK.

**(8) Supervision including the function of industrial development:** The most important trend in Fintech regulation is supervision mechanism design, which seeks not only stability of the financial system, but also financial innovation. Regulators may adopt more experimental measures in the future.

## Conclusions

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After 2008, global financial regulation underwent comprehensive review, supplemented by new patterns brought about by Fintech, all of which has caused the industry to face more stringent scrutiny than in the past. Regtech helps financial institutions meet regulatory requirements and increase the effectiveness of their supervision. It has effectively resolved financial pain points and written a new chapter in financial regulation.

This study produced several conclusions:

First, various governments are actively providing Fintech startups, including Regtech, with experimental regulatory environments to promote their development. Thus, the development of a country's Fintech ecosystem is absolutely related to its recruitment of talent, foreign investment policies, legal climate, and the smoothness of its financing channels.

Second, many Regtech companies have been started around the world, focusing on AML/CFT, fraud, KYC requirements, risk management, and cybersecurity, etc. If these startups cooperate with financial institutions in the future, they can improve and expand Regtech, reducing banks' compliance risks.

Third, a good compliance environment is helpful for incubation of Fintech startups. Taiwan's civil law system, plus its tight regulation of the financial industry, means that modification of financial regulations is a time-consuming process. The regulatory sandbox under the Experimental Regulation on Fintech Development and Innovation, passed by the Legislative Yuan, will help Taiwan develop the industry. With increasing regulatory requirements, Regtech startups will see increasing opportunities.



Fourth, following the rapid development of the Fintech industry, regulators realized that its disruptive innovation may have a considerable impact on regulation. When Fintech startups or large financial institutions apply AI, big data, blockchain, and cloud computing technologies to new financial services, financial regulators must supervise businesses related to financing, and new technology is bound to play a role.

This study makes the following recommendations regarding these points:<sup>2</sup>

**1. Develop risk-oriented regulation:** The financial industry should identify, evaluate, measure, monitor, and respond to risks from a process-oriented perspective. New businesses or products should also be managed through a risk-based framework. Emerging Fintech businesses must identify potential risks and understand the impacts of processes, personnel, systems, and other factors. Cybersecurity is a director-level matter of corporate governance, not just IT. Boards must focus on organizational risks, determining task sequencing and risk tolerance, and approving budgets based on current and anticipated future changes.

**2. Orient internal audit planning around risks:** Audit departments should focus on identifying urgent risks and trends, effectively explain and fix previously identified deficiencies, be responsible for audits, manage the corrective actions taken, and then report the results and trends to the risk management committee and audit small working group. The internal control and business departments should work together to strengthen the control environment. Technology/infrastructure and strategy/support departments and policy compliance groups should also work together on these tasks.

**3. Emphasize technology-oriented supervision:** The contribution of IT to regulatory compliance has manifested in recent years mainly through KYC processes. Traditional KYC is achieved through real interpersonal interactions with customers, but credit records, solvency checks, and risk orientation with Fintech requires 'digital interaction – a transformation from KYC to KYDC. No matter how fast Fintech pursues economic efficiency, transaction security is still the core value of finance. Any certification method must be based on the principle of securing customers' assets and property.

**4. Proactively use Regtech for joint security in response to stricter international regulation:** Banks should further strengthen joint cybersecurity mechanisms. This process is divided into pre-event defense, and post-event response and forensics. The former stage involves SOP for reporting security incidents, security contingency plans, and

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<sup>2</sup> The first four points in this section are cited from Lin Shijie (2017) Discussion on Important 2018 International Trends in Financial Supervision, published in Deposit Insurance Quarterly. The author is a member of our research team.



regular drills, allowing banks to transform cybersecurity response measures into a part of the workflow. The latter stage involves simulating contingency measures, including the collection and storage of digital evidence, and collection, storage, and preliminary analysis of evidence after the event. Contingency strategies can enhance financial institutions' countermeasures against hacking and help build their digital identification and communication skills.

**5. Strengthen the use of Regtech accelerators and drills:** Regtech incubators should be strengthened. For example, the Taipei Computer Association once held a national hack-a-thon, involving many schemes for robotic financial managers, but their supervision did not attract much attention. Therefore, the future need is for a compliance accelerator to provide resources for regulators. In May 2015, Australia announced the establishment of a Regtech Liaison Forum to facilitate entrance by manufacturers into Regtech.

**6. Cooperate with Regtechs as early as possible:** Fintech startups will soon enter Taiwan's regulatory sandbox system. Taiwanese banks can consider three paths in response. In the first, they create the technology themselves, and recruit the required experts to build related systems. In this case however, banks still bear all risk, along with the expense and the possibility of failure. The second path is to cooperate with Regtech companies after they enter the sandbox. The bank acquires the necessary technology or service, while the technology specialist understands their needs. After the sandbox period expires, the bank can bring the startup into its system through equity purchase, and together they can develop technology suitable for the bank. The third path is to directly purchase compliance systems from large vendors, as in the past.

**7. Research Regtech and Train Experts:** Banks should appropriately invest in Regtech R&D to facilitate future regulatory requirements. For personnel training, they can cooperate with tertiary institutions or training institutions, preventing an imbalance from overconcentration of expertise in the fields of payments, online lending and blockchain, while preventing the emergence of a "learning gap" between Taiwanese university graduates and industry. In addition, Taiwan currently lacks both theoretical and practical technological expertise, and may need to recruit from other majors such as chemicals or climatology. In terms of training, a number of colleges and universities have adopted MBA formats such as two-in-one specialized training.

**8. Regtech development priorities:** Regtech application – with important roles in increasing efficiency financial services and regulators around the world, and in reducing information asymmetry and auditing costs – is at the core of Taiwan's emerging Fintech



ecosystem. Through real-time, instant and integrated big data analysis, companies can quickly and extensively gather regulatory and legal updates from various countries, as well as international cases and real-time analysis on them, so that they can respond immediately, reducing operational and risk control costs. Important priorities for Regtech are prevention and early warning systems for financial crimes, network risk monitoring mechanisms, real-time monitoring and management for big data transaction records, AI analysis of regulatory reports, and financial consumer protection mechanisms.

**9. Model policies for Fintech promotion:** Even with its various subjective and objective disadvantages, Israel still attracts large amounts of foreign capital, despite its size. Its most important advantage is still the power of the government to support the development of emerging industries, including Fintech. The Taiwanese government is likewise actively promoting Fintech development, effectively integrating the resources of venture capital, professional experts, and startups to stimulate the vitality of the Fintech industry.