



Information Paper

APAC Funds Processing Automation and Standardisation Report

Tracking industry progress
2019 Report

Contents

1	Background	3
2	Report Highlights	4
2.1	Automation and standardisation of fund orders in Hong Kong, Taiwan and Singapore	4
2.2	Automation and standardisation of fund orders in Hong Kong	4
2.3	Automation and standardisation of fund orders in Taiwan	5
2.4	Automation and standardisation of fund orders in Singapore	5
3	Automation and Standardisation of Fund Orders in Hong Kong, Taiwan and Singapore	6
3.1	Total order volume evolution	6
3.2	Total automation and standardisation rates	7
4	Automation and Standardisation of Fund Orders in Hong Kong	9
4.1	Hong Kong Order Volume Evolution	9
4.2	Hong Kong Automation and Standardisation Rates	10
5	Automation and Standardisation of Fund Orders in Taiwan	13
5.1	Taiwan order volume evolution	13
5.2	Taiwan automation and standardisation rates	13
6	Automation and Standardisation of Fund Orders in Singapore	15
6.1	Singapore order volume evolution	15
6.2	Singapore automation and standardisation rates	16
7	Next report	17

1. Background

Over the past decade, the Asia Pacific region has observed impressive growth in the funds segments. Concurrently, there has been a strong demand to improve the levels of operational efficiency, particularly through the standardisation and automation in the funds processing space.

Recognising these drivers and trends, there has also been a call for greater harmonisation of financial standards and market practices. Along with the mandatory ISO 20022 migration in near foreseeable future, it is important for the industry to be aware and focus on the fund processing standardisation and automation rates across APAC.

The main objective of the APAC Funds Processing Automation and Standardisation report is to provide periodic information on key funds markets in the region of the industry's progress towards increased levels of automation of fund orders and the use of ISO standards. Users of this report include market players involved in funds processing transaction flow, asset managers, regulators & policy makers and other interested stakeholders.

This report covers data for the full-year 2019, collected from transfer agents based in key APAC fund processing centres - Hong Kong, Taiwan and Singapore. The report combines the data across these markets into a single fund processing report providing the following views:

- An aggregated view on these 3 fund processing centres together;
- A detailed overview per fund processing centre (Hong Kong, Singapore and Taiwan separately); and
- A regional perspective of fund processing STP rates per fund processing centre.
- The scope of funds coverage are both domestic & cross border

This inaugural publication of the APAC Fund Processing Automation and Standardisation report was developed with the support of the Asia Funds Automation Consortium (AFAC), the Hong Kong Investment Funds Association (HKIFA), the Association of the Luxembourg Fund Industry (ALFI) and their members. SWIFT and its supporting partners plan to publish two reports per year, which will be available on SWIFT and respective partners' official websites.

For the European region, SWIFT collaborates on a similar effort with the European Fund and Asset Management Association (EFAMA) to publish reports on trends since 2009, in standardisation and automation rates of fund orders received by transfer agents (TAs) in Luxembourg and Ireland. The published bi-yearly reports showing the evolution of standardisation and automation of fund orders are available on both EFAMA and SWIFT official websites.

2. Report Highlights

2.1 Automation and standardisation of fund orders in Hong Kong, Taiwan and Singapore

- **2019 survey coverage: 22 transfer agents¹ (TAs)** contributed to the survey
 - a. **10 Hong Kong-based TAs**
 - b. **8 Taiwan-based TAs**
 - c. **4 Singapore-based TAs**

- **Total automation rate²** of orders increased to **83.4% in Q4 2019** compared to 75.5% in Q4 2018.
- **ISO automation rate³** reached **39.5%** in Q4 2019 compared to 33.2% in Q4 2018.
- **Proprietary FTP rate** reached **43.9%** in Q4 2019 compared to 42.3% in Q4 2018.

- The **order volumes** processed by the 22 survey contributors reached **8.1 million orders** in 2019 compared to 6.6 million in 2018.
- The **22-surveyed TAs manually processed 1.5 million orders in 2019**. Manual process rates decreased to 16.6% in Q4 2019 compared to 24.5% in Q4 2018.

Fund orders automation and standardisation progress overview

GLOBAL OVERVIEW	Q4 2017	Q4 2018	Q4 2019	Change 18 - 19
Manual orders	30.5%	24.5%	16.6%	-7.9%
ISO automated orders	31.9%	33.2%	39.5%	6.3%
Proprietary FTP orders	37.6%	42.3%	43.9%	1.6%
Total automated	69.5%	75.5%	83.4%	7.9%

Table 1 - Automation and standardisation rate evolution (Q4 data)

2.2 Automation and standardisation of fund orders in Hong Kong

- **2019 survey coverage: 10 TAs⁴ contributed.**
- The **total automation rate of orders** processed by Hong Kong TAs reached

- **75%** in Q4 2019 compared to 63.8% in Q4 2018.
- The **ISO automation rate** reached 43.3% % in Q4 2019 compared to 27.2% in Q4 2018. The rate of **proprietary FTP** reached **31.7%** in Q4 2019 compared to 36.5% in Q4 2018, and the **manual**

- **orders** decreased to **25%** in Q4 2019 compared to 36.2% in Q4 2018.
- The **order volumes** processed by Hong Kong TAs reached **3.8 million** during in 2019 compared to 2.8 million in 2018.

Fund orders automation and standardisation progress overview

GLOBAL OVERVIEW	Q4 2017	Q4 2018	Q4 2019	Change 18 - 19
Manual orders	38.3%	36.2%	25%	-11.2%
ISO automated orders	22.2%	27.3%	43.3%	16%
Proprietary FTP orders	39.5%	36.5%	31.7%	-4.8%
Total automated	61.7%	63.8%	75%	11.2%

Table 2 - Hong Kong automation and standardisation rate evolution (Q4 data)

1 One transfer agent could not participate for this end-year report.

The data for all year are included in this report for one transfer agent that could not provide us with his data at the time for the first part of 2019.

2 The 'total automation rate' is the sum of the 'ISO automation rate' + the 'proprietary formatted ftp' rate. This is based on combined figures of the surveyed markets.

3 The 'ISO automation rate' corresponds to the standardisation rate, i.e. the rate of automated orders using an ISO format (ISO 20022 or ISO 150222 'fund template').

4 The data for all year are included in this report for one transfer agent that could not provide us with his data at the time for the first part of 2019.

2.3 Automation and standardisation of fund orders in Taiwan

- **2019 survey coverage: 8 TAs⁵ contributed.**
- The **total automation rate** of orders processed by Taiwan TAs reached **92.4%** in Q4 2019 compared to 84.1% in Q4 2018.

- The percentage of automated orders based on **ISO messaging standards** reached **34.8%** in Q4 2019 compared to 42.6% in Q4 2018. The rate of **proprietary FTP** orders increased to **57.6%** in Q4 2019 from 41.5% in Q4 2018. The **manual orders** decreased to **7.6%** in Q4 2019 compared to 15.9% in Q4 2018.

- The **order volumes** processed by Taiwan TAs reached **3.8 million** in 2019 compared to 2.9 million in 2018.

Fund orders automation and standardisation progress overview

GLOBAL OVERVIEW	Q4 2017	Q4 2018	Q4 2019	Change 18 - 19
Manual orders	18.3%	15.9%	7.6%	- 8.3%
ISO automated orders	44.2%	42.6%	34.8%	- 7.8%
Proprietary FTP orders	37.5%	41.5%	57.6%	16.1%
Total automated	81.7%	84.1%	92.4%	8.3%

Table 3 - Automation and standardisation rate evolution (Q4 data)

2.4 Automation and standardisation of fund orders in Singapore

- **2019 survey coverage: 4 TAs contributed.**
- The **total automation rate** of orders processed by Singapore TAs decreased to

71.6% in Q4 2019 compared to 83.8% in Q4 2018.

- The percentage of automated orders based on **ISO messaging standards** reached 50.7% in Q4 2019 compared to **22.1%** during Q4 2018. The rate of proprietary FTP orders decreased to

20.9% in Q4 2019 compared to 61.7% in Q4 2018. The **manual orders** increased to **28.4%** in Q4 2019 compared to 16.2% in Q4 2018.

- The **order volumes** processed by Singapore TAs reached **0.5 million** in 2019.

Fund orders automation and standardisation progress overview

GLOBAL OVERVIEW	Q4 2017	Q4 2018	Q4 2019	Change 18 - 19
Manual orders	43.8%	16.2%	28.4%	12.2%
ISO automated orders	30.8%	22.1%	50.7%	28.6%
Proprietary FTP orders	25.4%	61.7%	20.9%	- 40.8%
Total automated	56.2%	83.8%	71.6%	- 12.2%

Table 4 - Hong Kong automation and standardisation rate evolution (Q4 data)

⁵ The data for all year are included in this report for one transfer agent that could not provide us with his data at the time for the first part of 2019.

3. Automation and Standardisation of Fund Orders in Hong Kong, Taiwan and Singapore

3.1 Total order volume evolution

In 2019, 8 million orders have been processed by the 22 survey contributors across Hong Kong, Taiwan and Singapore⁶. This represents an average volume of 0.67 million orders per month.

(in millions)	2018	2019
Total number of orders	6.6	8
Monthly average	0.55	0.67

Table 5 - Total order volume 2018 - 2019

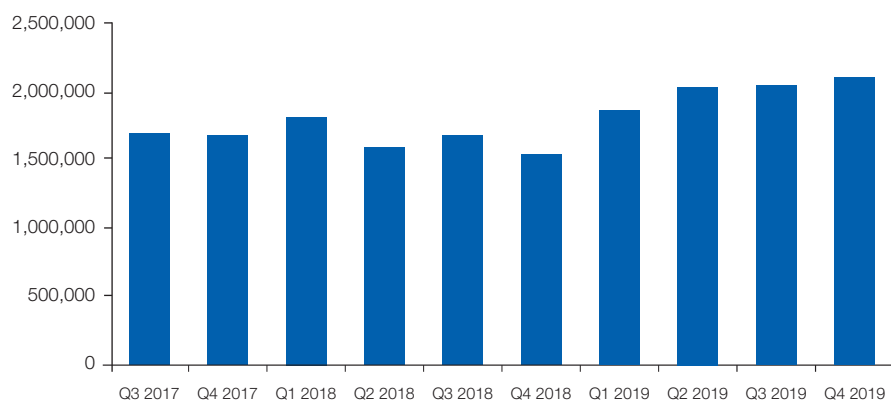


Figure 1 - Total order volume evolution Q3 2017 - 2019

⁶ Survey data collected are based on voluntary contributions by participating entities. Estimated market coverage is currently not available in this edition of the report publication.

3. Automation and Standardisation of Fund Orders in Hong Kong, Taiwan and Singapore

3.2 Total automation and standardisation rates

Total automation rate

The total automation rate reached 83.4% in Q4 2019 compared to 75.5% in Q4 2018.

Total automation rate	Q1	Q2	Q3	Q4
2017			67.3%	69.5%
2018	65.4%	67.8%	73.9%	75.5%
2019	80.1%	81.4%	81.8%	83.4%

Table 6 - Total automation rate evolution Q3 2017 - 2019 (by quarter)

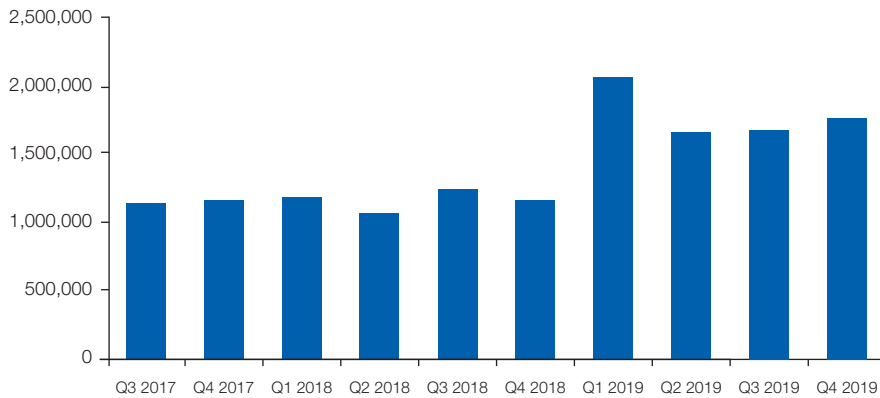


Figure 2 - Total automation order volume evolution Q3 2017 - 2019

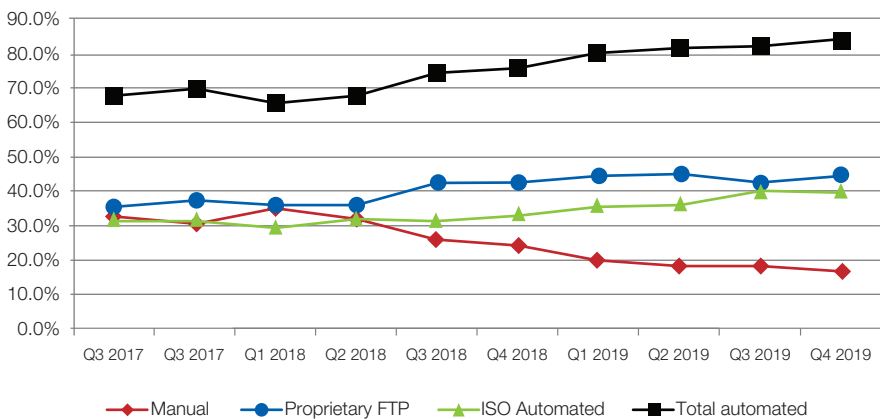


Figure 4 - Total fund order processing volume evolution Q3 2017 - 2019

Total standardisation rate

The use of the ISO messaging standard reached 83.4% in Q4 2019 compared to 75.5% in Q4 2018. The adoption of proprietary FTPs reached 43.9% in Q4 2019 compared to 42.3% in Q4 2018, and the share of manual orders reached 16.6% in Q4 2019 compared to 24.5% in Q4 2018.

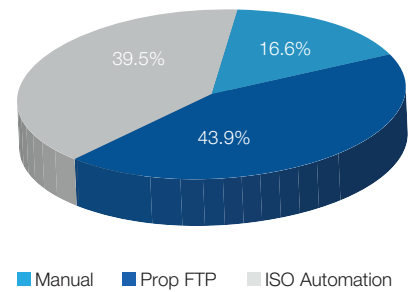


Figure 3 - Total fund order processing rates Q4 2019

4. Automation and Standardisation of Fund Orders in Hong Kong

4.1 Hong Kong Order Volume Evolution

In 2019, the 10 Hong Kong survey contributors processed 3.8 million orders. This represented a monthly average of 0.31 million orders.

(in millions)	2018	2019
Total number of orders	2.8	3.8
Monthly average	0.23	0.32

Table 7 - Hong Kong order volume 2018 - 2019

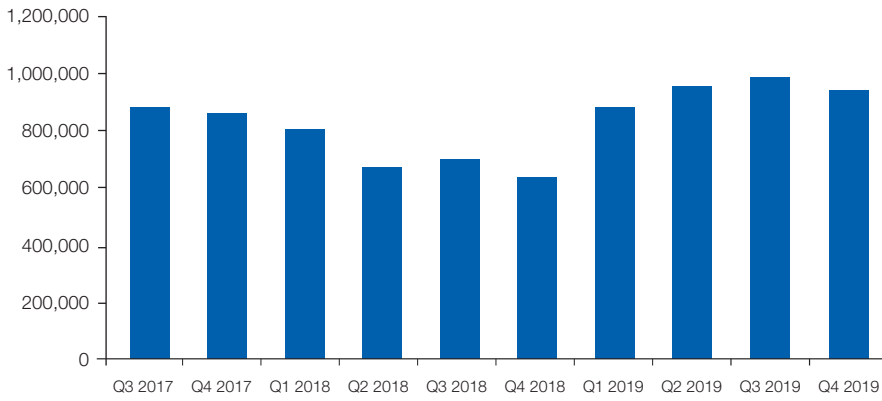


Figure 5 - Hong Kong order volume evolution Q3 2017 - 2019

4. Automation and Standardisation of Fund Orders in Hong Kong

4.2 Hong Kong Automation and Standardisation Rates

Hong Kong automation rate

The total automation rate increased to 75% in Q4 2019 compared to 63.8% in Q4 2018.

Total automation rate	Q1	Q2	Q3	Q4
2017			58.3%	61.7%
2018	60.6%	62.3%	61.6%	63.8%
2019	71.1%	73.5%	73.8%	75.0%

Table 8 - Hong Kong total automation rate evolution Q3 2017 - 2019 (by quarter)

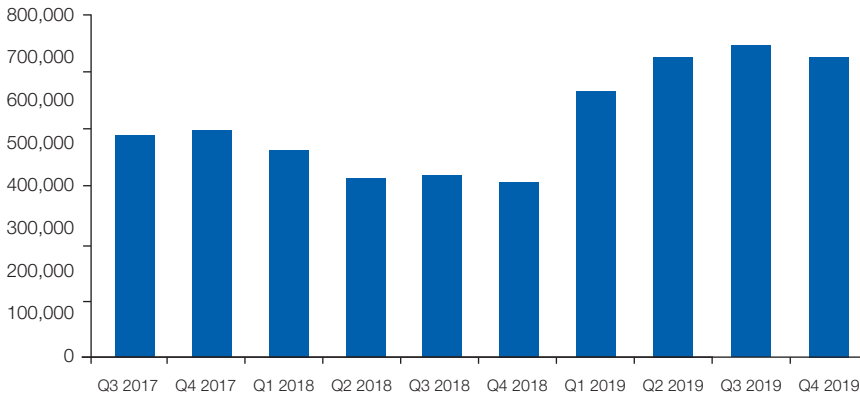


Figure 6 - Hong Kong total automation order volume evolution Q3 2017 - 2019

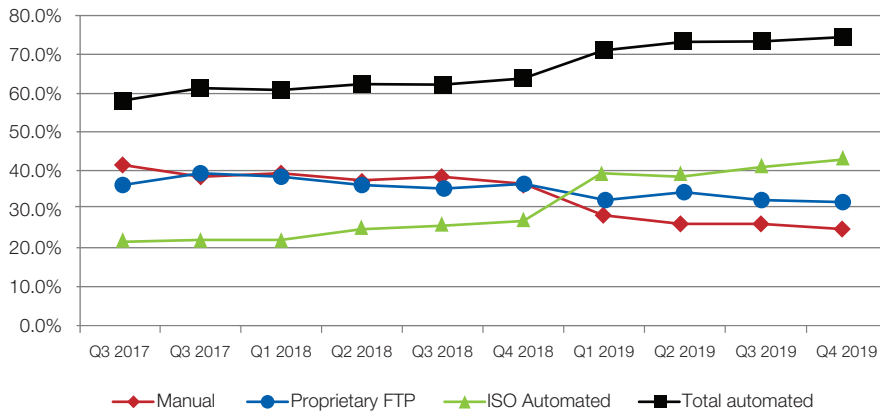


Figure 8 - Hong Kong total fund order processing volume evolution Q3 2017 - 2019

Hong Kong standardisation rate

The use of ISO increased to 43.3% in Q4 2019 compared to 27.3% in Q4 2018, and the adoption of proprietary formats decreased to 31.7% in Q4 2019 compared to 36.5% in Q4 2018. The share of manual orders decreased to 25% in Q4 2019 compared to 36.2% in Q4 2018.

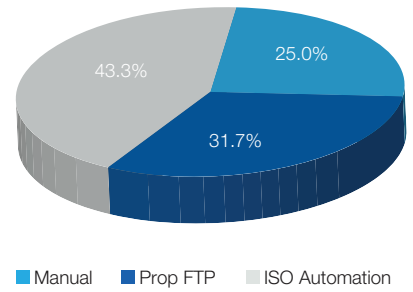


Figure 7 - Hong Kong fund order processing rates Q4 2019

5. Automation and Standardisation of Fund Orders in Taiwan

5.1 Taiwan order volume evolution

In 2019, the 8 Taiwan survey contributors processed 3.8 million orders. This represented a monthly average of 0.32 million orders.

(in millions)	2018	2019
Total number of orders	2.9	3.8
Monthly average	0.24	0.32

Table 9 - Taiwan order volume 2018 - 2019

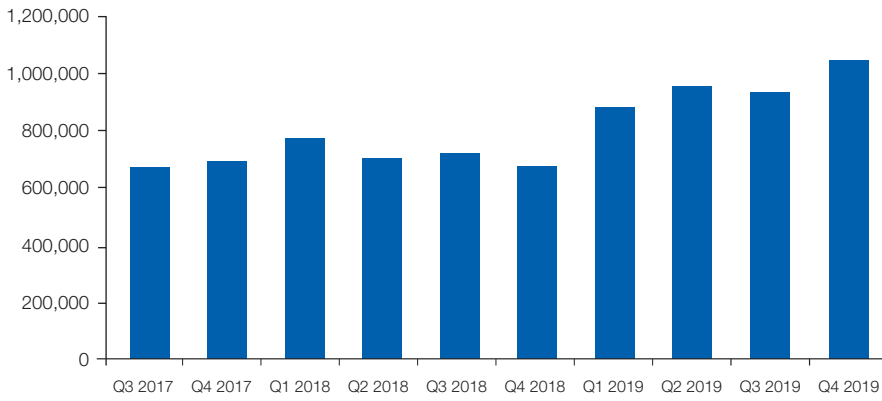


Figure 9 - Taiwan order volume evolution Q3 2017 - 2019

5. Automation and Standardisation of Fund Orders in Taiwan

5.2 Taiwan automation and standardisation rates

Taiwan automation rate

The total automation rate increased to 92.4% in Q4 2019 compared to 84.1% in Q4 2018⁷.

Total automation rate	Q1	Q2	Q3	Q4
2017			80.5%	81.7%
2018	80.3%	82.6%	82.5%	84.1%
2019	90.3%	90.5%	91.5%	92.4%

Table 10 - Taiwan total automation rate evolution Q3 2017 - 2019 (by quarter)

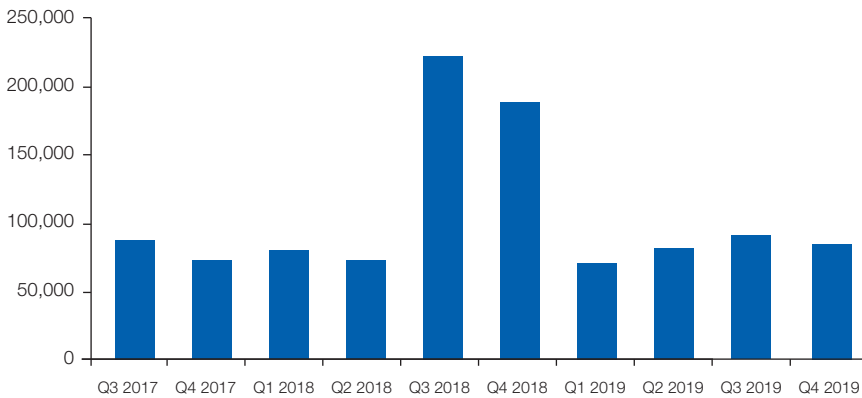


Figure 10 - Taiwan total automation order volume evolution Q3 2017 - 2019

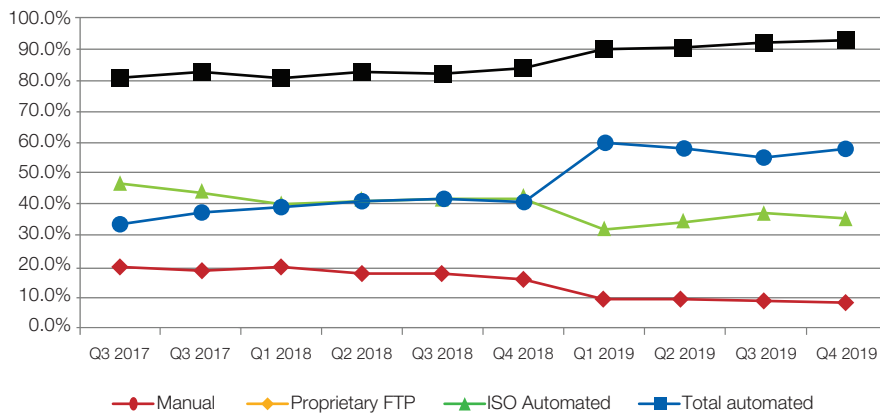


Figure 12 - Taiwan total fund order processing volume evolution 2017 - 2019

The use of ISO reached 34.8% in Q4 2019 compared to 42.6% in Q4 2018, and the adoption of proprietary formats increased to 57.6% in Q4 2019 compared to 41.5% in Q4 2018. The share of manual orders decreased to 7.6% in Q4 2019 compared to 15.9% in Q4 2018.

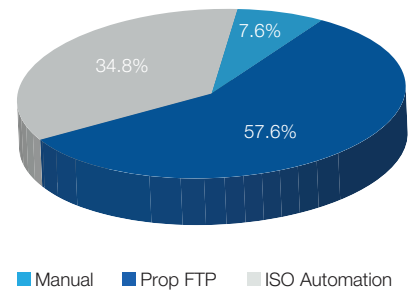


Figure 11 - Taiwan fund order processing rates Q4 2019

⁷ The percentage of total automation rate recorded for Taiwan is likely due to the automated funds order service offered by the Taiwan Depository & Clearing Corporation (TDCC).

6. Automation and Standardisation of Fund Orders in Singapore

6.1 Singapore order volume evolution

In 2019, the 4 Singapore survey contributors processed 0.46 million orders. This represented a monthly average of 0.038 million orders.

(in millions)	2018	2019
Total number of orders	0.94	0.46
Monthly average	0.078	0.038

Table 11 - Singapore order volume 2018 - 2019

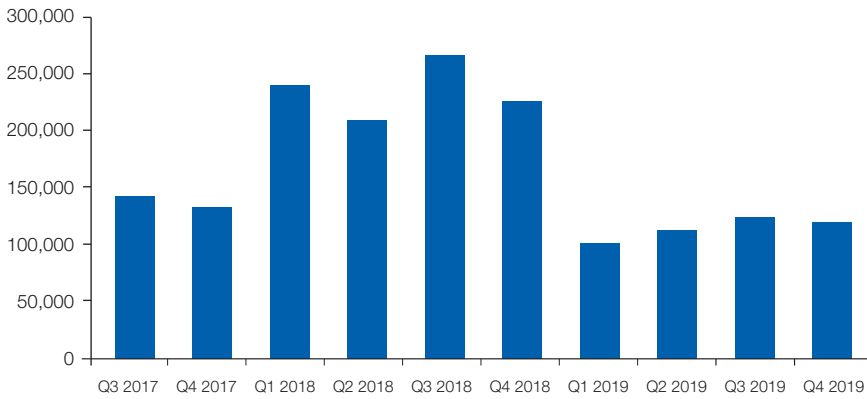


Figure 13 - Singapore order volume evolution Q3 2017 - 2019

6. Automation and Standardisation of Fund Orders in Singapore

6.2 Singapore automation and standardisation rates

Singapore automation rate

The total automation rate decreased to 71.6% in Q4 2019 compared to 83.8% in Q4 2018.

Total automation rate	Q1	Q2	Q3	Q4
2017			62.4%	56.2%
2018	33.9%	35.7%	83.0%	83.8%
2019	71.0%	72.0%	72.8%	71.6%

Table 12 - Singapore total automation rate evolution Q3 2017 - 2019 (by quarter)

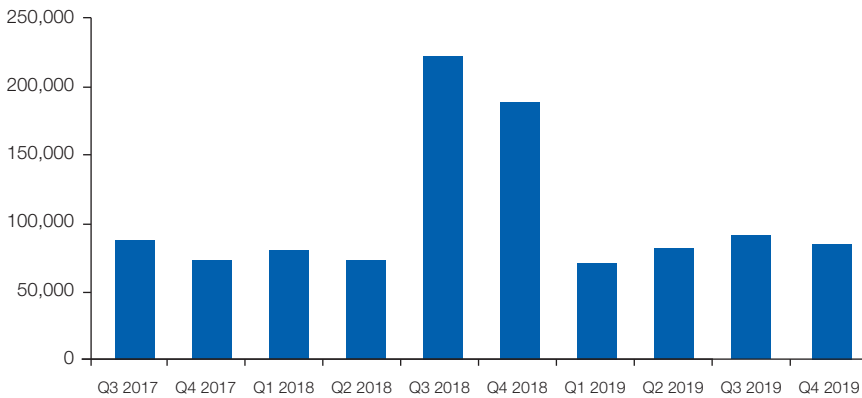


Figure 16 - Singapore total fund order processing volume evolution Q3 2017 - 2019

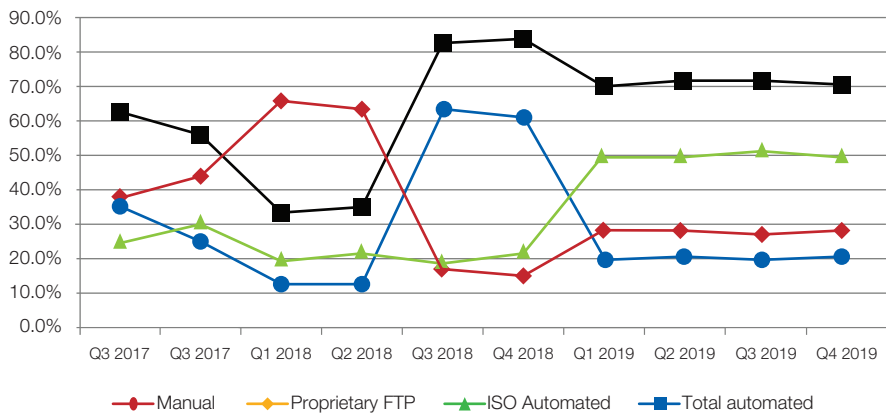


Figure 8 - Hong Kong total fund order processing volume evolution Q3 2017 - 2019

Singapore standardisation rate

The use of ISO reached 50.7% in Q4 2019 compared to 22.1% in Q4 2018, and the adoption of proprietary formats drop to 20.9% in Q4 2019 compared to 61.7% in Q4 2018. The share of manual orders increased to 28.4% in Q4 2019 compared to 16.2% in Q4 2018.

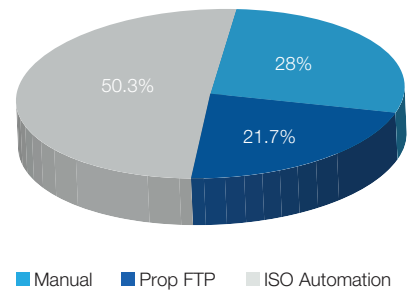


Figure 15 - Singapore fund order processing rates Q4 2019

7. Next report

The next joint SWIFT APFAS Report is planned for publication in Q4 2020 and will cover the July 2017 – June 2020 progress in standardisation rates across the three funds processing centres, Hong Kong, Taiwan and Singapore.



About SWIFT

SWIFT is a global member-owned cooperative and the world's leading provider of secure financial messaging services. We provide our community with a platform for messaging, standards for communicating and we offer products and services to facilitate access and integration; identification, analysis and financial crime compliance. Our messaging platform, products and services connect more than 11,000 banking and securities organisations, market infrastructures and corporate customers in more than 200 countries and territories, enabling them to communicate securely and exchange standardised financial messages in a reliable way. As their trusted provider, we facilitate global and local financial flows, support trade and commerce all around the world; we relentlessly pursue operational excellence and continually seek ways to lower costs, reduce risks and eliminate operational inefficiencies.

Headquartered in Belgium, SWIFT's international governance and oversight reinforces the neutral, global character of its cooperative structure. SWIFT's global office network ensures an active presence in all the major financial centres.

For more information about SWIFT, visit www.swift.com

Copyright

Copyright © SWIFT SC, 2020 — all rights reserved.

Disclaimer

SWIFT supplies this publication for information purposes only. The information in this publication may change from time to time. You must always refer to the latest available version.

Contacts

For more information about this paper, contact

Suju Kwon,
Securities and FX Markets, APAC
Suju.KWON@swift.com