



Exchange Settlement Account System

*Report to
accountholders*

30 June 2019

Reserve Bank of New Zealand,

August 2019



Directory

Exchange Settlement Account System ('ESAS')

System Operator: Reserve Bank of New Zealand ('Reserve Bank')

Email: rtgshelpdesk@rbnz.govt.nz

Telephone: (64) (4) 471 3918

Fax: (64) (4) 471 3712

Website: www.rbnz.govt.nz/markets_and_payment_operations/esas/

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Year ended 30 June 2019

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System overview

About ESAS

ESAS is New Zealand's principal high-value payments system which is used to settle payment instructions between accountholders. The system is charged with providing an efficient and safe process for the real time electronic settlement of payments between accountholders.

The Reserve Bank has provided ESAS as a real-time gross settlement system ('RTGS') since 1998. Accountholders electronically submit instructions to debit an account and credit another account using an authorised electronic submitting mechanism. Authorised submitting mechanisms include closed user groups which use the SWIFT electronic messaging system, the NZClear system and direct entry of transaction details to ESAS. The system is available for use by accountholders for 23.5 hours each business day. Each business day begins at 9.00 am on a working day and ends at 8.30 am the following working day.

A payment will be settled (i.e. funds are transferred from one ESAS accountholder's exchange settlement account to another ESAS accountholder's exchange settlement account) once a transaction instruction is authenticated, the payment instruction is authorised by the payer and the payer has sufficient funds in their exchange settlement account to effect the transaction. Once a transaction is settled it cannot be revoked.

The ESAS system is owned and operated by the Reserve Bank on a cost-recovery basis. The Reserve Bank's Banking Department is responsible for administering the operational aspects of the System. The Banking Department is headed by Steve Gordon. Day-to-day business support is provided by the Payment and Settlement Services Team managed by the Acting Manager of Payments and Settlement Services, Jaimee Taylor-Burt.

Banking Department reports on the operation of NZClear to Christian Hawkesby, the Reserve Bank's Assistant Governor/ General Manager, Economics, Financial Markets and Banking.

The Reserve Bank's Digital Services Group supports the telecommunications network and related security features used by the system. Software support, software development and operational support services are provided by Datacom Systems Limited ('Datacom').

The aggregate level of liquidity in the ESAS system is managed by the Reserve Bank's Financial Markets Department ('FMD'). FMD injects or withdraws liquidity from the system by undertaking transactions such as reverse repurchase agreements, foreign currency swap transactions, and issuance of Reserve Bank Bills. FMD's objective is to ensure that there is adequate aggregate liquidity in the system to ensure the efficient

operation of payments, while also maintaining short-term wholesale interest rates at levels close to the Official Cash Rate. Typically aggregate system liquidity is maintained in the range of \$7 billion to \$9 billion.

ESAS is a designated settlement system under Part 5C of the Reserve Bank Act 1989. The regulator is the Supervision Department ('SD'), part of the Reserve Bank's Financial Stability Group. Institutional arrangements ensure that dealings between the Banking Department and SD occur on an arm's length basis.

Management commentary

Key performance statistics for the year ended 30 June 2019

Key performance indicator	2019	2018
System availability (%)	99.2	99.93
Average daily transaction volume	12,719	13,118
Average daily transaction value (\$billion)	31.1	30.6
Operating expenses (\$000)	3,052	3,325
Customer satisfaction meets or exceeds expectations (%)	95	100

Operations and development

The average value transacted through the system each day increased 1.6% over the 2018-19 year, while total transaction volumes for ESAS

declined 3.0%. Transaction volume growth occurred for Settlement Before Interchange (SBI) (9.3%), however transaction volumes reduced for both SWIFT transactions (down 4.6%) and NZClear transmission channels (down 3.0%).

The system has limited downtime with system availability recorded at 99.92%, in line with the target of 99.90% availability. There was one incident in January 2019 when all users experienced a slow-down in processing due to a faulty disk which was subsequently replaced.

Operating costs reflects the fact that the current system is now fully depreciated - see the Finance section below. The Payment System Replacement programme is now nearing completion and once live will ensure a costly and complex upgrade of the current system is avoided.

The Payment Systems Replacement Programme encompasses replacement of both the ESAS and NZClear systems as well as the establishment of new infrastructure, security and support services. The Programme has made significant progress over the last year, although the go-live timing has been pushed back while the Bank ensures that the software quality is at a standard acceptable for release to the industry. Whilst the delivery of a quality product remains our highest priority the Programme also remains highly focused on a timely go-live as soon as practicable in early 2020.

Testing of the new ESAS system is largely completed and go-live is dependent on completion of testing of the new NZClear system. The industry supported the Bank in delaying the start of industry acceptance testing for NZClear to ensure more efficient testing and reduction in rework. An announcement regarding an expected go-live date will be made when the final software testing quality gate is passed.

During this last year we have continued to actively liaise with members through a significant change programme. This programme is designed to ensure that ESAS accountholders become familiar with the new software and undertake the necessary consequential changes in their own operations. Preliminary planning and assurance activities for go-live are well advanced.

In addition to the Payment Systems Replacement Programme of work, the Bank implemented SWIFT version 7.2 and enhanced security in line with SWIFT's Customer Security Programme. This has materially enhanced security of the payments eco-system.

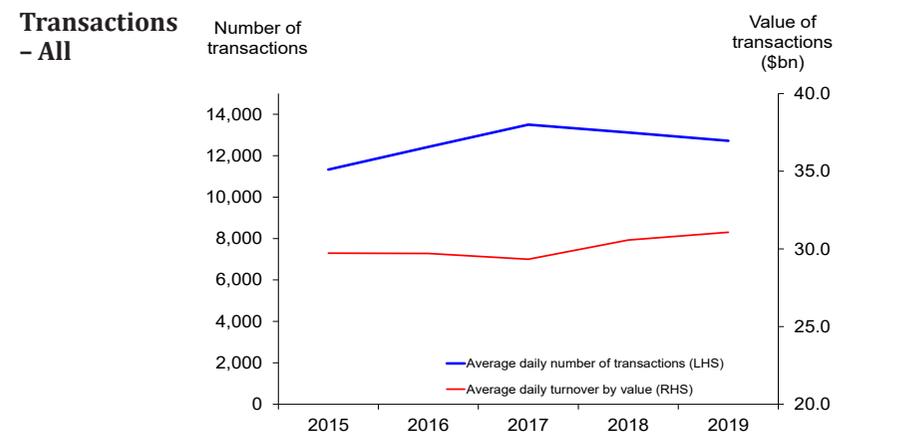
The Payment Systems Replacement Programme provides the Bank with a strong and modern platform that will allow the Bank to be responsive to changes in members' needs. The Bank has invited users to nominate functional enhancements which will be evaluated and prioritised for post go-live delivery. The Bank recognises that with rapid changes in technology it is important that we work closely with industry to ensure on-going development and a continued drive for efficiency.

Joint regulators have been briefed on the programme's progress.

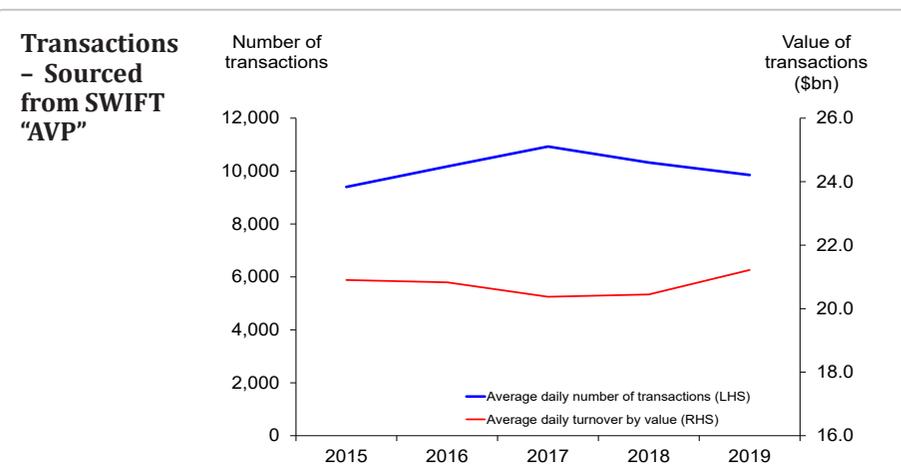
Key statistics

There are three primary interfaces or “Accountholder Submitting Systems” which are used by ESAS Accountholders to submit payment instructions to ESAS:

- directly from the NZClear system.
- via the SWIFT system where members of the Assured Value Payment “AVP” closed user group use ESAS to pay other members of that closed user group. The Reserve Bank is the administrator of the AVP closed user group.
- via the SWIFT system where members of the Settlement Before Interchange “SBI” closed user group use ESAS to pay other members of that closed user group. Payments NZ Limited is the administrator of the SBI closed user group. Once an SBI settlement has been effected in ESAS, a confirmation is sent to SWIFT which then allows an associated interchange file containing underlying payment details to be released to the destination bank.

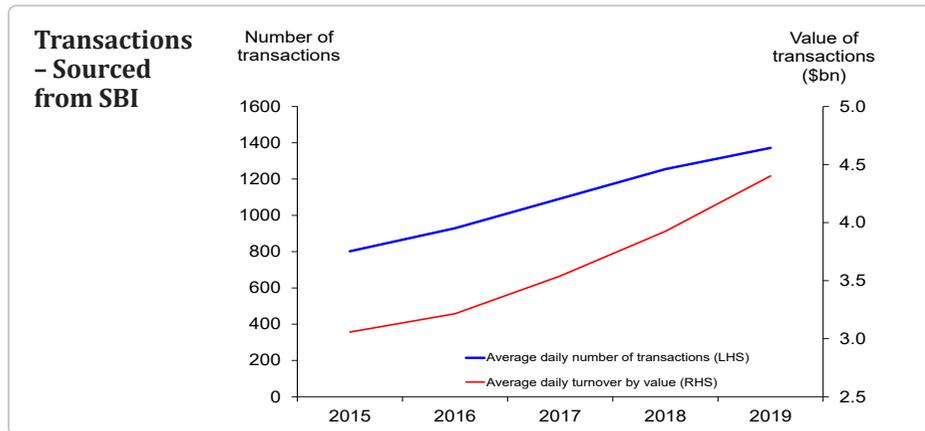


- The 2018-19 year saw volumes decline, the third year of reduction in volumes. Overall average daily transaction volumes declined by 3.0%. Daily average values increased by 1.6% from \$30.6 billion per day to \$31.1 billion per day.

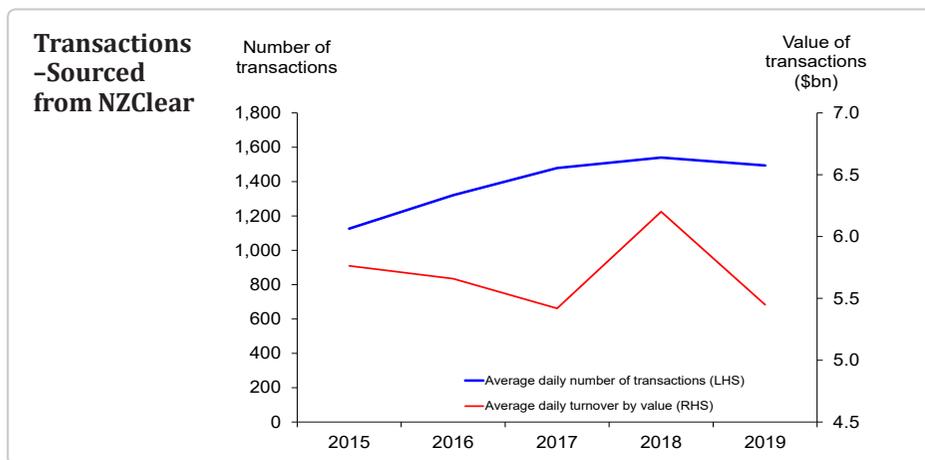


- The SWIFT AVP closed user group remains the primary feeder system to ESAS. Of all transactions processed by ESAS, 77% by transaction volume (68% by transaction value) are submitted through this channel.

- Transaction volumes for the AVP closed user group declined by 4.6% to an average 9,853 transactions per day. Transaction values increased by 3.8% to \$21.2 billion on average per day.



- The SBI interface to ESAS began operation in February 2012. Volumes continue to grow steadily as banks submit more files to ESAS during the banking day. In 2018-19 the average number of transactions per day increased by 9.3% to 1,372 per day and average daily values increased by 12.2% to \$4.4 billion per day.



- The 2018-19 year saw transactions sourced from the NZClear system decline due to the phasing out of the cash function in NZClear. Volumes reduced by 3.0% to 1,494 transactions per day and value reduced by 12.1% to \$5.4 billion per day.

System outages year ended 30 June (hours:mins)

	2015	2016	2017	2018	2019
Application - all users	0:00	0:00	0:00	2:26	3:23
Application - subset of users	5:30	6:04	2:09	0:30	0:00
Connectivity	0:00	0:33	2:57	0:00	0:00

- The system was available 99.92% during core support hours and exceeded target availability of 99.90%. In January 2019 availability was impacted when processing of settlements slowed due to a faulty disk which was subsequently replaced.

Customer satisfaction

	2015	2016	2017	2018	2019
Exceed expectations	74%	88%	82%	84%	86%
Meet expectations	26%	12%	18%	16%	9%
Does not meet expectations	0%	0%	0%	0%	5%
Total	100%	100%	100%	100%	100%

- The 2019 annual customer satisfaction survey showed that customer satisfaction remains at a high level although there was a slight decline in overall satisfaction from the levels reported in prior years.

Risk management

The internal controls of ESAS are audited each year by PricewaterhouseCoopers (“PwC”), as required by the ESAS Terms and Conditions. PwC acts on behalf of the Reserve Bank’s external auditor, the Auditor-General. The scope of this audit includes the controls performed by the Reserve Bank’s third party independent service provider, Datacom. The Auditor’s annual assurance report is addressed to the Governor of the Reserve Bank and is reviewed by the Reserve Bank Audit Committee, with external auditors, Reserve Bank governors and management in attendance. A copy of the assurance report is sent to accountholders. Audit findings and recommendations are reviewed and progress in implementing agreed actions is monitored.

ESAS is also subject to periodic internal audits by the Reserve Bank’s Audit Services division.

Regular penetration testing of the system is undertaken by a third party in order to obtain independent assurance regarding system security.

Senior management and the audit committee monitor reports on management’s actions in responding to recommendations made by auditors and security experts.

The main elements of risk management for the system entail:

- ensuring that procedures and controls are adhered to;
- measures to manage operational risk, as described below;

- business continuity plans are in place and tested regularly; and
- ongoing oversight and audit of operations.

Managing operational risk in the Reserve Bank is seen as an integral part of day-to-day operations. Operational risk management includes Bank-wide corporate policies that describe the standard of conduct required of staff, a number of mandated requirements (e.g. a project management template), and specific internal control systems designed around the particular characteristics of various Reserve Bank activities. The Bank also closely manages third party providers of services, including Datacom, to ensure their performance is consistent with relevant contractual terms, including service-level agreements.

In recent years particular emphasis has been placed on system security. A number of reviews have been undertaken and system defences and Bank policies and procedures continue to be strengthened as new security threats evolve. In 2018-19 the Reserve Bank completed its first formal attestation regarding compliance with the SWIFT Customer Security Programme.

The Reserve Bank has a small office in Auckland which shares day-to-day activities with Wellington and has the capability to provide full continuity of business operations should a region-wide disaster affect ESAS’s Wellington staff or facilities. A second computer site is located in Auckland and is used alternately with the Wellington computers for the live production system to ensure continuous system availability.

Significant emphasis is being placed on risk management and assurance with respect to the transition from the current system to the new one.

In regard to the current system there is high awareness of the ongoing aging of its many components, especially in the context of the delays being experienced in moving to the new system. The current system continues to be subject to close monitoring and prudent management in regard to maintaining appropriate network security levels and its overall robust control framework environment. There remains high focus on a timely go-live as soon as practicable in early 2020.

Financial performance

A short-form Statement of Financial Performance for the ESAS business is:

	2019	2018
	\$000	\$000
Operating expenses	3,025	3,325
Over-recoveries (to be applied against future operating costs)	1,082	939
Fees paid by accountholders	4,134	4,264
Average fee charged per transaction	\$1.30	\$1.30

ESAS is operated as a division of the Reserve Bank and services are charged to users on a cost recovery basis. The ESAS business is attributed costs by the Reserve Bank. These include charges for use of the Reserve Bank's resources, such as staff, occupancy, internal audit, governance, accounting and information technology. Indirect costs incurred by the Reserve Bank are allocated to the ESAS System based on estimated costs that the business would incur on a stand-alone basis.

The above figures are extracted from the Reserve Bank's audited financial statements, but the accounts of this division have not been subject to a separate external audit. Income and expenditure for the ESAS business is calculated using the accounting policies specified in the Reserve Bank's financial statements.

The current system is now fully depreciated and results in an artificially low cost base. The Bank has signalled that when the replacement for ESAS goes live, the business cost base will revert to a normal footing when the capital costs of that system start to be depreciated. The entire programme, which includes investment in new infrastructure and security capabilities, has an estimated capital outlay of about \$28 million. This outlay is allocated about evenly between ESAS and NZClear. In addition to amortisation of capital costs, the new system will require significant support.

While no major functional enhancements were made to the current system in the last year, significant work was completed in order to ensure the Bank complied with the SWIFT Customer Security Programme.

The ESAS Terms and Conditions allow for transaction fees for the current system to be retained at a minimum of \$1.30 per debit transaction. This change allows for a reserve to be accumulated and applied towards a reduction of fees to be charged when the replacement system commences operation, so avoiding unnecessary variability in transaction fees. At June 2019 the reserve stood at \$3.009 million. The change in billing to allow for a floor in fees charged for the current system results in the smoothing of fees paid by members and does not alter the central principle of the Bank charging fees to users of ESAS on a cost recovery basis.

Plan for 2019-20

ESAS's plan for the year ended 30 June 2020

The following project work is planned:

- Ensure successful completion of industry acceptance testing for the Payment Systems Replacement project and a smooth implementation of the new system.
- Share with the industry a programme post-implementation review.
- Implement a post go-live system roadmap and system improvement programme in consultation with the payments industry.
- Work with the industry on planning for material business changes such as 365 day banking and implementation of SWIFT 20022.

As part of business as usual we will target to:

- Have the system available for accountholders for at least 99.90 percent of core business hours.
- Have the system subject to an external audit.
- Survey accountholders' satisfaction levels and report back to accountholders by May 2020.