IHS Markit®

Securities Finance Quarterly Review

Q1 2019

Welcome to the first edition of the Securities Finance Quarterly Review for 2019. While the year has gotten off to a slow start for securities lending revenue, there have been opportunities for growth, which we will detail in this report. For our part 2019 has gotten off to a busy start as we seek to build on the momentum from last year. I'm pleased with the progress to date and excited to share some updates with you below.

Roadmap Execution

We have continued to execute against our business and strategic priorities with material upgrades and releases during the first quarter, which included:

- Enhancements to Collateral Flexibility Buckets
- New Benchmark Fee methodology
- Fee buckets on League Tables
- New Home Page with Intraday Movers
- Public Short Disclosures: Japan
- New fields in Portfolio and Screening

As we embrace the new, so too shall we dispense with the…less new. Please be aware that it is our intention to finally retire some of our legacy products later this year. If you are impacted by this, our product specialist team will be reaching out to ensure smooth migration to our current and newer product versions of these products.

Forum

On March 20th we held our annual forum in London which was attended by 200 market practitioners. Speakers represented all aspects of the industry including Agent Lender, Beneficial Owner, Asset Manager, Prime Broker, Trading Platform, Hedge Fund Financing Desk/Borrower, Technology Company, Industry Association and Central Bank. Some of the main observations included:

- Geo-political events driving markets
- It's getting harder to find good short opportunities (and even then many cost prohibitive to execute)
- Infrastructure in non-stock loan trade structures challenged by scale
- The securities finance market has developed, but survival now depends on real innovation
- Industry needs to think more out of the box on how data can work and add more value

I want to truly thank all the speakers as well as clients and guests who attended for their participation and support. We are proud to be able to be able to bring the industry together and deliver thought provoking dialogue and debate.

Drive industry initiatives

Earlier in the quarter we announced in conjunction with ISLA (International Securities Lending Association) the launch of an industry wide working group to address the challenges with Securities Lending Performance Measurement with the aim to issuing a global charter later in the year. Chaired by ISLA with representatives from agents, direct lenders, beneficial owners and data providers, the aim is to complete the work by Q3 2019 but allow some flexibility around adoption given the impending SFTR implementation and potential development work. There is a widely held view that whilst the securities lending industry has dramatically evolved, not too much has changed with Securities Lending Performance Measurement to keep pace with the changes. This has led to a common view from many beneficial owners that under the current approach "everyone seems to win". There are often many valid explanations as to why this can occur, but the lack of trust and use of Securities Lending Performance Measurement calls for overhaul and modernization. This is not about winners and losers – it is a fresh standardized approach which will ensure all participants have a more accurate view of their respective program performance.

Intra Day

We continue to see a pleasing uptick in new data contributions and usage in our intra-day capability. This was particularly relevant in the recent Lyft IPO and allowed our clients to fully optimize their inventory given the high levels of demand to borrow Lyft stock over the first two days. If you would like more information on our intraday capability, please contact your local Product Specialist (page 20).

Beneficial Owners

We launched our next generation of services for beneficial owners covering performance and risk reporting, compliance, policy and framework alignment, management / board reporting, benchmarking and consultancy services. We have been delighted with the market's response to this new, innovative approach, which has gained traction and momentum.

As always, we very much appreciate your continued support and feedback. We look forward to working with you as we continue to develop and deliver the next generation of securities finance data and analytics.

Regards,

Paul R. Wilson

Managing director and global head of Securities Finance, IHS Markit

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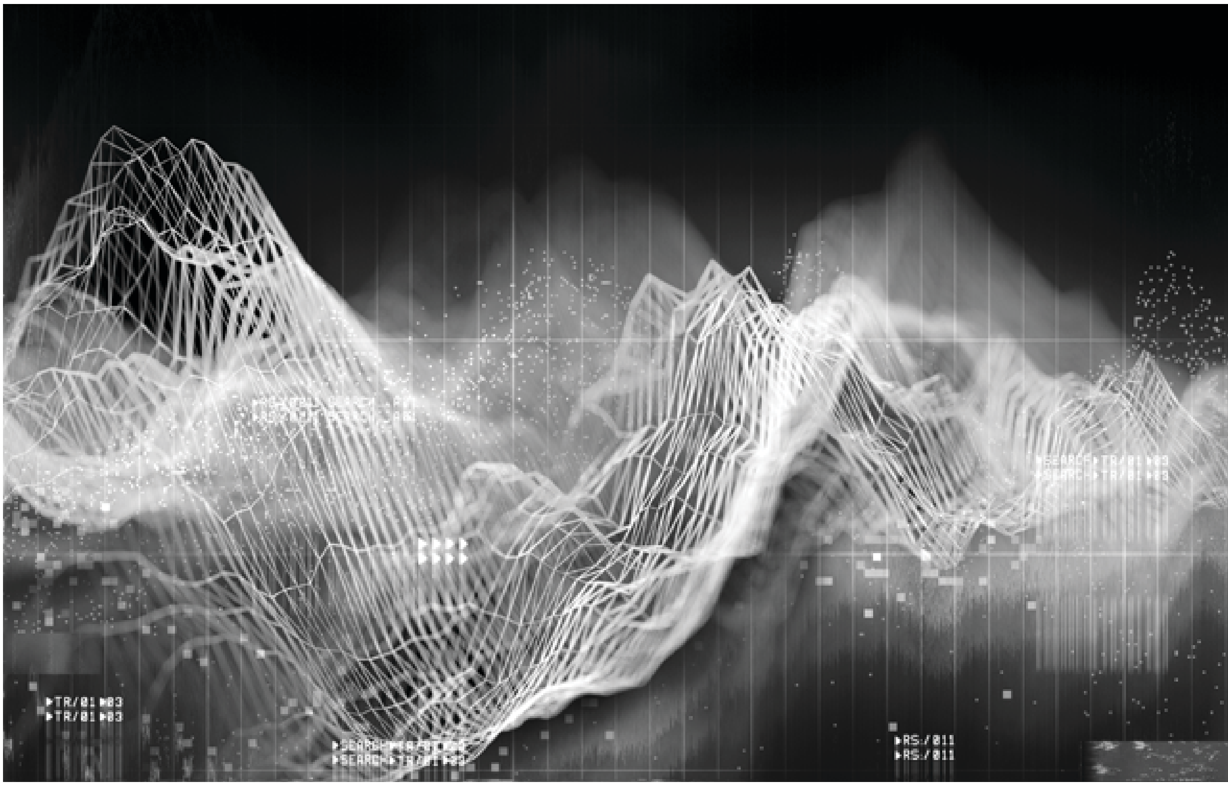


Hooray for exchange offers!

LLY generates an estimated $177m in Q1 revenue

- Arbitrageurs drove borrow demand for LLY and ELAN
- Shareholders participate by tendering their holdings or lending "TNA" shares
- Near parity between arbitrage profits and lending revenue

When Eli Lilly announced it would spin off the remainder of its stake in Elanco Animal Health, ears perked up on securities lending desks. Exchange offers reflect the key role that securities lending plays in the plumbing of global financial markets, which we'll discuss in some detail here. This corporate action type is also boon to the securities lending industry itself, driving significant loan balances and fees. One industry veteran recently quipped that an advocacy group ought to be formed to raise awareness of exchange offers in corporate boardrooms.

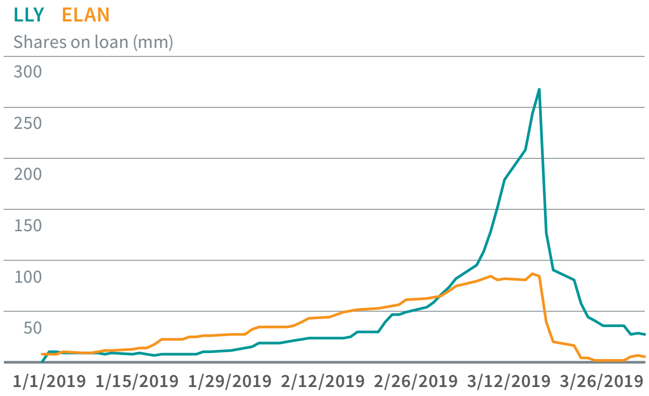
Elanco Animal Health was spun off from Eli Lilly in September of last year, at which time $1.5bn of ELAN shares were floated. On February 8th, seeking to complete the divestiture, Eli Lilly offered their shareholders an opportunity to tender LLY shares in exchange for ELAN shares, the latter offered at a 7% discount to incentivize participation.

This type of incentive also attracts arbitrageurs who will buy shares with the intention of tendering them. In theory this position could be hedged by shorting ELAN shares, which would lock in the 7% discount. There's a catch. Not all tendered shares will be accepted, so arbs need to estimate the percentage of their tendered shares which will be accepted and hedge those shares with a short position in ELAN. That leaves their position in LLY shares which aren't accepted, so they need to hedge that as well by effecting a short position in LLY shares, or "boxing" their position, which can be done with synthetic products.

The hedging activity on the part of arbitrageurs causes borrow demand for both securities to increase. The real driver of lending revenue comes from the LLY shares; In forgoing the opportunity to tender shares, lenders can charge a premium to lend their holdings. These shares are referred to as "take no action" or TNA shares and are typically auctioned off to borrowers.

The scale is massive. Fully 44% of the outstanding shares of LLY were tendered, reflecting a market value greater than $57bn. The corresponding borrow in LLY shares to hedge that position reached $33bn, while the ELAN borrow balances reached $2.7bn.

Shares on loan - Eli Lilly & Elanco Animal Health



In the press release announcing the exchange offer, Eli Lilly noted that the maximum exchange ratio would be 4.5262 ELAN shares per tendered LLY share, with the aim of exchanging all 293m shares of ELAN. That ratio suggested that there would be approximately 65m shares of LLY accepted, or 6% of all outstanding shares. For an arbitrageur that 6% reflects the minimum proration, or percentage of tendered shares which they can be sure will be accepted.

An estimate of minimum proration could be further refined through analysis of shareholder filings. For example, one could reasonably assume that the Eli Lilly Foundation would not tender their 118m shares. Similarly, index holders would most likely be precluded from tendering by investment mandate, which accounted for 170m shares. Removing that 288m shares would suggest a proration factor closer to 8.5%. Further refinement could have been achieved by estimating the portion of shares which would be tendered out of the 220m shares not accounted for in public filings, along with consideration of non-index 13F holders. In the event the actual proration factor was 14%. For this analysis we've used public filings aggregated by IPREO.

To simplify the profit and loss associated with the arbitrage transaction, consider a shareholder who tendered 100 shares. Fourteen shares would have been accepted, for which the shareholder would receive Elan shares at a 7% discount. At a price of $127 per share of LLY that would imply a $124.5 profit ($127 x 0.07 x 14), less ~$2.5 to borrow the ELAN shares to hedge, so net $122. For the 86 tendered shares which weren't accepted the borrow cost of 72 cents per share would be paid for the TNA shares, for a total cost of $62. The difference of $60 would be the arbitrage profit, or $0.6 for each share of the original LLY holding. That's an idealized version, as it would mean that the proration was perfectly estimated, and both sides of the trade were fully hedged. This example also belies the opportunity for trading the spread between LLY and ELAN in the days ahead of the final exchange ratio being set (which was calculated using the VWAP prices for the three days ending March 6th).

It the preceding example $0.72 was used for the LLY per share cost for TNA shares. A thorough accounting of the lending revenues associated with TNA shares is challenging, owing to differing mechanics across the industry for recording these transactions. For some lenders these trades are booked as traditional securities lending transactions where the fee or rebate fully captures the payment for borrowed shares. Other lenders run these transactions through a separate system, in some cases a legacy process from a time when securities lending software was unable to process fees of such a magnitude. Bearing in mind some reporting inconsistencies, there is enough data to meaningfully estimate the total revenue and how that relates to per-share payments, which is how these special situations are typically priced.

Breaking the LLY transactions into bands by fee and date suggests a weighted average fee to borrow for March 12th at $0.72 per share, which was paid either just for the 12th or split between the 12th and 13th. There was a small block of transactions done at $1 per share, but that equates to just 13% of balances with fees which could reasonably be expected to fully reflect the payment for borrow. It's worth bearing in mind that many shareholders are precluded from lending 100% their holdings of a given stock, so returns across actual portfolios were likely lower. The observation of near parity between arbitrage profits, $0.6 and returns to lending LLY TNA shares, $0.72, suggests that both sides of the trade effectively handicapped the proration and resulting profit opportunity.

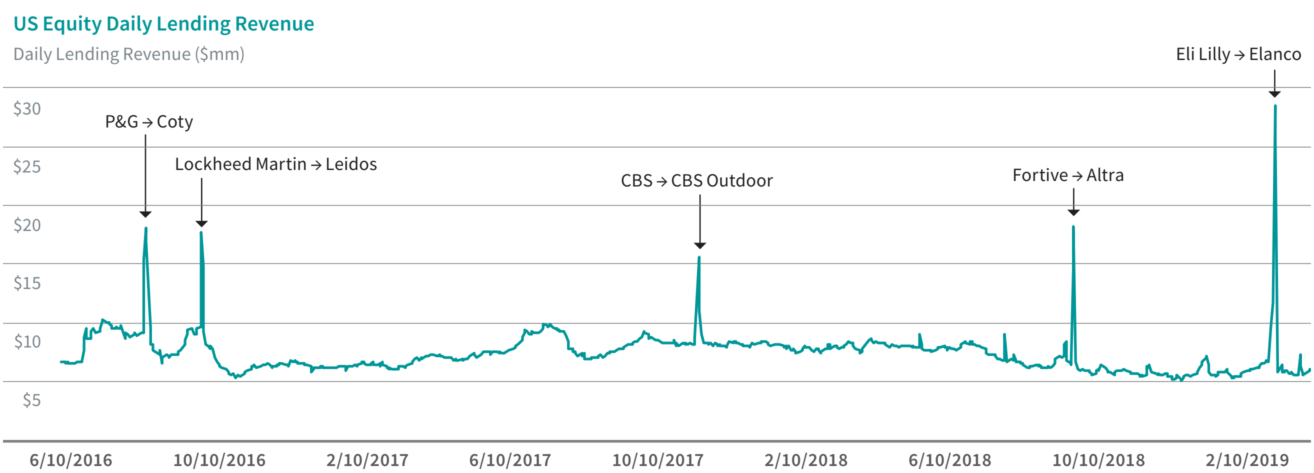
Wrap-up:

Exchange offers reflect one of the critical roles securities lending plays in capital markets, facilitating a smooth execution for corporate actions. This process also allows shareholders who do not tender to benefit by lending their shares. Eli Lilly paid a Q1 dividend of $0.65 per share, so revenue from lending TNA shares could have roughly doubled Q1 income. If all 245m shares on loan for March 12th achieved the observable $0.72 per share average, that would imply $177m in Q1 revenue for LLY (based on the fees reported, LLY Q1 revenues were $48m).

In recent years there has been roughly one exchange offer per year which delivered outsized lending returns. Most recently Fortive's exchange offer for Altra in September of 2018, preceded by CBS exchanging shares for CBS Outdoor in November 2017 and duelling P&G and Lockheed Martin exchange offers in the fall of 2016. P&G was divesting part of it's holding of COTY, shares of which are currently subject to a tender offer from investor JAB Holding prompting an increase in borrowing ahead of the April 15th deadline and may also result in a short-term demand for TNA shares.

The broad market rally YTD has created a challenging environment for equity short sellers, which has in turn kept a lid on borrow demand, particularly for hard to borrow shares. Against that backdrop corporate action related securities loans have received significant diligence by traders seeking to maximize returns. Our view is that having the most complete and up to date securities lending dataset is a key component to that process.

Revenues relating to exchange offers



Securities Lending Q1 Update

$2.4bn in securities lending revenue

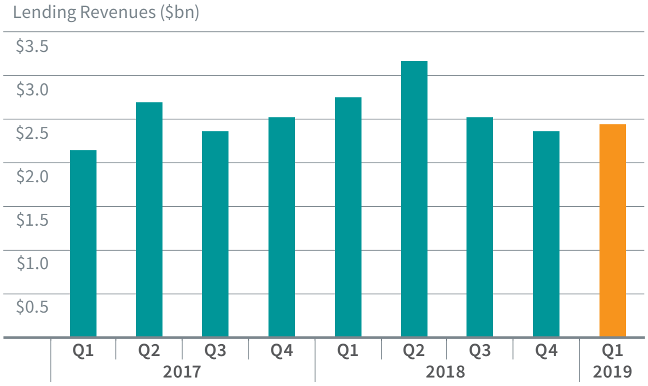
- Lending revenues improve 3% compared with Q4 2018
- Government bond balances and revenues decline
- EUR denominated corporate bonds in demand
- Asia remains bright spot for equity lending, particularly Japan & South Korea

Global securities lending revenues for Q1 2019 came in at $2.4bn; 10 percent lower than Q1 2018, and 3% higher than Q4 2018. Equity lenders have seen a lack of special balances, while there has been some marginal cooling in previously hot market segments, including: government bonds, corporate bonds and ETFs. The revenues are within the range of the preceding four quarters, however the breakdown of returns continues to evolve along with the changing needs of market participants.

Lending of government bonds, particularly US Treasuries, has taken on an increased significance in recent years. The primary driver of demand has been the collateral needs of broker-dealers in relation to regulatory requirements for holding high quality liquid assets (HQLA). Apart from collateral needs, the Federal Reserve's path of rate hikes also drove borrow demand by creating trading opportunities in recent years. That tailwind is losing momentum, as total government bond loan balances have declined steadily from the post-crisis peak in Q1 2018, which was over $1T USD. Along with balances, revenues are also declining, falling 9% compared with Q4 2018. Though overall revenues were challenged, there were some short-term opportunities to lend 10Y and 30Y US Treasuries at special rates in Q1.

Corporate bond demand has been robust, with Q1 having the highest average loan balances for a quarter since 2010, just over $200bn. Demand for dollar denominated credit has been consistent, with the bulk of recent growth seen in EUR and GBP denominated credits. Despite solid demand, revenues fell YoY in Q1 due to declining fees.

Global Securities Lending Revenue

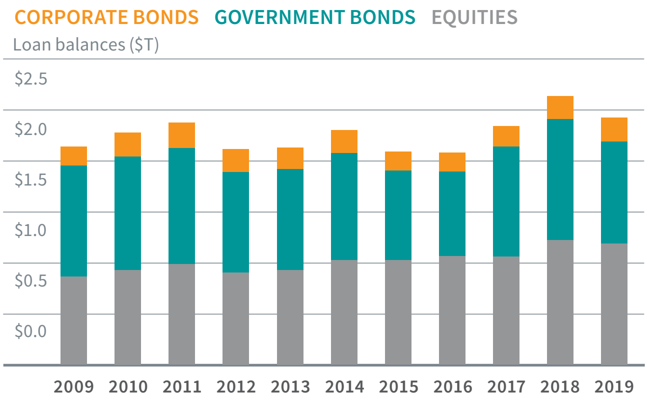


ETFs took a pause after an impressive period of increasing revenues, posting a 16% decline compared with Q1 2018. Half of the decline was accounted for by a single credit ETF (HYG), caused by the declining fees in Q1. Although the revenues for ETF lenders are on pace to fall short of 2018's record, they appear likely to exceed the 2017 total – the 2nd highest revenue year on record.

Equity lending revenues came in at $1.9bn, a decline of 7.5 percent compared with Q1 2018. The bright spot continues to be Asia, the only region to improve on equity lending revenues YoY in Q1. Asian equities also contributed to ADR

revenues, which posted the highest quarterly revenue on record at $128m, with the gains largely resulting from increasing fees for lending Nio, Inc.

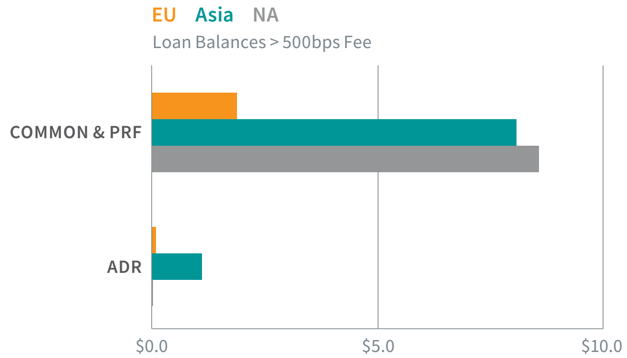
Securities lending global loan balances



Things were less upbeat in the West, with US and EU equity revenues both declining by more than 10% compared with Q1 2018. The blistering rally in expensive to borrow equities in January has kept a lid on specials demand. Global special balances averaged $20bn in Q1, including ETFs and ADRs, which reflects a 16% decline compared with Q1 2018. While Tesla borrow fees have been subdued by a lack of borrow demand over the last year, the utilization of lendable shares has increased from a multi-year low of 41% in mid-February to 59% at the end of Q1. If borrow demand for the volatile electric automaker continues to increase, fees and revenues will follow.

Some opportunities for US equity lenders have emerged on the back of corporate actions, most notably the Eli Lilly exchange offer for its holdings of Elanco Animal Health. The exchange offer made Eli Lilly the 2nd most revenue generating security in Q1, highlighting the significance of corporate actions to lending revenues.

Equity special balances



2018 delivered the most securities lending revenues since the financial crisis, which looks like a tough act to follow in the early going of 2019. The last two quarters have been notable in that there hasn't been the pickup in borrow demand which often accompanies periods of increased volatility. Most recently, in Q4 2015 – Q1 2016, US equities had the two best post-crisis revenue quarters amid the credit and equity sell-off as investors hedged and added to shorts. There was no such increased demand in Q4, though there is some cause for optimism. Q1 revenues at least mounted some sequential growth relative to Q4 and key revenue drivers remain in place: Asian Emerging Markets, North American Cannabis and global credit.

Sam Pierson
samuel.pierson@ihsmarkit.com

APAC Equity

Good times roll into 2019

Asian equity lending delivered $540m in Q1, an increase of 1.4% compared with Q1 2018. The increasing revenues were driven by a 16% YoY increase in balances, with fees posting a 13% decline compared with Q1 2018. South Korea was the only country in the top 5 which saw increasing balances with fees greater than 500bps in Q1, while special balances across the region fell 7% compared with Q1 2018. The good news for beneficial owners is that utilization increased in five of the top six markets by revenue, with only Taiwan declining.

Q1 was the sixth consecutive quarter where revenues grew YoY, though the increase in nominal terms was the smallest of the six. Despite the strong YoY comparisons, the uptrend in revenue for Asian equities appears to be losing momentum. While Q1 revenues did grow YoY and QoQ, the sequential decline in fees continues to drag on returns. The growth in balances as the markets recovered helped to lift revenues in Q1.

Japanese equity revenues totaled $215 million for Q1, a 6% decline compared with Q1 2018. Takeda Pharmaceuticals $18.8m in Q1 revenue, the most for any Japanese equity. More than 90% of Takeda revenue was generated in January, as result of arbitrageurs borrowing shares during the run-up to the firm closing the acquisition of Shire. There was an average of $118bn in Japanese equity loan balances in Q1, the highest on record going back to 2007.

Hong Kong regained the 2nd ranking for Asia equity lending revenue. The Q1 revenue bettered its 2018 comparable by 20% on the back of increasing balances compensating for declining fees, however there were some notable specials. The largest contributors to Q1 revenues in Hong Kong were Meituan Dianping, BYD Co and Xiaomi Corp. The fees for Meituan Dianping surged in late March, reaching a peak of more than 30%, driving $38.9m in Q1 revenues.

South Korean equity revenues were $115m in Q1, a 16% increase compared with Q1 2018. Samsung Electro-Mechanics dethroned Celltrion as the most revenue generating equity. Fees for Samsung Electro-Mechanics surged in December and remained elevated through Q1, though a marginal reduction in balances did push down on fees at the margin.

Overview

Quarterly Revenues
$540M ▲ 3%

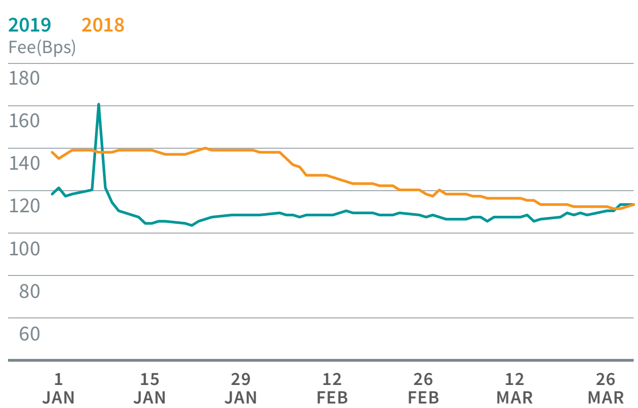
Average Balances
$199B ▲ 17%

Weighted Average Fee
1.10% ▼ 13%

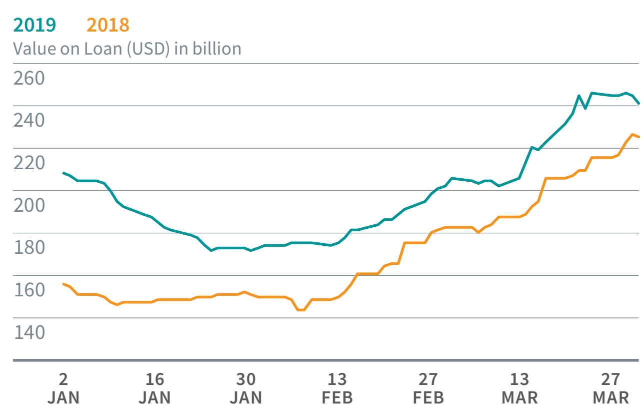
Average Inventory
$1.8T ▼ 5%

Utilization
6.56% ▲ 21%

Q1 FEE TREND



Q1 BALANCE TREND



OVERVIEW

APAC only region to improve on Q1 2018 revenue

Hong Kong revenues rebound led by Meituan Dianping

M&A activity drove borrow demand for Takeda Pharma

Samsung Electro-Mechanics top revenue generator in South Korea

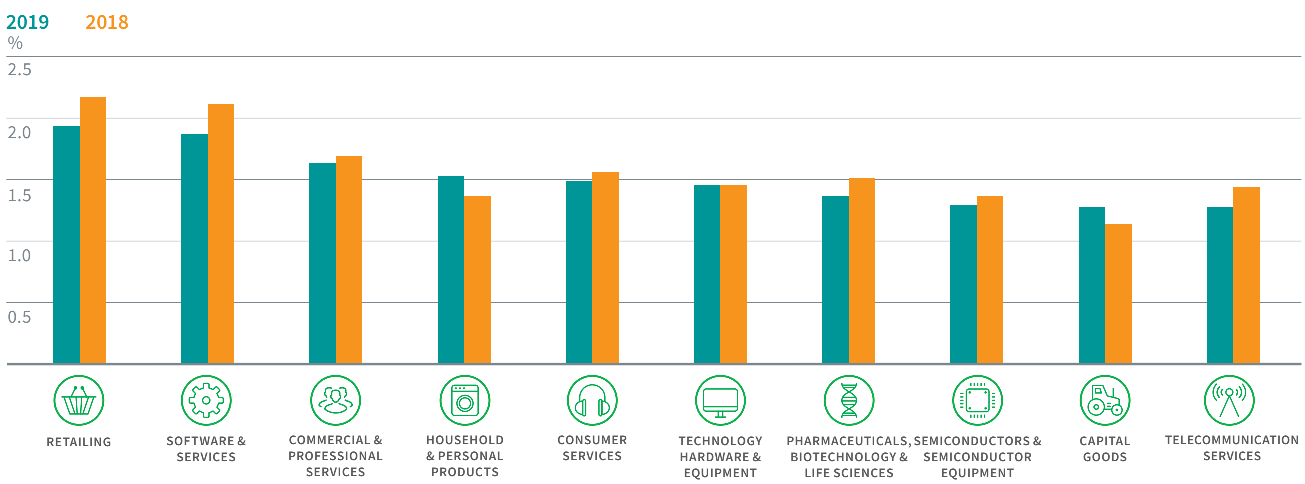
COUNTRY DETAILS

Country	Quarterly Securities Lending Income (USD M)	YoY Change	Average Value on Loan (USD Bn)	YoY Change	Weighted Fees	YoY Change	Average Lendable (USD Bn)	YoY Change	Average Utilization	YoY Change
Japan Equity	215.27	-6.0%	118.13	25.7%	0.73%	-28%	786.03	-10.6%	7.73	37.8%
South Korea Equity	115.61	15.9%	14.05	8.3%	3.33%	7%	123.62	-6.6%	6.07	12.2%
Hong Kong Equity	118.07	20.8%	31.94	5.5%	1.49%	13%	413.23	3.2%	5.64	0.5%
Taiwan Equity	45.83	-8.3%	7.32	-14%	2.54%	7%	56.34	-3.0%	5.49	-22.4%
Australia Equity	31.62	-0.2%	23.31	13.5%	0.55%	-12%	300.68	2.9%	6.14	22.6%
Singapore Equity	4.95	-27.9%	2.05	1.6%	0.98%	-29%	50.07	-9.9%	3.26	16.5%
Malaysia Equity	4.50	-22.3%	0.56	-19.3%	3.23%	-5%	15.16	4.8%	3.20	-28.1%
Thailand Equity	3.33	-12.4%	0.77	-16.9%	1.76%	5%	16.89	3.7%	3.41	-15.1%
New Zealand Equity	0.89	19.7%	0.75	48.6%	0.48%	-19%	7.96	20.1%	7.00	28.9%

TOP 10 REVENUE GENERATING STOCKS

Instrument Name	Ticker	Sector	Country	Revenue Generated ($)
Meituan Dianping	3690	Retailing	HK Equity	38.90
Takeda Pharmaceutical Co Ltd	4502	Pharmaceuticals, Biotechnology & Life Sciences	JP Equity	18.79
Samsung Electro-Mechanics Co Ltd	009150	Technology Hardware & Equipment	KR Equity	13.64
Celltrion Healthcare Co Ltd	091990	Health Care Equipment & Services	KR Equity	11.67
Celltrion Inc	068270	Pharmaceuticals, Biotechnology & Life Sciences	KR Equity	11.61
Sillajen Inc	215600	Pharmaceuticals, Biotechnology & Life Sciences	KR Equity	8.65
Xiaomi Corp	1810	Technology Hardware & Equipment	HK Equity	8.62
Byd Co Ltd	1211	Automobiles & Components	HK Equity	7.17
Softbank Corp	9434	Telecommunication Services	JP Equity	6.52
Yageo Corp	2327	Technology Hardware & Equipment	TW Equity	6.34

AVERAGE % OF SHARES ON LOAN



EMEA Equities

Limited demand challenging revenues

Overview

Quarterly Revenues
$364M ▼ 18%

Average Balances
$196B ▼ 13%

Weighted Average Fee
0.75% ▼ 4%

Average Inventory
$2.4T ▼ 11%

Utilization
5.50% ▲ 0%

European equity lending revenue was $364m for Q1, an 18% decline compared to Q1 2018. Borrow demand from short sellers failed to emerge amid the Q4 sell-off and EU short loan value declined in Q1 relative to Q4 despite the recovery in asset prices. The broad decline in EU equity balances is not purely a reflection of market values, the total number of shares on loan in Q1 declined 3.5% compared with Q1 2018. Only four of eighteen countries in the region saw increasing revenues in Q1.

Amid the challenging environment lending revenues there has been some opportunity. Popular short Intrum AB delivered $19m in Q1 revenue, representing 33% of total revenues for Swedish equities. That was a boost for beneficial owners of Intrum, who also enjoyed nearly 30% increase in share price during the quarter. The Intrum boost was insufficient to drive growth in overall Swedish equity lending revenue however, which fell 25% compared with Q1 2018.

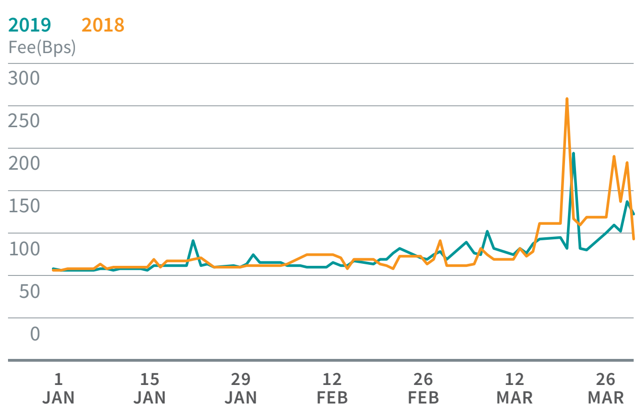
France was the most revenue generating EU country with $68.6m in Q1 revenues, an increase of 20% compared with Q1 2018. Casino Guichard Perrrachon remained hard to borrow through Q1, though the fees for that popular short trended down steadily, causing lending revenues to decline by $6.8m as compared with Q4 2018.

Wirecard was the most revenue generating German equity in Q1 despite the borrow demand being capped by the short sale ban mid-way through the quarter. Osram Licht AG was the 2nd most revenue generating German equity as the result of surging borrow demand.

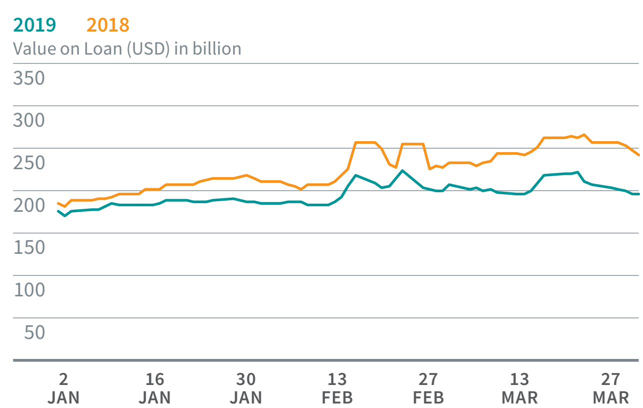
IQE Plc led revenues for UK equities as the European Semiconductor industry remains popular with short sellers. Other stocks in the space seeing elevated borrow demand include AMS AG, Aixtron SE and Sma Solar Technology Ag.

The few bright spots notwithstanding it was a challenging quarter to EU equity lending revenues. EU equity special balances relating to short positions, as filtered by Short Loan Value, declined by 20% compared with Q1 2018. Both North American and Asian equities managed to improve on Q4 revenues and special balances, making EMEA the laggard.

Q1 FEE TREND



Q1 BALANCE TREND



OVERVIEW

Intrum AB drove Swiss equity revenues	YoY decline in balances across region	Increasing demand for EU Semiconductor stocks	Specials balances decline 20% compared with Q1 2018

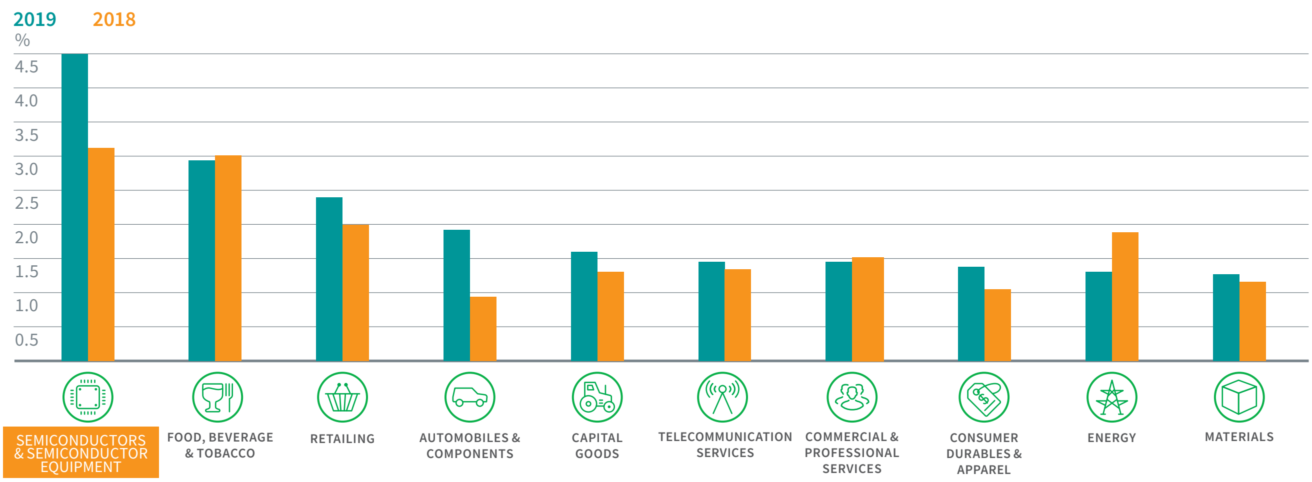
COUNTRY DETAILS

Country	Quarterly Securities Lending Income (USD M)	YoY Change	Average Value on Loan (USD Bn)	YoY Change	Weighted Fees	YoY Change	Average Lendable (USD Bn)	YoY Change	Average Utilization	YoY Change
France Equity	68.66	21.1%	29.87	-19.5%	0.86%	50%	358.63	-11.0%	5.31	-4.3%
Sweden Equity	58.84	-25.4%	16.10	-10.8%	1.43%	-2%	110.51	-11.2%	9.89	6.8%
UK Equity	52.10	-18.2%	41.54	-18.8%	0.49%	0%	725.32	-8.1%	4.47	-10.3%
Germany Equity	43.04	-45.8%	26.74	-11.0%	0.65%	-39%	282.10	-17.4%	5.83	16.6%
Switzerland Equity	40.94	13.2%	30.70	24.2%	0.52%	-7%	336.63	1.8%	6.09	18.9%
Italy Equity	25.17	-17.6%	11.01	-25.4%	0.91%	10%	88.72	-24.3%	7.53	2.8%
Finland Equity	21.14	16.5%	4.88	-16.5%	1.51%	37%	42.27	-5.9%	7.53	-14.4%
South Africa Equity	12.65	-37.6%	6.16	-28.0%	0.80%	-13%	58.35	-14.3%	5.02	-7.4%
Spain Equity	12.14	-19.0%	8.11	-15.8%	0.61%	-5%	100.57	-12.9%	4.62	-2.7%
Norway Equity	10.61	-45.7%	3.29	-32.2%	1.17%	-19%	35.38	-2.0%	5.97	-24.3%
Netherlands Equity	10.52	-36.0%	9.51	-22.3%	0.45%	-18%	129.08	-10.8%	4.36	-18.2%
Denmark Equity	7.08	31.3%	6.33	-7.3%	0.45%	42%	61.63	-13.9%	7.03	9.3%
Turkey Equity	4.34	-40.5%	0.75	-20.2%	2.35%	-26%	7.55	-36.4%	6.32	11.9%
Belgium Equity	4.24	-42.6%	3.95	-21.0%	0.44%	-26%	53.52	-27.8%	4.89	15.8%
Greece Equity	1.95	-3.2%	0.07	-26.0%	12.09%	33%	1.74	-27.9%	3.10	1.5%
Austria Equity	1.54	-37.3%	1.42	15.0%	0.44%	-45%	12.20	-26.1%	7.83	66.4%
Poland Equity	1.03	-46.8%	0.68	-27.4%	0.62%	-27%	10.33	-18.3%	4.98	-16.9%
Portugal Equity	0.35	-56.3%	0.41	-59.5%	0.34%	8%	7.54	-9.2%	3.59	-49.8%

TOP 10 REVENUE GENERATING STOCKS

Instrument Name	Ticker	Sector	Country	Revenue Generated ($)
Total Sa	FP	Energy	FR Equity	21.48
Intrum Ab	INTRUM	Commercial & Professional Services	SE Equity	19.31
Casino Guichard Perrachon Sa	CO	Food & Staples Retailing	FR Equity	11.43
Wirecard Ag	WDI	Software & Services	DE Equity	6.45
Nordea Bank Abp	NDA SE	Banks	SE Equity	5.76
Eurofins Scientific Se	ERF	Pharmaceuticals, Biotechnology & Life Sciences	FR Equity	5.50
Iqe Plc	IQE	Semiconductors & Semiconductor Equipment	UK Equity	4.07
Sodexo Sa	SW	Consumer Services	FR Equity	3.97
Anglo American Plc	AAL	Materials	UK Equity	3.64
Skandinaviska Enskilda Banken Ab	SEB A	Banks	SE Equity	3.18

AVERAGE % OF SHARES ON LOAN



Americas Equities

Cannabis & Corporate Actions

North American equities posted an 13% YoY decline in Q1 revenues. A dearth of hard to borrow stocks with significant balances continues to challenge revenue growth for US equities. Specials balances in the US fell 32% compared with Q1 2018, with just over $7bn in balances with fees greater than 500bps.

Cannabis related stocks were an outsized contributor to lending revenues once again. The sector's $95m in Q1 revenues was 13% of all North American equity revenues. Four of the top 10 revenue generating North American equites were in the Cannabis sector,

The fees for Tilray surpassed 200% again in January ahead of the lockup expiry for pre-IPO shareholders. Tilray highlights the potential significance of securities lending fees for investor returns in hard to borrow stocks. In Q1 the share price of Tilray declined by just over $5. A beneficial owner lending shares at the average fee and utilization would have realized lending revenues of $8.5 in Q1.

Canadian equity lending revenue totaled $144m, an increase of 11% compared with Q1 2017. The Cannabis stocks remain key drivers of demand for specials in Canada. Revenues from CA Cannabis stocks came in at $63m in Q1, a 32% increase from Q1 2018. Excluding the Cannabis sector revenues for Canadian equities nearly exactly matched Q1 2018 at just over $80m.

As noted in the feature commentary the Eli Lilly exchange offer for shares of Elanco Animal health drove significant revenues in the first quarter. Exchange offers are particularly lucrative given the value of auctioning off shares which won't be tendered.

Overview

Quarterly Revenues
$740M ▼ 13%

Average Balances
$513B ▲ 10%

Weighted Average Fee
0.58% ▼ 22%

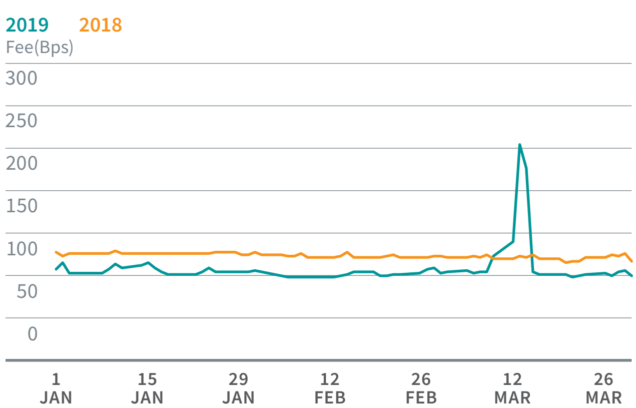
Average Inventory
$9.0T ▲ 1%

Utilization
4.57% ▲ 10%

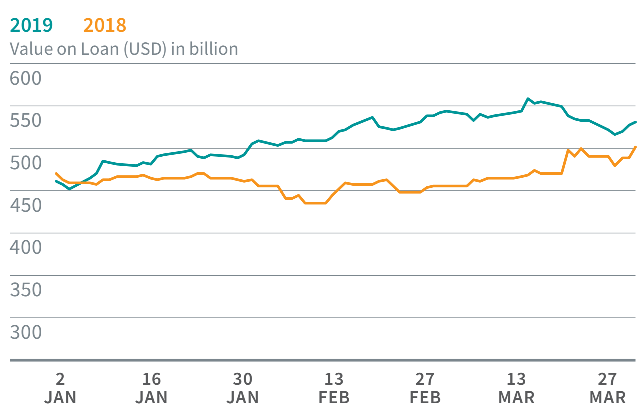
The Retailing industry group continued to see increasing borrow demand. Notable increases in Q1 included Tiffany & Co, Bed Bath and Beyond, Burlington Stores and Children's Place. In the Auto retailing space Carvana and Carmax saw increasing balances.

ADR revenues soared in Q1 as fees for Chinese electric carmaker Nio, Inc. increased dramatically. The ADR was the most revenue generating security in Q1, however fees have trended down and a repeat performance appears unlikely. Q1 was the most revenue on record for ADRs, with Chinese firms contributing 70% of the total.

Q1 FEE TREND



Q1 BALANCE TREND



OVERVIEW

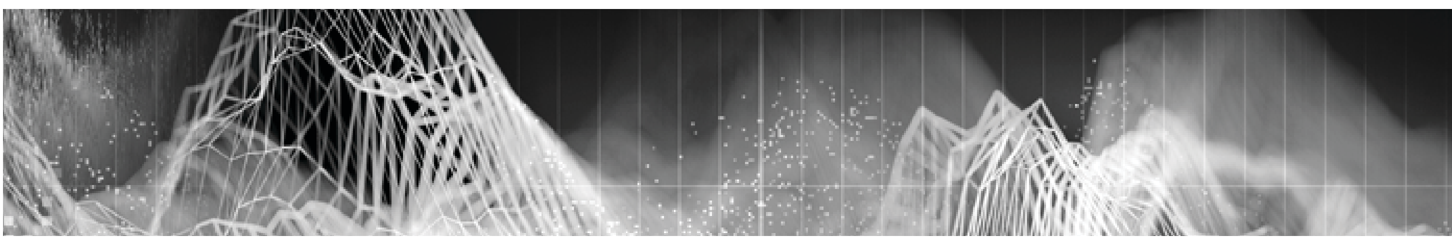
Cannabis related stocks contribute 13% of revenues	Canada revenues increase 11%	Limited specials balances pressure US equity revenues	Leave as is with retail comment

COUNTRY DETAILS

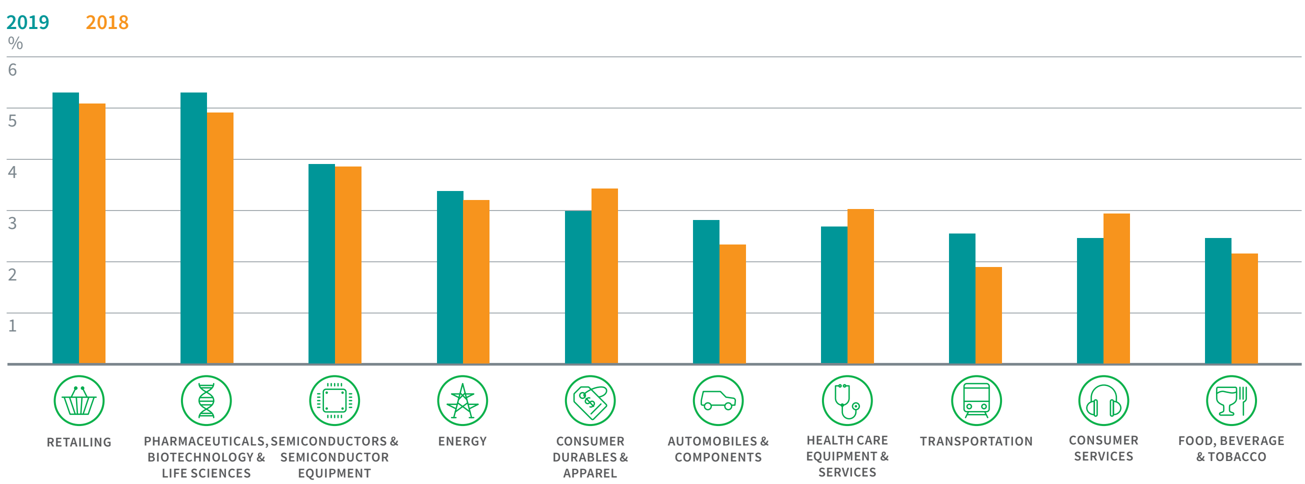
Country	Quarterly Securities Lending Income (USD M)	YoY Change	Average Value on Loan (USD Bn)	YoY Change	Weighted Fees	YoY Change	Average Lendable (USD Bn)	YoY Change	Average Utilization	YoY Change
USA Equity	592.78	-17.5%	468.64	11.0%	0.51%	-26%	8,523.94	1.4%	4.41	10.2%
Canada Equity	144.82	11.5%	43.48	6.6%	1.34%	5%	474.35	-6.5%	7.45	12.1%
Brazil Equity	0.87	-66.4%	0.44	-46.7%	0.81%	-37%	1.85	-39.4%	6.37	1.3%
Mexico Equity	1.09	-18.2%	0.93	-20.4%	0.48%	3%	26.19	-3.2%	2.84	-16.4%
American Depository Receipts	128.60	63.0%	45.91	-17.8%	1.13%	97%	209.87	-9.3%	15.67	-16.2%

TOP 10 REVENUE GENERATING STOCKS

Instrument Name	Ticker	Sector	Country	Revenue Generated ($)
Nio Ads Rep 1 Cl A Ord	NIO	Automobiles & Components	CN ADR	51.72
Eli Lilly And Co	LLY	Pharmaceuticals, Biotechnology & Life Sciences	US Equity	48.73
Elanco Animal Health Inc	ELAN	Pharmaceuticals, Biotechnology & Life Sciences	US Equity	34.27
Canopy Growth Corp	WEED	Pharmaceuticals, Biotechnology & Life Sciences	CA Equity	27.70
Tilray Inc	TLRY	Pharmaceuticals, Biotechnology & Life Sciences	US Equity	25.84
Sociedad Quimica Adr Rep 1 Srs B Ord	SQM	Materials	CL ADR	19.12
Gtt Communications Inc	GTT	Software & Services	US Equity	17.95
Aurora Cannabis Inc	ACB	Pharmaceuticals, Biotechnology & Life Sciences	CA Equity	16.58
Accelerate Diagnostics Inc	AXDX	Pharmaceuticals, Biotechnology & Life Sciences	US Equity	16.03
New Age Beverages Corp	NBEV	Food, Beverage & Tobacco	US Equity	12.56



AVERAGE % OF SHARES ON LOAN



Exchange Traded Funds

Good, not great

2018 saw the most ETF lending revenue on record, $398m. That proved to be a tough act to follow in the first quarter, as revenues fell 21% as compared with Q4, which was was the highest quarterly revenue on record. The shortfall was primarily driven by credit focused ETFs. That was particularly true for HYG, whose $7.4m in Q1 revenues were half the 2018 average, purely as the result of declining fees. The other popular high-yield ETF, JNK, also saw declining revenues as the result of lower fees. Overall fixed income ETFs delivered 38% less revenue in Q1 than Q4. Last year was the best year on record for ETF lending with more than $398m in revenue; reaching this total requires that average revenues for the remaining three quarters are 19% higher than the Q1 total.

One popular fixed income ETF which maintained the elevated revenue levels seen in Q4 was Invesco Senior Loan ETF, BKLN, which delivered $2m in Q1 revenue. As the loans market valuations recovered from the December lows, the borrow balances and fees declined, suggesting that a repeat performance of the stellar revenues in Q2 is unlikely. Borrow demand for BKLN remains robust given that positive rebates on the cash proceeds of short sales create an arbitrage opportunity for the ETF as a short spread against a total return swap on the underlying index (as the result of the ETF expense ratio combined with positive rebate). The positive rebate also makes BKLN an inexpensive hedge for a loans portfolio.

On the equity side revenues fell 10%, as the need for hedges faded amid the YTD rally. Similar to single stock revenues in North America, the Cannabis sector makes an appearance near the top 10 revenue generating funds list via the Alternative Harvest ETF, MJ.

Overview

Quarterly Revenues
$87M ▼ 16%

Average Balances
$55B ▲ 21%

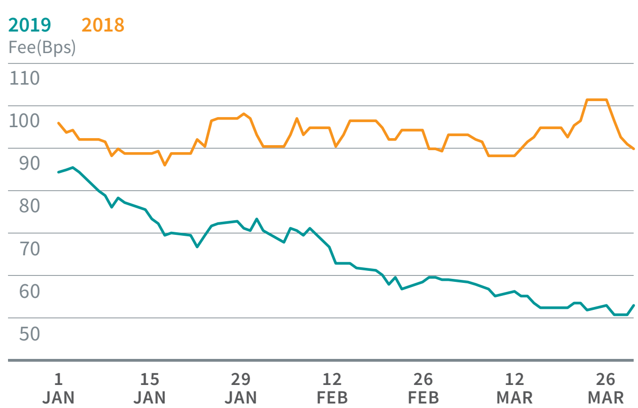
Weighted Average Fee
0.65% ▼ 30%

Average Inventory
$270T ▼ 6%

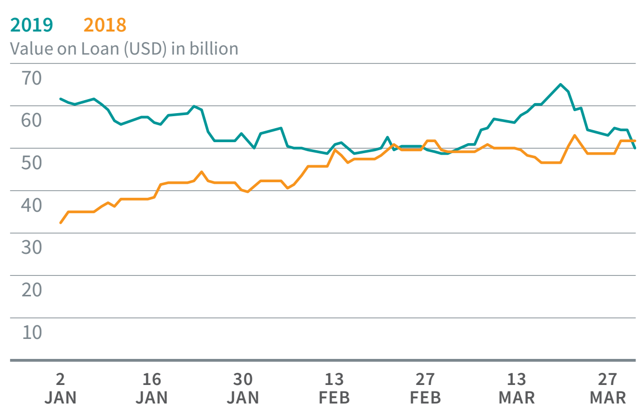
Utilization
11.83% ▲ 33%

Global ETF AUM reached $5T in 2018 before declining with market valuations in Q4. The first quarter has seen AUM surge past $5T and is closing in on $6T at the end of Q1 as the result of market appreciation and investor inflows. The increasing use by institutional investors is reflected by the growth of lendable assets in securities lending. Global ETF lendable assets increased an average of $270bn in Q1, having increased by 10% YTD.

Q1 FEE TREND



Q1 BALANCE TREND



OVERVIEW

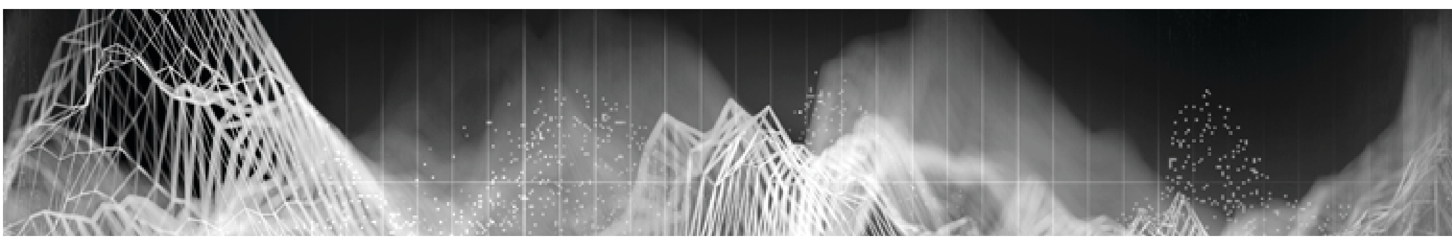
ETF demand growing in Americas	Fixed income ETF revenue declined by 38% compared with Q4	Declining fees pressuring returns	HYG fees decline, still most revenue generating ETF

COUNTRY DETAILS

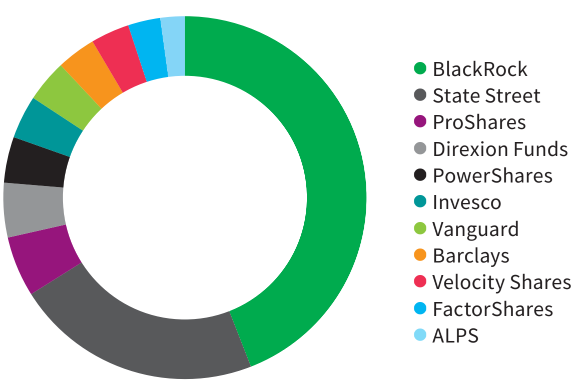
Country	Quarterly Securities Lending Income (USD M)	YoY Change	Average Value on Loan (USD Bn)	YoY Change	Weighted Fees	YoY Change	Average Lendable (USD Bn)	YoY Change	Average Utilization	YoY Change
Americas ETF	66.22	-10.1%	48.84	25.2%	0.55%	-28%	162.95	-7.2%	17.90	37.0%
European ETF	15.99	-35.1%	4.35	-11.0%	1.49%	-28%	51.91	-2.9%	4.47	13.1%
Asian ETF	2.32	-28.9%	0.78	-9.8%	1.23%	-21%	1.72	-31.6%	13.23	8.4%

TOP 10 REVENUE GENERATING FUNDS

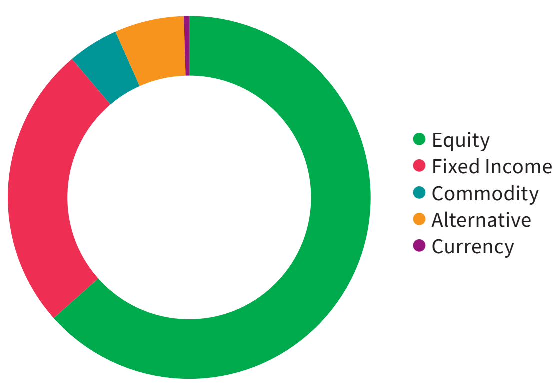
Instrument Name	Ticker	Listing Country	Asset Class	Q4 Revenue Generated ($)
Ishares Iboxx $ High Yield Corporate Bond Fund	HYG	US ETF	Credit	$7.4
Spdr Bloomberg Barclays High Yield Bond Etf	JNK	US ETF	Credit	$4.6
Spdr S&P 500 Etf Trust	SPY	US ETF	Equity	$2.5
Invesco Senior Loan Etf	BKLN	US ETF	Loans	$2.1
Etfmg Alternative Harvest Etf	MJ	US ETF	Equity	$2.0
Alerian Mlp	AMLP	US ETF	MLP	$1.5
Ishares Russell 2000 Etf	IWM	US ETF	Equity	$1.2
Ishares Msci Emerging Markets Etf	EEM	US ETF	Equity	$1.1
Invesco Qqq Trust Series 1	QQQ	US ETF	Equity	$0.9
Ishares High Yield Corp Bond Ucits Etf Eur(Dist)	IHYG	IE ETF	Credit	$0.9



LENDING REVENUES BY ISSUER



LENDING REVENUES BY ASSET CLASS



Corporate Bonds

Eurozone drives growth

Borrow demand for corporate bonds continues to increase, with Q1 average balances of $202bn reflecting a 6% YOY increase. Despite robust demand, declining fees caused revenues to fall 10% compared with Q1 2019 – 4% decline compared with Q4 2018.

USD denominated credits still have the highest demand, with average daily loan balances of $112bn in Q1, an increase of $4.7bn YoY. The growth was entirely in the IG issues, however, declining fees caused the revenue to decline. HY issues saw declining balances and fees, which pushed revenues down 32% YoY. Taken together, the decline in HY demand along with the decline in IG fees pushed revenues for USD credits down just over 20% YoY.

Debt denominated in EUR, GBP and CHF totaled $62bn in Q1 average balances. However, Eurozone currency denominated issues contributed an outsized $6bn in YoY growth. EUR issue revenues grew by $13m YoY, benefitting from both higher fees and higher balances.

Investment grade bond balances increased 11% YoY, with USD, EUR, GBP and CAD denominated balances all higher than Q1 2018. The increasing revenues for IG credits were offset by declining revenues for NIG issues, which fell 6% in Q1. NIG credits were 60% of Q1 corporate bond revenue, down from 64% in Q1 2019.

The creation of ETFs which track credit indices continues to drive borrow demand for corporate bonds, particularly for the constituents of high-yield ETFs HYG & JNK. The credit rally has reduced the short balances for both YTD, however there was an estimated $3bn in average USD HY balances related to the creation of these products – computed by looking at the borrowing of the ETFs compared with the short interest reported to the exchanges.

Convertible bond lending revenue was down nearly 50% YoY on the back of declining balances and fees. Booking Holdings Inc. remains the only convertible bond in the top ten corporates, having achieved just over 13% of all revenues associated with converts.

Overview

Quarterly Revenues
$166M ▼ 10%

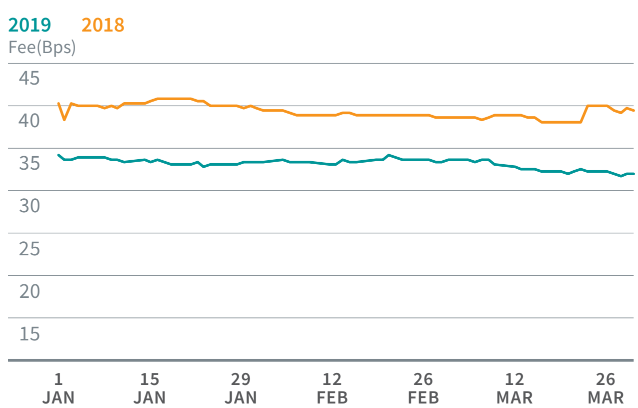
Average Balances
$202B ▲ 6%

Weighted Average Fee
0.33% ▼ 16%

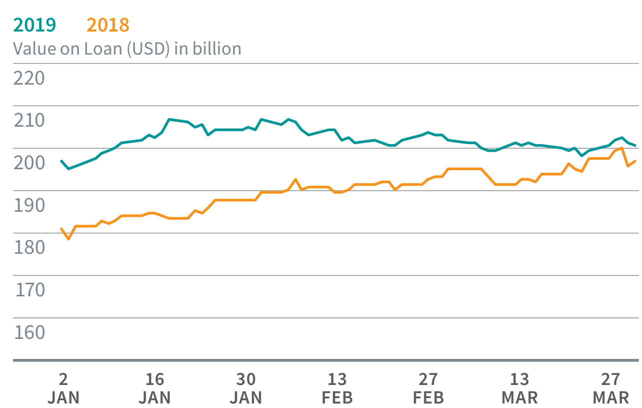
Average Inventory
$3.4T ▲ 6%

Utilization
5.29% ▲ 1%

Q1 FEE TREND



Q1 BALANCE TREND



OVERVIEW

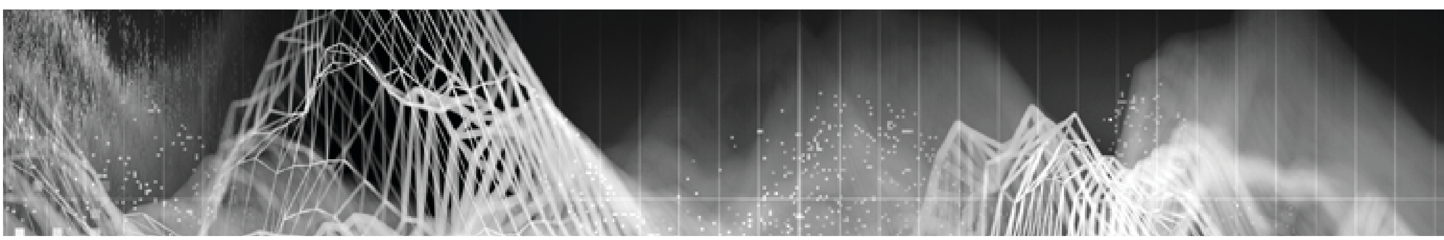
- Revenues decline on lower fees
- Declining revenues for USD denominated issues
- Tereos Finance Groupe most revenue generating issue for Q1
- Increasing revenues for IG credits

ISSUE TYPE DETAILS

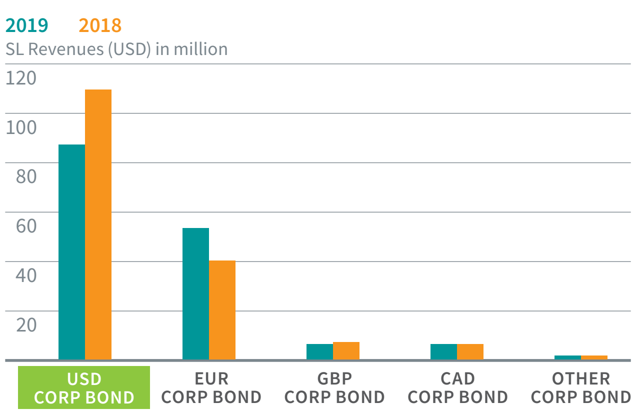
Issue Type	Quarterly Securities Lending Income (USD M)	YoY Change	Average Value on Loan (USD Bn)	YoY Change	Weighted Fees	YoY Change	Average Lendable (USD Bn)	YoY Change	Average Utilization	YoY Change
Corp Bonds	155.17	-6.0%	195.44	6.8%	0.33%	-16%	3,069.89	3.8%	5.74	3.4%
Conv Bonds	9.82	-49.9%	5.18	-23.8%	0.77%	-34%	44.82	0.6%	8.21	-25.7%
Asset Backed Securities	0.95	505.2%	1.42	323.9%	0.27%	43%	296.74	29.3%	0.18	28.4%

TOP 10 REVENUE GENERATING BONDS

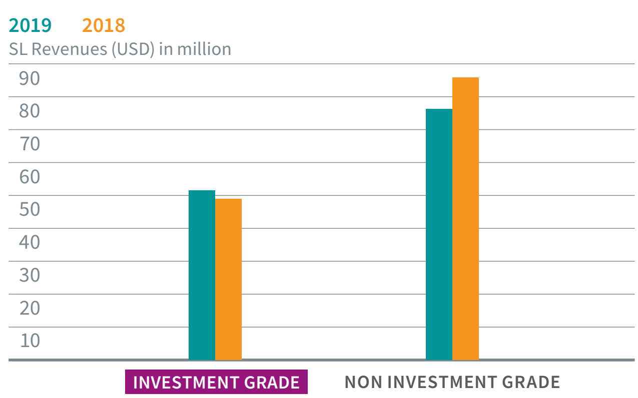
Top Earning Assets	Cusip	Denomonation	Aseet Class	Revenue Generated ($)
Tereos Finance Groupe I Sa (4.125% 16-Jun-2023)	TERES	EUR	Non-Investment Grade	$2.8
Chesapeake Energy Corp (8% 15-Jan-2025)	CHK	USD	Non-Investment Grade	$1.8
Mallinckrodt International Finance Sa (5.75% 01-Aug-2022)	MNK	USD	Non-Investment Grade	$1.5
Centurylink Inc (7.5% 01-Apr-2024)	CTL	USD	Non-Investment Grade	$1.4
Booking Holdings Inc (0.9% 15-Sep-2021)	BKNG	USD	Non-Investment Grade	$1.3
Pitney Bowes Inc (6.7% 07-Mar-2043)	PBI	USD	Non-Investment Grade	$1.0
Weatherford International Ltd (7.75% 15-Jun-2021)	WFT	USD	Non-Investment Grade	$0.9
Twdc Enterprises 18 Corp (2.95% 15-Jun-2027)	DIS	USD	Investment Grade	$0.9
Esselunga Spa (1.875% 25-Oct-2027)	SUPEM	EUR	Investment Grade	$0.9
Nouryon Finance Bv (8% 01-Oct-2026)	STARG	USD	Non-Investment Grade	$0.8



Q1 SECURITIES LENDING REVENUES BY DENOMINATION



Q1 SECURITIES LENDING REVENUES BY RATINGS CATEGORY



Government bonds

Declining balances & revenues

One year ago, the first quarter of 2018 saw the highest average loan balances for government bonds since the financial crisis, just over $1T. One year later, the average balances in Q1 2019 were 20% lower – $829bn – nearly matching Q1 2017. Sovereign debt lending revenues have trended sharply higher since the Federal Reserve started down the path of rate hikes in 2015. However, since the first quarter of last year, each quarter has seen declines both in balances and revenues.

North American sovereign debt lending revenues fell 26% YoY. The primary driver of this decline was US Treasury revenues, even though CAD revenues also fell 8.7%. There were a few short-lived opportunities to lend the 10Y and 30Y US Treasuries at special rates in Q1.

The key driver for US government bond lending remains the demand for HQLA to satisfy liquidity coverage ratios under Basel III. A partial explanation for declining borrow demand may be the increasing primary dealer US Treasury inventories reported by the Federal Reserve Bank of New York, which may be reducing the need to borrow in HQLA collateral. Another driver could be declining rates in Q4, which may have caused some reduction in borrow needs relating to short positions. On a related note, net short positions on the 10-year futures contract have also declined YTD – according to data from the Commodity Futures Trading Commission – thus, a shift towards bullish views on bonds may be reducing the need for borrowing sovereign debt as well.

Overview

Quarterly Revenues
$364M ▼ 22%

Average Balances
$830B ▼ 20%

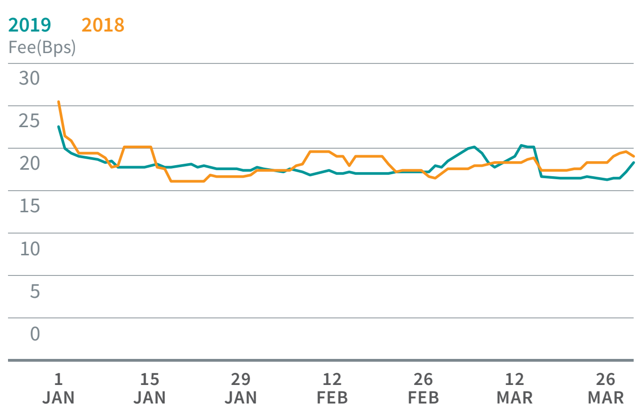
Weighted Average Fee
0.18% ▼ 2%

Average Inventory
$3.0T ▲ 2%

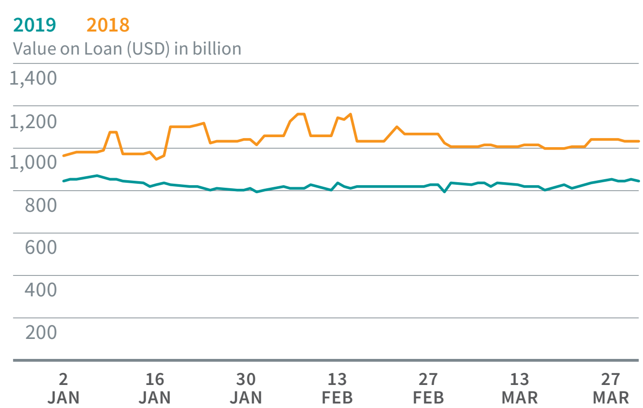
Utilization
22.54% ▼ 20%

Declining balances primarily drove the revenue shortfall, however, fees also declined. There were some opportunities to generate significant returns based on elevated fees, for example the Italian 10Y bond remains the most revenue generating sovereign issue as the result of elevated fees. Gains in Italy were offset elsewhere in the Eurozone, with Spanish, French and German sovereign revenues each declining more than 20%.

Q1 FEE TREND



Q1 BALANCE TREND



OVERVIEW

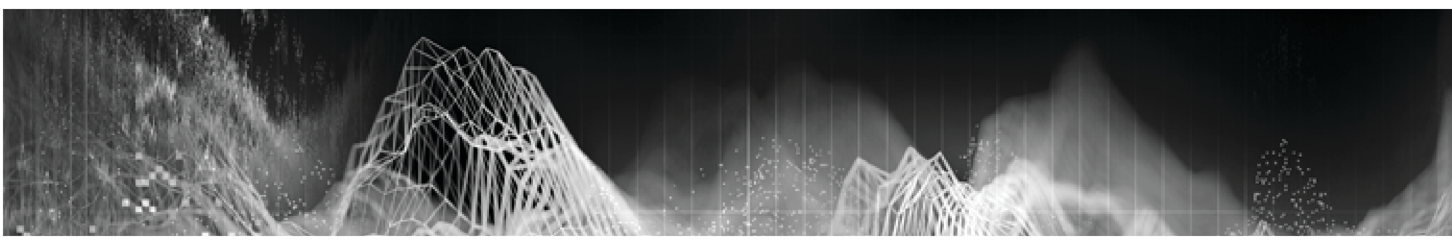
- UST revenues declining
- Italy 10Y remains most revenue generating bond
- Balances declining in all regions
- USTs deliver 45% of govt bond revenues

REGIONAL DETAILS

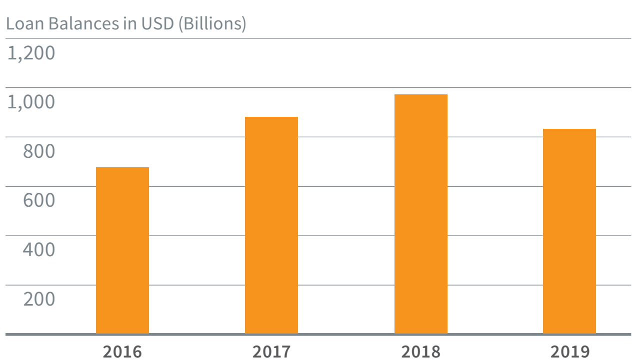
Country	Quarterly Securities Lending Income (USD M)	YoY Change	Average Value on Loan (USD Bn)	YoY Change	Weighted Fees	YoY Change	Average Lendable (USD Bn)	YoY Change	Average Utilization	YoY Change
Americas Bonds (Govt)	211.71	-24.9%	467.43	-21.1%	0.18%	-5%	1,960.49	5.8%	19.92	-26.5%
Asian Bonds (Govt)	9.35	1.9%	18.52	-50.3%	0.20%	95%	71.07	7.0%	9.41	-4.3%
European Bonds (Govt)	142.58	-18.2%	343.67	-16.0%	0.17%	-3%	943.37	-5.1%	28.96	-9.1%
Emerging Market Bonds	13.50	-17.7%	18.28	-0.1%	0.30%	-17%	246.37	11.3%	6.92	-9.7%

TOP 10 REVENUE GENERATING BONDS

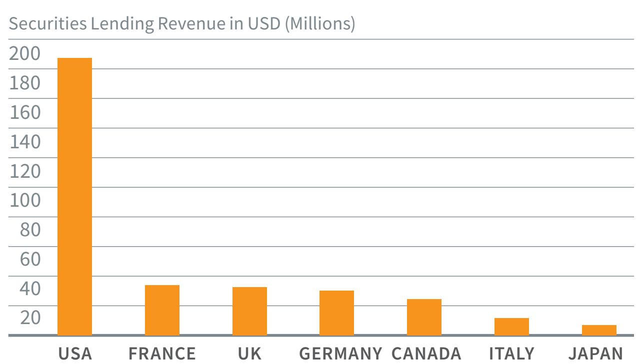
Instrument Name	ISIN	Currency	Issuer	Revenue Generated ($)
Republic of Italy (4.75% 01-Sep-2028)	T6247AVQ6	EUR	Italy	15.83
United States Treasury (2.625% 15-Feb-2029)	9128286B1	USD	USA	4.91
United States Treasury (3% 15-Feb-2049)	912810SF6	USD	USA	3.12
United States Treasury (2% 31-Jul-2022)	912828XQ8	USD	USA	1.97
United States Treasury (1.875% 31-May-2022)	912828XD7	USD	USA	1.96
United States Treasury (1.5% 15-Aug-2026)	9128282A7	USD	USA	1.79
Republic of France (0.5% 25-Nov-2019)	F43750CU4	EUR	France	1.73
Kingdom of the Netherlands (3.25% 15-Jul-2021)	N45810NU3	EUR	Netherlands	1.16
Canada (Government) (2.75% 01-Dec-2048)	135087D35	CAD	Canada	1.13
United States Treasury (2.375% 15-Mar-2021)	9128284B3	USD	USA	0.68



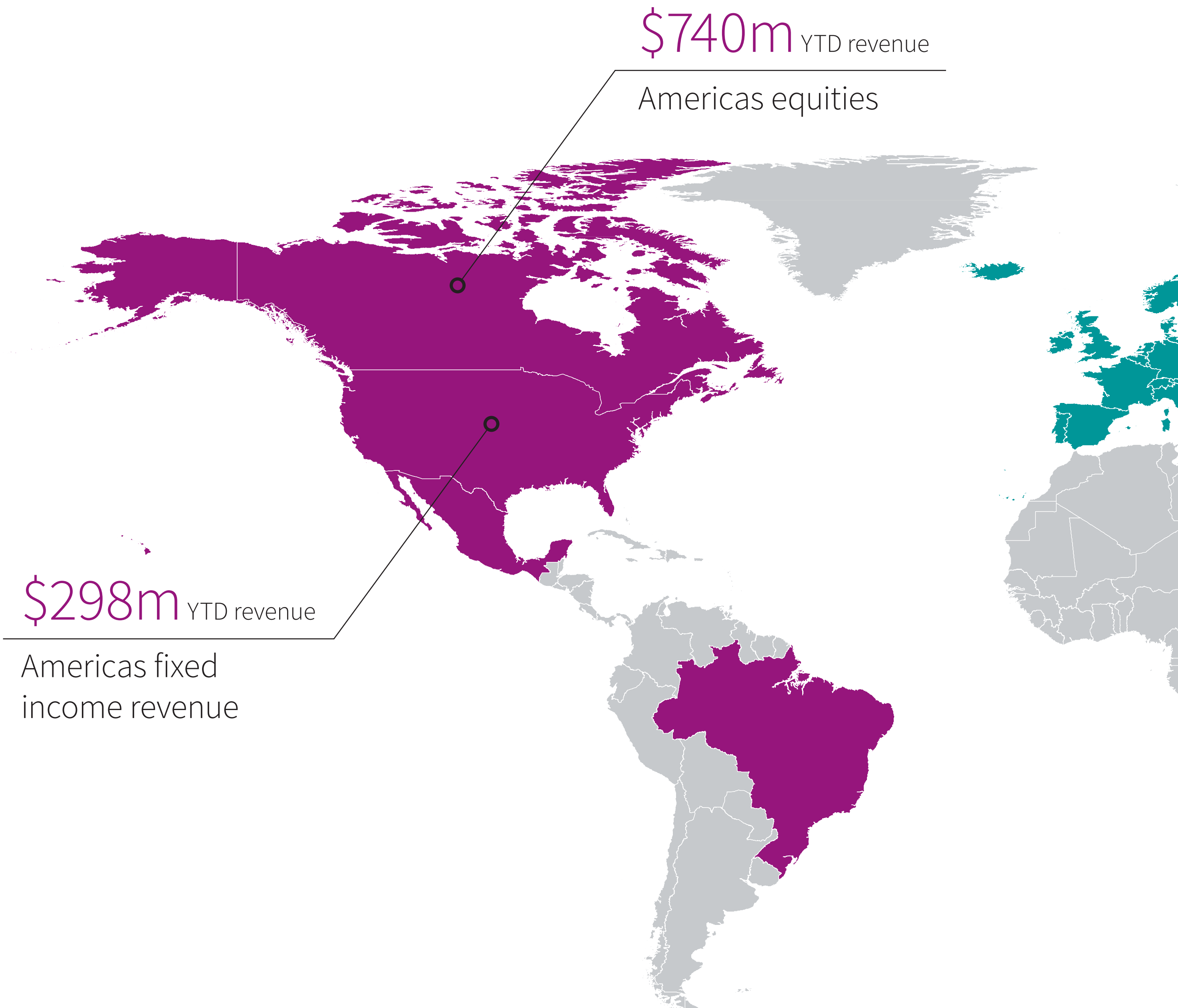
GOVERNMENT BOND BALANCE TREND



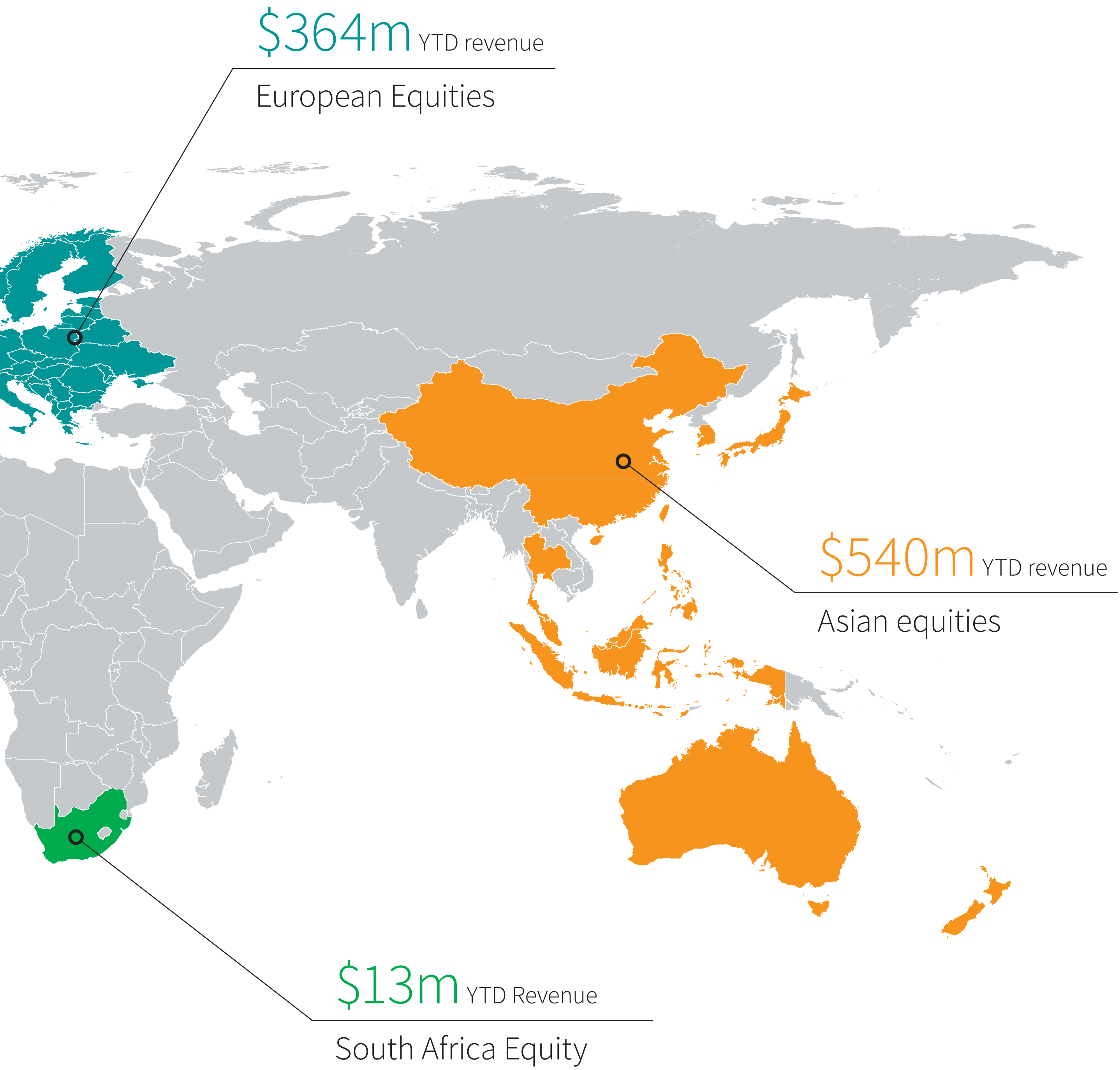
Q1 REVENUES BY ISSUER



Global snapshot



Asset Class	Lendable Assets ($T)	Loan Balance ($T)	% Non-Cash	Utilization (%)	SL Fee
All Securities	$20.4	$2.1	67%	8	0.48%
Government Bonds	$3.0	$0.8	77%	23	0.18%
Corporate Bonds	$3.1	$0.2	48%	6	0.32%
Equities	$13.3	$0.9	61%	5	0.73%
Depository Receipts	$0.2	$0.1	51%	16	1.13%
Exchange Traded Funds	$0.3	$0.1	33%	12	0.65%


$364m YTD revenue
European Equities
$540m YTD revenue
Asian equities
$13m YTD Revenue
South Africa Equity

Product Team

Europe

Kabin George
Kabin.George@ihsmarkit.com

Thomas Ingram
Thomas.Ingram@ihsmarkit.com

Lee Bernini
Lee.Bernini@ihsmarkit.com

Bassam Chekrane
Bassam.Chekrane@ihsmarkit.com

Marc Doise
Marc.Doise@ihsmarkit.com

Rob Nunn
Robert.Nunn@ihsmarkit.com

Americas

Melissa Gow
Melissa.Gow@ihsmarkit.com

Jordan Maskowitz
Jordan.Maskowitz@ihsmarkit.com

Mark Klein
Mark.Klein@ihsmarkit.com

Monica Damas-Shaw
Monica.Damas-Shaw@ihsmarkit.com

Asia

Karen King
Karen.King@ihsmarkit.com

Kyotaro Inoue
Kyotaro.Inoue@ihsmarkit.com

Henry Lau
Henry.Lau@ihsmarkit.com

Jason Yang
Jason.Yang@ihsmarkit.com

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E MSF-Sales@markit.com

AMERICAS
T +1 212 931 4910

EUROPE, MIDDLE EAST AND AFRICA
T +44 20 7260 2000

ASIA PACIFIC
T +65 6322 4200

339925355-0419-CU

Learn more

@ ihsmarkit.com/SecuritiesFinance