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Executive Summary

Asian financial market participants are taking a new look at repo, the result of demand for OTC derivatives margin and a desire to build capacity for local bond markets. As market participants on both the buy-side and sell-side investigate repo, in particular using tri-party service providers, Asian authorities are looking for how to best support this trend.

This paper, written for the Asian Prime Collateral Forum meeting in October 2017, evaluates the importance of Asian repo data collection and transparency in building market confidence. We look at why repo data matters for Asia, repo data in the global context, and what a robust repo data infrastructure could do to support local market development. We also look at the importance for regulators of using repo data to understand market trends and minimize the buildup of systemic risk.

This paper offers practical recommendations to improve repo usage in Asian markets. It should be read by market practitioners in fixed income and Treasury functions interested in using local bonds as collateral, and regulators looking to enhance market liquidity.
Fixed Income Liquidity: A Repo-Based Solution

Key Points:

- Repo is an important building block in creating a robust and liquid fixed income marketplace.
- Selecting local bonds as collateral in repo transactions increases demand for those securities and lends legitimacy to investors looking for long-term holdings.

Fixed income markets are a central mechanism for financing governments and companies in the real economy. In the investments business, it can be overlooked that securities are connected to issuers that invest in infrastructure, build plants, hire workers and help economies grow. Repurchase agreements, or repo, play a critical role in building strong fixed income markets, which in turn supports this growth. A focus on the benefits to people and societies puts fixed income and repo in perspective.

In building robust capital markets, the emphasis is most often on generating and maintaining liquidity. While there are many definitions for this liquidity, it can be expressed as a critical mass of transactions that provides confidence to investors that they can buy and sell when they want to, with a minimal amount of slippage in the price of the security. No one wants to trade if they know they will lose many basis points between the time they see a security price and when the trade is completed. Liquidity is the intangible element that capital markets need for large numbers of investors to decide to participate, with benefits that extend from issuers to intermediaries, to clearing firms and Central Securities Depositories.
Repo is an important building block for the development of liquidity in fixed income markets. It has been viewed as Shadow Banking, and in fact it does provide liquidity that has not historically been transparent and well understood. At the same time, it is also the grease that makes the machine of capital markets move forward smoothly and successfully. As Basel III regulations have taken force globally, market participants worldwide have gained a greater appreciation and understanding of repo transactions. It has also become evident that periodic lapses in repo availability can cause short-term squeezes that offer no benefit to the markets.

For investors, repo is a way to raise cash against assets that are already owned. A long investor in a security can repo out their position and pay a fee to borrow cash, using the security as collateral. This financing tool allows investors to leverage their positions and purchase additional securities, or use the cash for other purposes. Since repo is a fully collateralized transaction (secured by collateral), and is in fact typically overcollateralized, cash investors have near certainty that they will receive their loaned money back when the transaction is complete (see Exhibit 1).

By providing inventory when investors want to sell short or borrow to meet settlement obligations, the repo market can also serve to improve the price discovery process and reduce settlement failures. Stock exchanges around the world actively support legal short selling, and the International Organization of Securities Commissions (IOSCO) is on record since 2009 that short selling is a

<table>
<thead>
<tr>
<th>Security type</th>
<th>Haircut</th>
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<tbody>
<tr>
<td>US Treasuries</td>
<td>2%</td>
</tr>
<tr>
<td>Mortgage backed Securities</td>
<td>2%</td>
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<tr>
<td>Corporate bonds – investment grade</td>
<td>5%</td>
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<td>Corporate bonds – non-investment grade</td>
<td>8%</td>
</tr>
<tr>
<td>Equities</td>
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Source: US Federal Reserve
legitimate part of market activity.¹ It is appropriate that repo not be considered a Shadow Banking behavior but rather a fully engrained part of how capital markets function.

Repo can play an important role in the success of the Asian Bond Markets Initiative, which aims to “strengthen the resilience of the region’s financial system by developing local currency bond markets as an alternative source to foreign currency-denominated, short-term bank loans for long-term investment financing,” according to the Asian Development Bank (ADB).² By allowing long asset holders to finance their positions while not selling, and encouraging cash investors to select local corporate bonds as preferred collateral, Asian markets can develop a new level of liquidity for locally issued bonds. This will provide confidence to issuers and investors alike.

A repo market does not build itself however. There are important actions governments and markets operators can take, not to mention encouraging positive market sentiment, that contributes to investor comfort with participating in a transaction. This paper will focus on data collection and distribution as a core attribute for market development. It will provide the rationale for data collection, global references on which organizations currently collect repo data and why, and recommendations for Asian regulators and infrastructure providers to support the growth of local repo markets.


The Current State of Asian Repo Markets

Key Points:

- **Repo faces competition in Asian markets from unsecured cash borrowing transactions between local counterparties, with unsecured transactions still anecdotally more popular then secured.**
- **A Finadium study from 2014 found US$140 billion in Asian tri-party repo, accounting for 3% of the global tri-party repo market.**
- **A Finadium survey of Asian banks conducted in 2016 found general acceptance of Japanese and Australian government bonds as collateral in OTC derivatives transactions, but not much interest in other currencies outside of the home country’s government debt.**

For investors looking to raise or invest cash, repo faces a major competitor in historically preferred unsecured transactions. Encouraging market participants to turn to repo, a secured transaction, will require not only comfort with the transaction and the collateral, but also a rationale for moving away from unsecured lending and borrowing where it is currently in place.

There are no 2017 data available for the size of the pan-Asian repo markets, but a 2014 study Finadium conducted found US$140 billion in Asian tri-party repo including Japan; this figure comprises some 3% of the global tri-party repo market (see Exhibit 2).³ The tri-party market, which relies on banks and Central Securities Depositories to provide operations and valuation services, is a small but growing portion of Asian repo markets.

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According to a July 2017 report published by Finadium, tri-party repo operators are reporting new clients for their services, as buy-side firms are feeling pressure to ensure that they have steady access to cash to pledge as margin for OTC derivatives. At some service providers, the volume of transactions has increased 30% to 40% over the last year, including demand for margin segregation services, while other tri-party platforms report “significant” growth. New client institutions are signing on and testing operations, with the real volume expected to arrive in 2018 and 2019.⁴

Exhibit 2:
Estimated geographical breakdown of tri-party assets, 2014
Total = US$4.3 trillion

At the same time, participation in unsecured funding markets remains high: as one example, unsecured funding average daily volumes in Hong Kong have grown since late 2015 and now stand at HK$304 billion (see Exhibit 3).

Considering anecdotal and quantitative evidence, we believe that unsecured funding across the region continues to be more popular than secured funding.

**Exhibit 3:**
Hong Kong dollar interbank transactions – average daily turnover (HK$ millions)

As additional data points on market sizing and collateral acceptance, DataLend reported US$10 billion on loan in 2017 in the Korean securities lending market, which is closely related to repo, and IHS Markit found US$68 billion in Asian equities and US$5.3 billion in Asian government bonds on loan across all Asian countries.\(^5\) The Bank of Japan reported in August 2016 that cash lending in the money market sector was JPY¥102 trillion (US$927 billion). These disparate figures show that Asian secured financing markets are active, but by their nature are likely to comprise only cash or government bond collateral. The market does not seem to support corporate bond liquidity at this time.

Preferred Collateral

The kind of collateral that investors will accept matters in the repo markets. All investors are willing to accept major market government bonds but agreement falls off from there. In a fall 2016 survey co-conducted by Finadium, we asked both domestic and international banks in Asian markets about their preferred collateral acceptance types by government bond. Every bank accepted government bonds by their country of residence and most would be willing to accept Japanese and Australian government bonds as well (see Exhibit 4). Every bank also accepted US Treasuries although that was not a focus area in our questions. Banks were quick to point out the hypothetical nature of some of this acceptance however; neither they nor their clients were asking to post or accept anything other than bonds of the national government or government-sponsored agencies.

Exhibit 4:
Which of the following Asian collateral would you accept or like to accept in the future? (Percent)

Source: Finadium

In considering the creation of a Pan-Asian collateral market, we asked whether a standardized basket of bonds would be attractive for collateral acceptance between Asian banks and their clients. We found that 62% of banks liked this idea, although they were uncertain about who would actually be responsible for creating the basket and managing any changes going forward (see Exhibit 5). The 38% of firms that identified being against the idea of a regional basket were concerned that if smaller government bonds were included, then that would require buying and having risk exposure to these countries. That could cause price swings as investors bought up assets to meet the basket’s requirements and to profit from the need of others to hold those assets long term solely because of collateral.

**Exhibit 5:**
Should Asian regulators create a standardized basket of collateral for all regional market participants?

![Exhibit 5: Should Asian regulators create a standardized basket of collateral for all regional market participants?](image)

Source: Finadium

Globally, the idea of collateral baskets has been gaining traction. Clearstream, the International Central Securities Depository, has created a set of collateral baskets across a range of European, US and Japanese equities and bonds. According to their documentation on the product, “Clearstream’s standardised
baskets constitute a set of collateral eligibility profiles designed to cover a range of asset classes and manage a clearly defined spectrum of risk. The aim of this initiative is to increase transparency and liquidity in the market and to facilitate access for new participants.” Many of these baskets correspond to Eurex Repo’s GC Pooling Baskets. If there were market interest, the Hong Kong Stock Exchange, ASX or the Singapore Exchange could create their own products for investors to purchase then deliver as collateral, especially if related OTC derivatives trades were then cleared on the same central counterparty (CCP).

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Who Collects Repo Data Globally and For What Purposes

Key Points:

- The International Capital Markets Association conducts a biannual survey of European repo market participants; their report has become an important industry benchmark and policy advocacy tool.

- In the US, the Federal Reserve collects tri-party repo data and transactions from the Fixed Income Clearing Corporation’s GCF Repo® platform, while an Office of Financial Research pilot project is aimed at collecting repo data across bilateral and tri-party transactions.

- Repo data collection will become significantly more important as repo benchmarks are vying to replace LIBOR.

Data collection in repo markets serves three purposes: to encourage investor confidence, to show best execution and to satisfy regulatory needs for orderly markets. Investors prefer data-driven transparency in most cases to show that the prices they receive are fair. While always viewed as best practice, the push towards price transparency has been mandated by MiFID II; any Asian manager that has enough interaction with European market participants will have to prove MiFID II compliance on best execution.

Data collection in repo markets is a central part of the Financial Stability Board’s advocacy for Shadow Banking transparency. In “Standards and Processes for Global Securities Financing Data Collection and Aggregation,” published in June 2015, the FSB provided “recommendations to national and regional authorities for the collection of consistent and comprehensive data from market participants. Collecting [Securities Financing Transaction] data will allow authorities to identify
and manage emerging risks in the financial system.” Consistent repo data collection will contribute to better data both regionally and globally.

In repo markets, there is typically no single price; transactions can be based on credit, size and collateral; and there are disparate electronic trading systems that capture data. There are private surveys and public pilot programs to collect repo data, yet none of these form a global picture of the market and no pan-Asian data exist at all. There is also a regular difficulty in aggregating data from tri-party providers, which manage a portion of market activity, with data from bilateral transactions conducted privately between two counterparties. The collection of tri-party data is relatively simple while the collection of bilateral data is complex, making estimates of the repo market’s true size an exercise in advanced guesswork.

European Repo Survey and SFTR

In Europe, the main survey that collects repo data is conducted by the International Capital Markets Association’s (ICMA) European Repo and Collateral Committee (ERCC). This twice a year survey asks for the repo positions on dealer books on a specific day. The survey has been very effective as a measurement and advocacy tool, especially when the ERCC has used the data in conjunction with analyses on the impact of regulation. In its most recent survey, published in February 2017 using data collected in December 2016, the ERCC reported EUR€5.7 trillion (US$6.7 trillion) in outstanding repo and reverse repos, a 0.8% year on year growth from the December 2015 data collection (see

Exhibit 6). In spite of overall market growth in collateral demand, the size of the European repo market has barely moved since 2012 as a result of damaging regulation. The ERCC has demonstrated this point in published reports based on their surveys.

**Exhibit 6:**
European repo market size, 2006 to 2016
(EUR trillions)

While the ERCC survey has historically served as the industry’s best approximation of market size, and in fact covers the majority of market participants, new regulation introduced by the European Union will one day supplant part of the data that the ERCC collects. The EU’s Securities Financing Transaction Regulation, or SFTR, requires securities finance market participants in both repo and securities lending to provide detailed daily reporting to a registered and approved trade repository. The regulation is expected to be in effect in 2018.

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It is not currently known how European authorities will access repo information nor how they will publish it. Regardless, SFTR will enforce submission of a range of size and collateral-related data. Along the way, SFTR is also causing substantial business disruption and some say it will force changes to the entire business models of repo and securities lending. The ERCC survey will still have value for the other detail it collects, and the survey may choose to focus on different areas left out of official data collection, but total market size should ultimately become available through the trade repository on a regular basis.

**US Tri-Party Data, Pilot Project and Repo Indices**

Repo data collection in the US has taken a different approach, and has bifurcated between tri-party and bilateral repo transactions. US regulatory authorities recognize the disparity and are working to deliver both data types together, although this may still require some effort.

The Federal Reserve Bank of New York began publishing tri-party repo data in May 2010, following recommendations from a Tri-Party Repo Task Force formed in 2009. The data capture all transactions managed by the Bank of New York and J.P. Morgan including the Fed’s own Reverse Repo Facility, as well as transactions conducted on the Fixed Income Clearing Corporation’s GCF Repo® facility. In 2015, the New York Fed launched a graphical interface that aggregates the data and allows for individual snapshots that allow online manipulation of charts by date, asset class and characteristics of the transaction (see Exhibit 7). This interface is the industry standard for US tri-party repo data statistics.
Alongside tri-party repo data collection efforts, the US Office of Financial Research (OFR) has taken the lead on collection and analysis of the bilateral US repo market, in partnership with the Federal Reserve and the Securities and Exchange Commission (SEC). As the OFR notes on their website, “Information and data on the triparty and GCF repo markets are published regularly, but
information about bilateral repos is scant. In the pilot project, we are focusing on the bilateral repo market, which represents half of the total market.”¹⁰

In a 2016 brief, the OFR reported on the first stage of their pilot repo data collection efforts. They found that: “Although the pilot data collection was a useful exercise in gaining a better understanding of the market infrastructure, it did not provide comprehensive coverage due to its limited scope and challenges related to data quality.”¹¹ More work remains to be done in this important area.

Going forward, the efforts of both the Federal Reserve and the Office of Financial Research on repo data collection are expected to grow substantially. The recent announcement by the Federal Reserve’s Alternative Reference Rates Committee (ARRC) to slowly replace LIBOR with a US Treasury repo index means that US government agencies, and the market, have a strong incentive to optimize data collection, standardization and publication.¹² The Federal Reserve and the OFR will jointly engage in this project. The UK Financial Conduct Authority’s Chief Executive Andrew Bailey recently suggested that they expect to stop supporting LIBOR by 2021 in favor of a transaction-based index as well.¹³ As repo benchmark data becomes more important to the core functioning of both US and


global financial markets, we expect greater levels of sophistication in government systems that collect and distribute the data.

The OFR publishes another sort of repo data collected from the regulatory filings of money funds, in a similar format to the Fed’s tri-party repo page. The OFR’s US Money Market Fund Monitor presents the holdings of funds by manager name, country, credit and asset type. It is possible to narrow down the repo holdings of individual managers by counterparty and asset type (see Exhibit 8). When examining evidence of new types of repo transactions – for example Peer to Peer, which do not utilize bank credit intermediation – the Money Market Fund Monitor tool is a primary resource.

Exhibit 8:
U.S. Money Market Fund Monitor screenshot

Note: All data presented are OFR-derived aggregates on an ultimate parent basis of the original source data. Updated July 17, 2017 with data through June 30, 2017.

Source: U.S. Office of Financial Research
Creating a Pan-Asian Repo Data Infrastructure

Key Points:

- Asian authorities have options to improve repo market utilization of local bonds, including data collection and distribution through trade repositories or periodic surveys.

- Publication of the data could occur on the Asian Bond Market Initiative’s website, sponsored by the Asian Development Bank.

The collection and distribution of repo data at both an industry and granular level gives the market depth. Without public data, repo (and securities lending) have a reputation as an opaque business that may appear shadowy or dubious. With data, repo is simply another investment product utilized by investors and banks worldwide to generate revenues and develop the market. In recent years, an increased transparency in securities lending in particular has resulted in an all-time high level of comfort with the business; Finadium’s latest survey of large asset managers found 94% participation in securities lending with no manager even considering ending their program over the next two years.\(^\text{14}\) For Asian market participants, a lack of repo data can create uncertainty about the product and its future. This could be changed with a concerted repo data collection effort, which in turn would support local collateral utilization and bond market liquidity.

To achieve the objective of greater liquidity in local corporate and government bond markets, and to facilitate greater intraregional utilization of collateral, Asian authorities could appoint a central agency such as the ADB or a third party to

collect repo data either daily or periodically. A systematic data collection effort would require a trade repository, which is a substantial undertaking. At the same time, this would satisfy the directives of the Financial Stability Board for repo and securities lending data aggregation to monitor potential systemic risk. Already trade repositories operate in Asia for OTC Derivatives; extending their work to securities finance would not be unrealistic. Authorities would need to take care however not to enforce data reporting to such a degree that it interferes with current market activity.

A periodic effort may look much like the ICMA’s European Repo Market Survey, conducted biannually on a voluntary basis, which captures a wide range of data points to convey the strength and depth of the market. Regular publication of this information, along with individual government support, would likely encourage market participants to take local collateral more seriously than today. A survey requires a relatively straight-forward level of effort to conduct and gain useful data.

Regardless of who collects the data and how, publication can occur on the ADB’s Asian Bond Markets Initiative home page. The objective of the initiative is “to develop local currency bond markets and facilitate regional bond market integration under the Asian Bond Markets Initiative (ABMI).” Publication of repo data would send a clear signal that repo is an integral and legitimate part of the bond market. Regular publication could encourage market participants to base pricing off the site, which in turn should generate more comfort market-wide that they are receiving transparency and best execution for both internal and external regulatory compliance.

A move towards secured funding would be a benefit to regulators interested in transparent marketplaces and would avoid potential rate-rigging allegations in unsecured Interbank Offered Rate (IBOR) markets. Regional regulators, like regulators everywhere, strongly dislike scandals. A robust repo market could become a benchmark indicator used for a variety of financial products, and official support for data collection would help encourage the credibility of repo as an accepted market product.

For years, Asia has been a region of promise for secured financing with only sporadic bursts of activity to justify the excitement. Now however, a new demand driven by a desire for growing local fixed income markets, along with collateral requirements for OTC derivatives, may be changing the reality on the ground. A robust repo market for funding could add a new and vibrant dimension to both Asian financial markets and the global funding business.
Glossary

ARRC – the Alternative Reference Rates Committee, a group meeting under the auspices of the Federal Reserve Bank of New York.

ERCC – the European Repo and Collateral Council, an industry association that meets as part of the ICMA.

FICC – Fixed Income Clearing Corporation, a division of the US Depository Trust & Clearing Corporation (DTCC).

GCF Repo® - The FICC’s CCP service for cleared repo transactions in US Treasuries and Mortgage-backed Securities (MBS).

ICMA – the International Capital Markets Association, a European industry organization.

OFR – the US Office of Financial Research, created as a result of Dodd-Frank and housed in the US Treasury Department.

Peer to Peer – transactions conducted between two investors without a bank acting as credit intermediary.

Repo – a repurchase agreement, where securities are loaned to Party A in exchange for collateral pledged to Party B.

Shadow Banking – financial activity conducted outside the traditional banking industry, either by non-banks or by banks outside of regulatory supervision in some way.

SFT – a Securities Financing Transaction, typically considered a repo or securities loan.

SFTR – Securities Financing Transaction Regulation, Europe’s rule for a trade repository in securities finance.

Tri-party – a service provided by banks or Central Securities Depositorites that manages operations and valuation for bilateral or centrally cleared repo transactions.
About the Author

Josh Galper is Managing Principal of Finadium and runs the firm’s research and consulting advisory practice. He is a regular speaker at industry conferences and has been quoted in major mainstream and financial industry publications. He holds an MBA from the MIT Sloan School of Management. He can be reached at jgalper@finadium.com.

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