MARKET SNAPSHOT

Hong Kong is one of the largest financial centers in the world. Benefiting from relatively loose regulations, yet strong geographic ties with mainland China, Hong Kong’s capital markets offer diverse financial asset classes and instruments for trading purposes with a high degree of liquidity and market efficiency, as well as transparent regulations. In addition, markets are supported by the HK government, which works to keep market intervention and taxation to a minimum to maintain market competitiveness.

All of these advantages have made HK one of the most attractive financial markets in the world.

World Economic Forum 2013 Ranking

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<th>FINANCIAL MARKET DEVELOPMENT IN HK BY WEF</th>
<th>GLOBAL RANKING</th>
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<td>Affordability of financial services</td>
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This whitepaper has been developed by Equinix together with Kapronasia, to provide you with a comprehensive view of the Hong Kong market across the following topics:

1. Market Trends
2. Asset Classes in HK
3. Opportunities in HK Bond Market
4. Regulators and Regulation
5. Technology and Connectivity

In the series are similar papers providing insights to 'Trading in Singapore', 'Trading in Sydney' and 'Trading in China'. Write to us at financial-services@ap.equinix.com for more information.
**MARKET TRENDS**

**Hong Kong to China and CNY Related Financial Assets and Instruments**

With a GDP growth hovering around 7% and a number of pending market reforms that will significantly open up the market, mainland China currently represents one of the most attractive investment opportunities today. However, there are significant barriers to actually trading in and out of mainland China. Trading limits, capital requirements and foreign exchange concerns make investing in the mainland challenging to say the least.

Due to the close geographical and political relationship between Hong Kong and mainland China, outside of the mainland market itself, understanding of and access to mainland markets is better in Hong Kong than anywhere else globally. In recent years, this access to the mainland market has significantly changed and increased the importance of Hong Kong as a financial market especially for investors looking to trade China.

As the Chinese economy has grown, overseas interest in investing in mainland markets has also increased. Hong Kong serves as the main bridge for this inward investment and there are programs such as the Qualified Foreign Institutional Investor (QFII) program, RMB QFII and regular foreign direct investment (FDI) to invest in certain areas such as equities, bonds, ETFs, financial futures including index futures and debt futures. In addition, there are also some indirect ways to access the market such as investing in Chinese companies listed on the Hong Kong Exchange (HKEx), investing in the CNH market (HK’s Chinese Yuan market) and Chinese Yuan (CNY) bonds (dim sum bonds). Finally, some derivatives based on CNY such as USD/CNH futures contracts are also available.

**China to Hong Kong**

Similarly, as mainland wealthy individuals and institutional investors look beyond the relatively moribund returns of the China mainland market for more diversity, Hong Kong is a natural destination and jumping-off point for trading globally.

Investment by Chinese nationals or companies from mainland China to global markets is subject to restrictions from the mainland side. Chinese individuals have a yearly maximum US$50,000 quota for converting local RMB to a foreign currency, however, once an investor has their money in USD or another foreign currency, they can invest globally by setting up an account at either the foreign branch of a domestic Chinese broker or at a completely foreign broker; although investors tend to prefer Hong Kong-based brokers because of their proximity to the mainland.

Chinese institutions and retail investors can also leverage Qualified Domestic Institutional Investor (QDII) funds, which are regulated and receive quotas from mainland regulators. These funds are allowed to invest in a subset of foreign markets and assets. So individual investors can buy into an individual fund in RMB and the fund will invest outbound in any number of currencies and markets.

Once investors have their money in HK, there are no restrictions from the HK government side to limit Chinese mainland citizens from investing in any investment assets including equities, bonds, derivatives, real estate, etc.

**The Growth in Trading Offshore CNY in HK — Products**

One result of the interest in trading in and out of China has been a rapid expansion of Hong Kong’s RMB business. Setup initially to help offshore companies doing business in mainland China as an alternative source of funding and for mainland companies as a way to lower exchange risk by settling with foreign companies in RMB, the HK Chinese Yuan market, also known as the CNH market, has become a key investment platform and an integral part of the HK financial services industry.

At present, most of the volume of overseas CNY is still concentrated in Hong Kong. However, although the amount of RMB cross-border trade payment is increasing rapidly, the share of trade settled in RMB is still small compared to that of the U.S. dollar, euro and other major currencies.

There are a number of CNY/CNH related products that are traded in Hong Kong markets:

**Dim Sum Bonds**

“Dim sum bonds” are bonds denominated in CNY, but issued outside of mainland China. For instance, The Chinese mainland government issued 3-year, 5-year and 10-year maturity bonds in the Hong Kong market in December 2010. Although the yield of the dim sum government bonds is much lower than that of Chinese government bonds sold on the mainland, they are still welcomed by the HK investors because CNY is thought to be appreciating against HK and US dollars and trading CNH products in the HK market is relatively straight-forward.
HK CNH Market Products and Services

1. CNY deposit services
2. Exchange between CNY and HKD, for normal HK citizens, the ceiling for one time and in one day is CNY20,000
3. Remittance
4. Trade financing
5. CNY bonds (sovereign and corporate)
6. Cross-border trade RMB settlement
7. CNY-denominated stocks
8. CNH spot
9. CNY forward
10. CNY swap
11. CNY NDF
12. CNH DF (Deliverable currency forward)
13. Renminbi Kilobar Gold by Chinese Gold and Silver Exchange Society

Onshore CNY IR products: In August, 2010, the Chinese government approved a trial program to open up part of the Chinese local interbank market. Theoretically, any QFII quota holders are allowed to participate in the Chinese exchange traded bond market. However, as the exchange traded bond market is much smaller than the interbank market, and the QFIIs have very limited Chinese government bonds, this market seems to be less attractive.

Increasing Derivative Trading Volume from Institutional Investors and International Investors

According to the HKEx, the proportion of trading volume from overseas investors and institutional investors has increased in recent years. The charts below show that the attractiveness of the HK derivatives market is growing for both types of investors, which is likely due to the general attractiveness of the market and the proximity to China.

Distribution of Derivatives Market Trading Volume by Investors Type (local vs. overseas)

The gap between local investors and overseas investors has narrowed from 2002 to 2011 and the proportion of foreign investors in 2012 even exceeded the number of local investors, which indicates that overseas investors are playing a more important role in the OTC trading of derivatives market in HK.
Conversely, the gap between retail and institutional investors broadened from 2007 to 2012, indicating that the institutional investors are playing a more important role than retail investors in OTC derivatives trading in HK. In addition, the EP principal trading, which constitutes a large proportion of trading volume, is thought to be predominantly institutional volume, as only licensed corporations can apply to be Exchange participants in HK.
The derivatives trading volume from overseas institutional investors is quite high, especially in the HHI futures market and HIS futures market. In the options market, market maker trading volume takes a large proportion of trading volume and in the futures market, EP proprietary trading also has an important position; both market makers’ trading and EP proprietary trading are thought to be institutional trading.

So in general, institutional investors dominate the HK derivatives market and in some asset classes, foreign investors, especially foreign institutional investors, are the main source of trading volume.

With the growing trading volume of institutional investors and foreign investors, the demands for high frequency trading, algorithmic trading and global portfolio management are increasing which is pushing the need for faster hardware speed and a larger tech footprint in order to establish a competitive advantage in trading. So access to a data center that can provide access to the ecosystem to provide more efficient trading as well as scalability to deal with future business and technology is important.
Orion Market Data Platform (OMD)
The Orion Market Data Platform (OMD) is a next generation market data platform that has been launched by the HK Exchange (HKEx). The HKEx Orion Market Data Platform enables the HKEx to establish points of presence for market data distribution outside of Hong Kong, such as in Mainland China. According to HKEx, for the securities market rollout, HKEx OMD Platform will initially run in parallel with the existing market data system, the Market Datafeed System 3.8 (MDS/3.8). After the transitional period, MDS/3.8 will be completely replaced by OMD.

There are 3 key features of the OMD: meeting diverse customer needs, low latency and remote distribution. The OMD provides a suite of market data product feeds with content, market depth and bandwidth requirements tailored to suit the needs of different types of customer. OMD is meant to deliver vital pricing data to subscribers rapidly and efficiently both inside and outside of Hong Kong.

<table>
<thead>
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<td><strong>Index Data</strong></td>
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Protocol

1. OMD delivers market data via multicast transmission, allowing for future growth in the number of customers without impact on service efficiency.

2. Binary message protocol is offered allowing efficient message processing.

Three Phases for Rollout of OMD

1. **Phase 1a** – Securities Market and index data, rollout in Sep, 2013

2. **Phase 1b** – Mainland Market Data Hub, which is MMDH (tentative by Q1 2014)
   - Initially, only the securities market and index datafeed products will be offered through the Mainland Market Data Hub. Securities Standard and Index Feed are offered as datafeed products and will only be available through the FIX/FAST protocol to meet the prevalent demand in the Mainland market. Provision of more premier datafeed products via the market data hub at a later stage will be subject to market demand.
   - The first market data hub will be established in Shanghai.

3. **Phase 2** – Derivatives Market (tentative by Q2 2014)

As the purpose of the new market data platform is to provide for a variety of customer needs on a fast and distributed platform, customers will need to have a fairly advanced technology footprint to take full advantage of the new platform in potentially both Hong Kong and mainland China.
HKEx provides numerous types of securities products including Equity Securities, Depositary Receipts, Stapled Securities, Debt Securities, Unit Trusts / Mutual Funds (Exchange Traded Funds & Real Estate Investment Trusts), Structured Products (Derivative Warrants, Callable Bull/Bear Contracts & Listed Equity Linked Instruments).

HK Derivatives products also include Hang Seng Index Futures & Options (Including Flexible Index Options), H-shares Index Futures & Options (Including Flexible Index Options), Mini-Hang Seng Index Futures & Options, Mini H-shares Index Futures, Dividend Futures, HSI Volatility Index (VHSI) Futures, CES China 120 Index Futures and BRICS Futures. For Equity derivatives, there are Stock Futures and Stock Options. In addition, there are several currency derivatives such as RMB Currency Futures, Interest Rate and Fixed Income derivatives (HIBOR Futures & Three-Year Exchange Fund Note (EFN) Futures) and Gold Futures.

The HK FX market is the 6th largest FX market in the world and the market makers consist of commercial banks, deposit-taking companies and FX brokerages. FX spot, forwards, swaps, options and other derivatives are traded in the HK FX market.

For emerging growth companies, there is a market “Growth Enterprises Market” where listings tend to be smaller and more focused on earlier stage firms. The Chinese Gold and Silver Exchange Society is the main trading venue for metals.

Numerous bonds are traded in HK. If divided by issuer, there are public sector bonds and non-public bonds (or private bonds). Public bonds consist of government bonds, Exchange Fund Bills and Notes (EFBNs) issued by the Hong Kong Monetary Authority (HKMA), Bonds issued by statutory bodies (e.g., Hong Kong Airport Authority and Hong Kong Housing Authority) and Bonds issued by government-related corporations (e.g., Bauhinia Mortgage-Backed Securities Limited, Hong Kong Mortgage Corporation, Hong Kong Link 2004 Limited, etc.). Bonds in HK are priced in a number of different currencies including HK$, US$ and Chinese Yuan.

Finally, derivatives including swaps, futures and options are traded in the OTC market and include FX, Interest rate commodity and equity related derivatives.
OTC Traded Derivatives Benefit from the Development of the Bond Market
HK's Over the Counter (OTC) derivatives market has been developing alongside the debt market with a strong focus on interest rate derivatives.

Previously, manual confirmation CDS and IRs derivatives trading led to high latency and operational risks in the OTC derivatives market.

Still, although electronic trading has increased, only a minority of the IR and CDS products traded OTC are traded electronically. This will likely shift in the future as trade "electronicification" of OTC trading is a focus of the HK regulators.

Mandatory Central Clearing for the OTC Market
In addition to the gradual shift to electronic trading in the OTC market, from July 2014, all OTC derivatives trading in Hong Kong will need to be centrally cleared which follows a global shift towards centralized OTC derivative clearing. This move would have happened in October 2013, however, due to the concerns about cross-border derivative rules and the recognition of foreign central counterparties, it was postponed until 2014.

As centralized clearing takes hold, having a solid back-end infrastructure with global connections will be important for institutions who want to take advantage of the new opportunities and efficiencies in trading this will allow.
The HK bond market grew rapidly from 2008-2012 both from growth in sovereign and corporate bonds.

A record level of nearly HK$253 billion Hong Kong dollars of corporate debt was issued in 2012, representing an increase of almost 25% over 2011.

There were about HK$67 billion of Government Bonds (GBs) outstanding at the end of 2012, made up of HK$47 billion of institutional GBs and HK$20 billion of retail GBs.

Additional institutional GBs totaling HK$16 billion, with tenors ranging from two to 10 years, were issued in 2012. The bid-to-cover ratios ranged from 2.49 to 3.43, suggesting considerable demand for the bonds. There were inflation-linked retail bonds (iBonds) which amounted HK$10 billion issued in 2013, but there are no further plans from the government for similar issues.

The growth in foreign currency debt issuance especially USD based debts increased dramatically from 2011 to 2012. Figures show that US dollar based debt increased from USD8.8 billion in 2011 to USD28.4 billion in 2012 representing a huge increase of 223%.

Although Hong Kong’s debt market is relatively under-developed compared to its equity market, trading volume is growing. Increasingly data centers that can facilitate best execution, low latency trading / data, safety of data and strong connectivity are necessary to keep up with trading volumes.
There are three principal regulators in HK: the Hong Kong Monetary Authority (HKMA), the Securities and Futures Commission (SFC) and the Mandatory Provident Fund Authority (MPFA). The HKMA acts as the central bank of HK while the SFC is responsible for administering the laws governing the securities and futures markets in Hong Kong and facilitating and encouraging the development of these markets. In addition, the SFC has regulatory oversight of the Hong Kong Exchanges and Clearing Limited (HKEx) and its subsidiaries, namely the SEHK, the HKFE and the three recognized clearing houses. The Mandatory Provident Fund Authority (MPFA) is an autonomous, statutory body to regulate, supervise and monitor the operation of the MPF System.

Main Hong Kong exchanges play important roles in the regulatory system. These include the HKEx (Hong Kong Exchanges and Clearing Limited), HK GEM (Growth Enterprises Market) and the Chinese Gold and Silver Exchange Society. Apart from local exchanges as of the end of October 2012, 19 overseas exchanges and market operators were authorized to provide trade services to institutions in Hong Kong.

Clearing houses are also part of the regulatory system. The main clearing houses / companies are the Central Money markets Unit (CMU) which is the clearing and settlement facility for the HK bond market including Exchange Fund Bills and Notes (EFBNs), Hong Kong Government Bonds and other private debt securities, The Hong Kong Securities Clearing Company (HKSCC), The Stock Exchange of Hong Kong Options Clearing House Company (SEOCH) and Hong Kong Futures Exchange Clearing Corporation (HKCC).

All OTC derivatives transactions need to be reported to trade repositories (TRs) and all standardized OTC derivatives transactions should be cleared at central counterparty (CCP) clearing facilities. The TR maintains a centralized electronic record of data of eligible OTC derivative transactions.
Latest Reform in 2013 — Hong Kong Financial Market Infrastructure Joins Global Regulatory Standards
On the 28th of March 2013, the Hong Kong Monetary Authority (HKMA) and the Securities and Futures Commission (SFC) jointly announced their commitment to follow the new international regulatory standards on financial market infrastructures (FMIs).

The Financial Market Infrastructure (FMI) is a system that facilitates the clearing, settling, or recording of payments, securities, derivatives or other financial transactions. There are five major types of FMIs: payment systems, central securities depositories, securities settlement systems, central counterparties and trade repositories.

Jointly issued by the Committee on Payment and Settlement Systems (CPSS) of the Bank for International Settlements and the International Organization of Securities Commissions (IOSCO) in April 2012, the new standards are contained in a report “Principles for financial market infrastructures” (PFMIs). Effective regulation, supervision and oversight of FMIs are provided through the report, which contains 24 principles for FMIs and 5 responsibilities of regulatory authorities. The PFMIs replace, harmonize and strengthen various earlier standards on FMIs, with the aim of making the FMIs stronger against financial crisis.

The regulations set a new standard in requirements for market participants including the need for convergent global connectivity and fast reliable service.

OMD and MMDH System
The development of the OMD and MMDH systems is an upgrade for HK’s current market data transmission system in order to provide faster and more advanced data services to not only HK, but also other parts of the world (e.g. China mainland).

In order to ensure the stability and speed of the ‘cross-border’ data connections, advanced physical infrastructure is necessary in both HK and China mainland. This, combined with a sophisticated digital ecosystem is required to maximize the network effects.

This digital ecosystem could be provided by the datacenter providers, which allow clients to lower costs, improve application performance and simplify the data center deployment. One ideal large ecosystem may contain sub-ecosystems which help individuals to have better access to products and services.
Hong Kong is one of the most highly developed financial markets in the world. With a wide variety of asset classes and instruments and acting as a key bridge to China, Hong Kong will continue to be an important and attractive market for financial institutions in the future as China continues to grow in importance both as a producer and consumer. Although mainland China’s financial markets are advancing and reforming, we believe Hong Kong will still maintain its status as a international financial center providing some of the region’s most open and dynamic capital markets.

About Kapronasia
Kapronasia is a leading provider of research-based advisory and consulting services focused on the Global Financial technology industry. Through market-leading research and customized strategy, we partner with financial institutions and financial technology providers around the world to identify their highest-value opportunities in Asia and help them to achieve and sustain a competitive advantage in the market.

For more information about Kapronasia, please email: info@kapronasia.com

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