Credit Information Sharing in Hong Kong

White Paper

By Michael Turner, Ph.D., Patrick Walker, M.A., Kazumi Moore
Asia-Pacific Credit Coalition

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Table of Contents

Abstract

This paper examines the credit information sharing (CIS) market in Hong Kong. It explores potential credit market impacts from specific data gaps (positive mortgage payment data and fully reported non-financial payment data), as well as potential impacts to Hong Kong's CIS market and financial services sector, from new competition in credit reporting and related value-added services. A new entrant entered the CIS market in Hong Kong after having been served by a single private credit bureau (PCB) for three decades. Since Hong Kong's existing regulatory framework did not anticipate multiple credit bureaus and requires amendments to accommodate the new entrant while protecting the sector. Dynamics in the Hong Kong CIS market are also being heavily influenced by parallel developments within the CIS market in China. Specifically, the CIS market structure within the People's Republic of China (PRC) is transitioning. First, after granting and then denying conditional licenses to eight possible private credit bureaus, a new public credit bureau managed by an entity founded and supervised by the national government has emerged. The new quasi-public credit bureau, called Baihang Credit Scoring, is envisioned to aggregate data from the eight initial license applicants. This report argues that competition in the CIS market should be supported and regulation updated to account for multiple credit bureaus. In doing so, it should be clarified that the reporting mandate applies all licensed credit bureaus and there should be the same transborder data access rights across bureaus to ensure optimal competition and outcomes. Potentially more important for consumers and the economy, regulators should also expand data required and permitted to be collected, and review ways to expand permissible purposes of credit bureau data. This would improve and expand information sharing and usage in Hong Kong, which would improve lending and spur greater competition in the consumer and small business lending markets. One intriguing possibility is that this virtuous competition could be expanded to the entire Greater Bay Area, thus bringing beneficial private credit bureau competition to the mainland as well.

Executive Summary and Key Findings

The credit information sharing (CIS) market in Hong Kong has evolved in part as a result of and response to external forces. An exogenous shock (East Asian Financial Crisis) led to reforms greatly expanding credit information sharing from negative-only (late payment data) to a hybrid full-file/negative-only system (full-file for non-collateralized loans and auto finance, negative-only for mortgage loans). Now a new entrant, Nova Credit, is joining the incumbent credit bureau, TransUnion Hong Kong, providing competition in the CIS market. In addition, dynamics in China—among them the evolution of the CIS market within the People's Republic of China (PRC) and the gradual integration of Hong Kong into the Greater Bay Area (geographically contiguous area of roughly 68 million people)—will also likely impact Hong Kong's CIS market. For instance, the new entrant in the CIS market is serving or planning on serving the entire Greater Bay Area's multiple jurisdictions.

Existing law in Hong Kong did not envision the presence of multiple consumer credit bureaus, let alone the presence of a "regional" bureau operating in three jurisdictions. In principle, competition from a new entrant should be a net positive for the Hong Kong financial services market. However, lawmakers and regulators in Hong Kong would do well to update the code to promote fair and beneficial competition between the credit bureaus. In addition, specific deficiencies in Hong Kong's CIS system have likely contributed to asset bubbles in real estate, and are preventing financial inclusion efforts from reaching their full potential. These too should be addressed in the near-term to reform and modernize Hong Kong's CIS market.

Key findings include:

Lack of positive mortgage data creates blind spot for lenders: Full-file reporting of mortgage payment data will produce a safer, sounder and more stable real estate and mortgage market. Under the present system, mortgage lenders have little practical means of easily and accurately assessing an existing or prospective borrower's mortgage balances and actual credit capacity. Absent this information, a non-trivial portion of any lender's mortgage loan portfolio may include over-extended borrowers. This population will exacerbate the consequences of an asset bubble bursting. It is far better for lenders to identify and screen for such applicants moving forward.

Proven payment data (PPD) would increase financial inclusion: While Hong Kong is a wealthy and advanced economy, opportunity lies beyond the reach of many residing in the city. One study found over 17% of households lived on less than half the median income in 2011, and over 720,000 residents could not afford to buy medicine prescribed by doctors. [1]

[1] Wong Hung and Peter Saunders. "Report of Research Study on Deprivation and Social Exclusion in Hong Kong." *The Hong Kong Council of Social Service*. November 2012, p.11. Available at: https://www.researchgate.net/publication/237046018_Deprivation_and_Social_Exclusion_in_Hong_Kong

While not a panacea for poverty and inequality in Hong Kong, the inclusion of non-financial payment data (so-called "proven payment data" or "PPD") in credit files could dramatically increase financial inclusion for tens of thousands of Hong Kong residents, opening up previously closed doors to asset building and wealth creation. Lenders could expand into new markets profitably, sustainably, and without undue risk as the addition of new predictive data enables better credit risk decisionmaking.

Permit more uses for already collected data, spur lending competition: On top of adding new types of data, the Hong Kong economy could benefit if the permissible uses of the collected data were expanded beyond the currently permitted core uses. In this way, the same data could be leveraged to produce greater social and economic benefits (*e.g*. pre-screening can improve bank competition, and FinTech requires data to thrive).

Risks from multiple bureaus distorting the HK CIS market should be avoided: The code governing Hong Kong's CIS market co-evolved with the industry. For more than a generation, the Hong Kong market has been serviced by a single private credit bureau—TransUnion Hong Kong. All of that changed in November 2017 with the entry of Nova Credit, a regional credit bureau majority-owned by larger financial institutions. Unless the governing code is updated to reflect the new market structure and promote beneficial market competition, it remains a distinct possibility that the CIS market could be harmfully fragmented if core data furnishers choose to report exclusively to different licensed credit bureaus (as is the case in Japan or Mexico). A regulatory fix to this emerging issue should not be terribly difficult. Regulators should simply extend the credit-reporting mandate to require regulated entities to fully report payment data to all licensed credit bureaus.

Overly prescriptive technology and reporting requirements should be avoided: It is desirable to have general requirements that large, regulated entities (such as banks) must fully report at least certain data fields to all licensed credit bureaus (at a minimum frequency). However, the technical and business model details of how this is carried out should be left flexible and ideally left up to the marketplace given the rapid evolution of technology. In addition, technology differences between credit bureaus could be an aspect of their competition. And even if specific technological requirements are left flexible, general reporting requirements will likely need to be revised periodically to account for potential expansion of what are considered to be "core" data furnisher entities that must report and what are considered to be core data elements and data details that must be reported. As with technology, some degree of flexibility and differentiation in data collected is likely good for competition, allowing the credit bureaus to seek out and experiment with new data sources and services. If all aspects of credit reporting become regulated, beneficial market dynamics will cease and competition among lenders will diminish. This would be suboptimal for borrowers and the broader economy within Hong Kong.

Independence of bureaus should be promoted: When data users and furnishers gain too much direct control over credit bureaus, they can begin to distort the CIS market and reduce the role of data sharing in terms of driving competition among established lenders (especially larger ones) and aiding smaller lenders and new entrants. That is, the CIS market could become a tool of the largest lenders to foreclose competition and extract rents from the financial sector. This can be mitigated by setting limits on lender and lender associations board membership and ownership stakes for licensed credit bureaus.

Regional versus Hong Kong: If one bureau is regional and another is not, this could obviously cause a regional data fragmentation. If having regional data provides a competitive advantage, then this could foreclose competition in the Hong Kong CIS market. Ideally, regulators in Hong Kong should work with their peers in the PRC and Macao to facilitate transborder data flows on an equal basis for all licensed credit bureaus in Hong Kong. Ideally, this could be extended to the entire Greater Bay Area thereby ensuring the benefits of competition to the entire multi-jurisdictional area. The APEC Cross Border Privacy Rules (CBPR) could serve as a useful guide to accomplishing this data exchange.

The policy challenges identified in this report—(1) data collection and use deficiencies in the existing CIS market; and, (2) competitive entry by a regional credit bureau—have achievable policy solutions. However, the window of opportunity to act in order to prevent and/or mitigate against potential economic harms will close quickly. While the policy solutions may be straightforward, the greater challenges, as have been seen in other CIS markets are related to the associated politics and working with entrenched and vested interests.

1 Introduction

As part of the Asia-Pacific Financial Forum's (APFF's) efforts to develop a roadmap for an optimal financial data ecosystem within the Asia-Pacific Economic Cooperation (APEC) member economies, the Asia-Pacific Credit Coalition (APCC) and the Policy and Economic Research Council (PERC) fielded an APEC-wide survey of credit information service providers, data analytics firms, lenders as data furnishers, lenders as users of credit bureau data and value-added services, and regulators. This survey was fielded during the latter half of 2018 and the first half of 2019 to ensure a sufficient response rate among stakeholders in each APEC member economy.

In addition, whenever the CIS market of an APEC member economy (or an influential neighboring economy) exhibits characteristics of interest to the broader region, PERC and the APCC will analyze and discuss those issues in a series of occasional special reports—such as this one on the current state of affairs of the Hong Kong CIS market.

The proliferation of technology and data has played a significant role in the globalization of today's society, and their growing use around the world has tremendous potential to achieve APEC's goal of sustainable economic growth and prosperity in the Asia-Pacific region. Data is at the core of financial services, and the industry's increased interconnectedness demonstrates the need for legal and regulatory regimes that facilitate cross-border data flows. Internationalization is incompatible with data governance laws that only take account of domestic considerations. Furthermore, the data revolution is not without risks, as information can be misused to harm individuals and can be disruptive. As such, emphasis will also need to be on data security, data privacy, data control, and competition. These challenges will strain the capacity of regulators in many emerging markets.

APEC Roadmap for New Financial Services Data Ecosystem

The APEC Roadmap for a New Financial Services Data Ecosystem's objective is greater financial inclusion and efficiency within the APEC economies through a data sharing ecosystem that encompasses legal and regulatory considerations. The Roadmap was created through the APFF platform under the leadership of the APEC Business Advisory Council (ABAC), with contribution from key stakeholders in private and public sectors, as well as multilateral and academic institutions. The Roadmap identifies critical building blocks to enable a regional data ecosystem, and outlines concrete initiatives and actions stakeholders can undertake in key areas to put these building blocks in place.

The Roadmap is organized under two broad themes, general data regulation and cross-border data flows. General data regulation includes the creation of sound frameworks for collecting, storing, sharing, and using data, and the Roadmap promotes consistency between economies by encouraging domestic data governance legislation and policies to be based on key international guidelines, such as the APEC Privacy Framework for data privacy. Full-file and comprehensive credit information systems are crucial financial infrastructure, and translate into clear goals that expand data collection and sharing to bring more people into the financial mainstream. The Roadmap also highlights the need for regulation that balances consumer protection and technological innovation, particularly in emerging markets, and ensures a level playing field as well as confidence and trust in the technology.

Under cross-border data flows, the Roadmap addresses concerns behind data localization, cross-border data privacy protection, data security, facilitating access to data for law enforcement purposes, and promoting the development of domestic infrastructure and data-driven technology industries. Data protection and privacy laws are paramount considerations in regions that do substantial cross-border business with economies under different rules. Hong Kong's long history as a major regional and global financial hub and its domestic relationship with mainland China under the "One Country, Two Systems" policy make it a perfect case study. Cross-border business and data flows are crucial to Hong Kong's economy now and in the future. At the same time, Hong Kong's relatively advanced state of economic development, domestic data sharing, and privacy protections give it the potential to become a model to be emulated if data sharing, data protection, and data privacy rules and regulations effectively evolve to account for technological and economic developments. This challenge, however, is one that all economies are encountering.

2 The Background and Current Situation in Hong Kong

Origins of Credit Information Sharing in Hong Kong

Formal credit reporting in Hong Kong via a credit bureau began in 1982.[2] The establishment of the bureau was a response to losses suffered by lenders from borrowers who were obtaining multiple financing with the same collateral. The only way to prevent this was by creating a central database, a credit bureau, so Credit Information Services Limited was formed by twelve lenders (finance houses). The bureau initially collected and shared purchase and leasing information to solve the multiple financing problem. Several years later, in 1985, the data collected and shared expanded to default data.[3] Then in the late 1980s with the growth of unsecured credit such as credit cards, the credit bureau ownership expanded to include credit card issuers and banks. Through the late 1980s and 1990s the database continued to expand. Credit information sharing originated and evolved organically in the market given changing market needs. Due to privacy rules, however, only negative account data was being shared.

1997 East Asian Financial Crisis

The East Asian Financial Crisis began in July 1997 with the collapse of the Thai baht, and quickly spread across the region. In Hong Kong, speculators attacked the region's currency board, which linked the Hong Kong dollar to that of the U.S., and the Hong Kong Monetary Authority (HKMA) raised interest rates to protect the dollar's value. On October 23, 1997, the interbank offer rate went as high as 300%.[4] Hong Kong's domestic monetary policy kept interest rates artificially low in line with U.S. rates, which led to negative real interest rates and capital inflows. This fueled inflation in asset prices of both stock and real estate markets, which were then dramatically affected by the rise in interest rates. The HKMA eventually had to buy shares to protect the stock and index futures markets, and spent approximately $15.2 billion US of foreign reserves.

The unfolding of the East Asian Financial Crisis in Hong Kong demonstrates the importance of information sharing both in credit markets and the broader economy. When pointing to causes of the East Asian Financial Crisis, many argue that implicit government guarantees produce moral hazard in bank lending, which leads to overborrowing.[5] Both moral hazard (in this case banks

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[2] Rita Chakravarti and Beng-Hai Chea. "The Evolution of Credit Bureaus in Asia-Pacific." *Credit Research Center, University of Edinburgh Business School.* August 2005. Available at: https://www.business-school.ed.ac.uk/crc/wp-content/uploads/sites/55/2017/03/The-Evolution-of-Credit-Bureaus-in-Asia-Pacific.pdf

[3] TransUnion Limited. "Company History" web page of TransUnion Limited website, accessed on 10/05/2018, at: https://www.transunion.hk/about-us/company-history#articleSection3

[4] Richard Wong et al., "Implications for the Hong Kong Special Administrative Region," 79-86, in *Asian Financial Crisis: Causes and Development*. Hong Kong: Hong Kong Institute of Economics and Business Strategy. 2000.

[5] See Paul Krugman, "Fire-Sale FDI," 43-58 in Sebastian Edwards ed., *Capital Flows and the Emerging Economies: Theories, Evidence, and Controversies*, Chicago: University of Chicago Press, 2000; see also Ronald McKinnon & Huw Pill, "International Overborrowing: A Decomposition of Credit and Currency Risks." *World Development* 26 (7), 1998: 1267-1282. Available at: https://www.sciencedirect.com/science/article/pii/S0305750X9800045X; see also Laura Kodres & Matthew Pritsker, "A Rational Expectations Model of Financial Contagion." *The Journal of Finance* 57 (2), April 2002: 769-799. Available at: https://onlinelibrary.wiley.com/doi/abs/10.1111/1540-6261.00441

taking on more risk knowing their governments will bail them out) and market bubbles are caused by information asymmetry.

While information asymmetries are a cause of financial crises, they can also exacerbate its effects by counteracting governments' attempts to alleviate the crisis. Stiglitz and Weiss show how macroeconomic policies meant to counter recessions are less effective when information is not being shared.[6] They add another variable, credit availability, to the links between money supply, interest rates, and investment. The link between money supply and credit availability (which then affects investment) changes over the business cycle, and increasing the money supply will have a weak effect on credit availability in a recession relative to its effect in a boom. It is in everyone's interests – consumers, lenders, the economy as a whole – that full-file and comprehensive credit information is shared in a properly structured sharing environment.

In full-file credit information sharing environments, credit bureaus exchange both negative data (event-based data such as defaults and bankruptcies) and positive data, such as account balances and credit limits. Positive information sharing is not only helpful in increasing acceptance rates, reducing default rates, and improving financial inclusion, it is also key in preventing over-borrowing.[7] With only knowledge of the existence of a borrower's other accounts, and whether they have defaulted, it is difficult for lenders to see *how* indebted they actually are. And without knowledge of moderately late payments or credit limits being "maxed out," it is difficult to see financial stress building up. So, with negative-only data, financial stress is only seen after that fact, once defaults have occurred and it is too late.

While the inclusion of greater quantities and additional types of predictive credit data into the city's CIS network contributed to Hong Kong's overall growth in lending, owing to the limitations of risk analytics based upon only negative payment data, the ability of lenders to accurately assess an individual borrower's ability to repay was greatly curtailed.

For example, a person could secure credit cards with very high limits—$100,000 HK per card—from 5 or 10 different card issuers, and so long as they continued to make their monthly minimum payments, their credit file would appear unblemished. Further, a credit bureau would have no idea how much debt a prospective borrower had already taken on, and therefore was largely blind to a borrower's actual credit capacity (one of the "5 Cs of Credit" with the others being character, context, credit risk, creditworthiness). In this simple example, a borrower could have between $500,000 and $1,000,000 HK of unsecured credit card debt, with only a relatively modest income ($300,000 HK or roughly $40,000 US) leaving them precariously over-extended.

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[6] Joseph Stiglitz & Andrew Weiss, "Asymmetric Information in Credit Markets and its Implications for Macroeconomics." *Oxford Economic Papers, New Series,* 44 (4), Oct 1992: 694-724. Available at: https://www.jstor.org/stable/2663385

[7] See Michael Turner, Robin Varghese, & Patrick Walker, *On the Impact of Credit Payment Reporting on the Financial Sector and Overall Economic Performance in Japan*. New York: The Information Policy Institute, March 2007, available at http://www.perc.net/wp-content/uploads/2013/09/Japan.pdf; see also John Barron & Michael Staten, "The Value of Comprehensive Credit Reports: Lessons from the U.S. Experience," 273-310, in Margaret M. Miller ed., *Credit Reporting Systems and the International Economy*. Cambridge: The MIT Press. 2003.; see also Andrew Powell et al., *Improving Credit Information, Bank Regulation and Supervision: On the Role and Design of Public Credit Registries*. World Bank Policy Research Working Paper 3443, Washington D.C.: World Bank Group, 2004. Available at: http://documents.worldbank.org/curated/en/958501468779185412/pdf/WPS3443.pdf

Even in this state of over-extension, under a negative-only credit reporting system, such a borrower would qualify for additional credit absent negative marks on their credit report. Indeed, evidence from countries with negative-only credit information systems supports this notion, and even suggests that individuals may be incentivized to game the system by borrowing from Peter to pay Paul. In other words, some percentage of borrowers take on additional lines of credit in order to pay existing obligations.

For example, results from a PERC study of 1.8 million Australians found that for a 60% target acceptance rate, the default rate using only negative data would be 3.5%, while the same rate using positive and negative data would decline 65% to just 1.9%.[8] Almost certainly some percentage of those who would have defaulted as a result of this behavior were culled out owing to the use of more comprehensive data. This is because under a full-file credit reporting system, with both positive and negative payment data reported to a credit bureau, lenders are able to see details on a borrower's full credit portfolio, and in most systems would be able to relatively accurately assess a borrower's total debt obligations.

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[8] Michael Turner, Robin Varghese, Patrick Walker, Joseph Duncan and Sukanya Chaudhuri. *Credit Impacts from Comprehensive Credit Reporting in Australia and New Zealand*. Durham: Policy and Economic Research Council (PERC), August 2012, available at: http://www.perc.net/wp-content/uploads/2013/09/PERC-Report-Final.pdf

Post 1997 Crisis Credit Information Sharing

In 1999, Credit Information Services Limited was acquired by TransUnion International and the bureau was renamed TransUnion Information Services Limited (now TransUnion Limited). The bureau continued to operate what was largely a negative-only database for the next four years. While lending continued to grow relative to the period before a private credit bureau existed, this particular type of growth—based upon incomplete information—was not sustainable. This blind spot in Hong Kong's CIS network proved to be the system's Achilles heel. In 2002, with consumer debt to Gross Domestic Product (GDP) reaching 60%, the default rate on credit cards climbed and over 25,000 people in Hong Kong were granted bankruptcy relief, at an average rate of more than 2,000 per month.[9]

The Hong Kong Code of Practice on Consumer Credit Data was revised in 2003 to permit the collection and sharing of positive data and the following year full-file reporting was introduced into Hong Kong. This was again in response to changing market needs. This credit reporting reform, while not mandated by law, was nonetheless encouraged by regulators. After the Asian financial crisis, weak corporate loan demand and loose monetary policy designed to stimulate the economy resulted in high liquidity in the banking system. Loans as a share of deposits fell sharply, and banks were under pressure to access previously untapped consumer credit markets.[10]

The boom in credit card lending and the availability of revolving credit following the crisis led to a rapid growth in credit card debt. Advances on credit cards grew at a rate of 16% per annum between 1998 and 2001.[11] The number of credit cards in circulation grew by approximately 60%.[12] A handful of foreign issuers entered the credit card market through direct marketing, exacerbating the dilemma.

The credit card crisis was attributed in large part by regulators and observers alike to rising liquidity, new entrants, and to a limited credit reporting infrastructure. Credit reporting was limited both in terms of coverage and the types of data collected. Given the combination of an economic environment with low corporate demand, high liquidity, and poor information sharing, the development of an unstable credit boom fueled by poor underwriting was predictable and rising delinquencies followed. Impaired card assets accounted for approximately 14% of the portfolio in 2002, remaining high until 2004.[13]

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[9] Angus Choi. "The checks and balances on Hong Kong's Credit Commitments." *Hong Kong Business*. 8 August 2013. Available at: https://hongkongbusiness.hk/financial-services/commentary/checks-and-balances-hong-kong's-credit-commitments

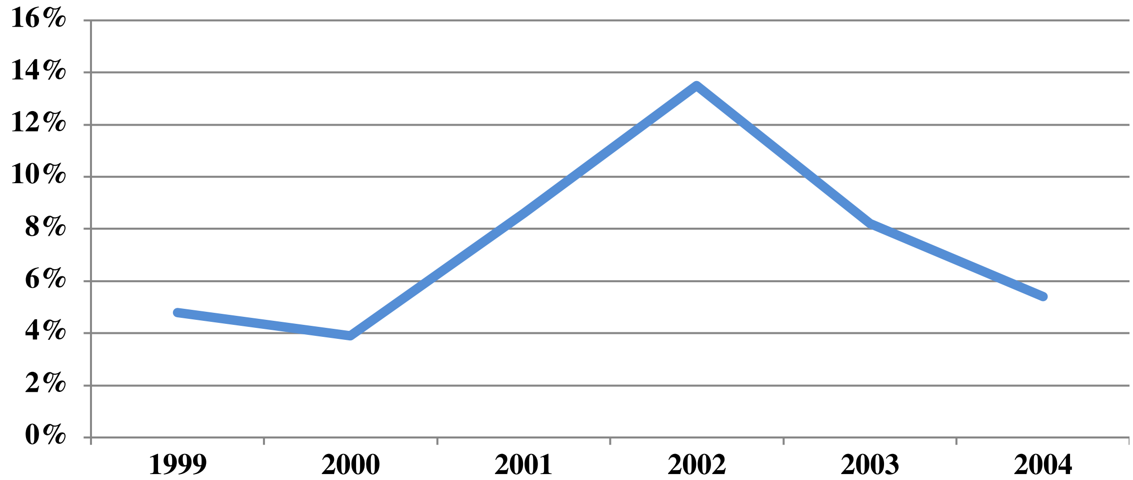
[10] Tae Soo Kang and Guonan Ma. "Recent episodes of credit card distress in Asia." *BIS Quarterly Review*, 2007, http://www.bis.org/publ/qtrpdf/r_qt0706g.pdf

[11] Ibid.

[12] Ibid.

[13] D. He, E. Yao and K. Li. "The growth of consumer credit in Asia." *Hong Kong Monetary Authority Quarterly Bulletin*, March 2005, Table 8, p. 17, available at: http://www.hkma.gov.hk/media/eng/publication-and-research/quarterly-bulletin/qb200503/fa2.pdf

Figure 1: Credit Card Charge-off Ratio, Hong Kong, 1999-2004[14]



Regulators enacted a series of reforms including full-file reporting, as the sharp rise in credit card delinquencies and defaults in 2001 and 2002 underscored the importance of positive credit data in credit reports. The push came not only from regulators but many other stakeholders—the Hong Kong Association of Banks, the Deposit Taking Companies Association, the Licensed Money Lenders Association, and the Finance Houses Association—submitted a proposal for full-file reporting. It is worth noting that, consistent with the hypotheses given a highly concentrated sector, the proposal submitted by the lending industry excluded mortgage information sharing.

Credit card delinquencies and defaults stabilized after 2005, and have remained at reasonable levels ever since. One can only conclude that broader credit information sharing is largely if not exclusively responsible for this outcome. Given this success, it is puzzling why more hasn't been done over the years to pursue this tried and true approach, especially in the residential mortgage market, widely viewed as the most over-priced on earth.

[14] Tae Soo Kang and Guonan Ma. "Recent episodes of credit card distress in Asia." *BIS Quarterly Review*, 2007, p.20, http://www.bis.org/publ/qtrpdf/r_qt0706g.pdf

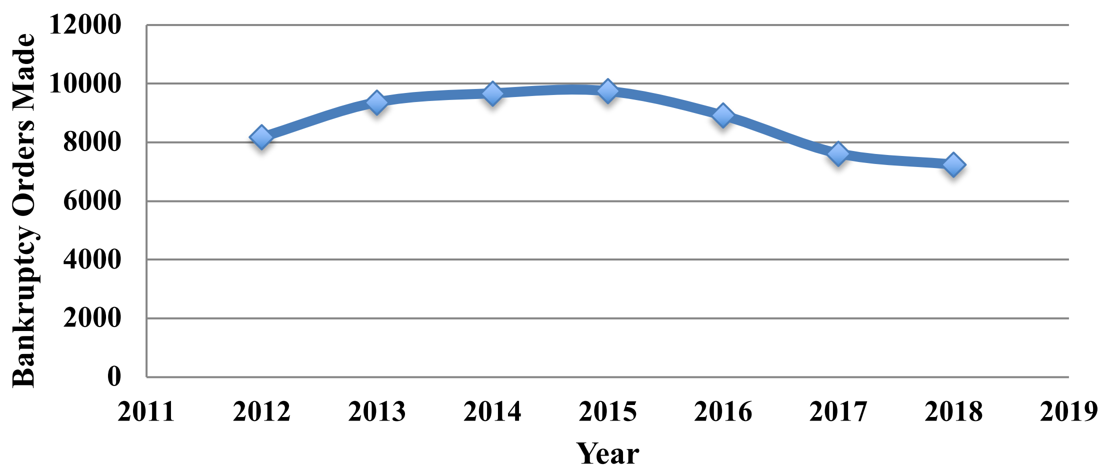
Figure 2: Hong Kong Consumer Credit Facts Pre- and Post- Full-file Reporting

Hong Kong (1998-2002):
- 1,900% growth in personal bankruptcy.
- 12% personal bankruptcy caused by credit card debt.
- Credit card write-offs stood at 13.6% by the end of 2002.
- Debts up to 55x monthly income in 2000 and 42x monthly income in 2002.
- Singapore and Korea had write-off rates of 5.5% and 6.1% respectively.

Hong Kong (Dec. 2002 – Dec. 2004):
- Following the shift to more comprehensive reporting:
- Credit card write-off ratios declined from 13.6% to 3.76%; and
- Credit card delinquency ratios declined from 1.25% to 0.44%.

For the most part, the data expansion had the desired effect on consumer lending in Hong Kong. The greatest contribution the incumbent CRA has made to Hong Kong's economy is its role in supporting responsible borrowing and sound financial management. Since the transition from a negative-only credit information sharing system to a hybrid approach (full-file for non-collateralized loans, and negative-only plus "mortgage counts" data for residential and commercial mortgage loans), the number of bankruptcies per year has fallen year on year from a high of more than 25,000 to 8,178 in 2012. The rate of card delinquency has undergone a similarly dramatic fall from a ratio of 1.56% to 0.21% in 2012.[15]

Figure 3: Bankruptcies in Hong Kong (2012-18)*



Source: Official Receiver's Office of Hong Kong.[16]
*Figure for 2018 is estimated based upon data through end of August 2018.

[15] Choi, "The checks and balances on Hong Kong's Credit Commitments."
[16] Data used here is available at: https://www.oro.gov.hk/cgi-bin/oro/stat.cgi

As the graph above depicts, the number of bankruptcy orders made (bankruptcy petitions granted) has oscillated within a fairly narrow band for the past 8 years, ranging from roughly 7,300 in 2018 (estimated) to 9,750 in 2015. The Hong Kong bankruptcy rate since 2012 has remained within fairly narrow boundaries equal to between 29% and 39% of the 2002 Hong Kong credit crisis peak bankruptcy rate. The stability of this rate over time demonstrates the value of comprehensive credit information sharing within the city.

In an interview with the Office of the Privacy Commissioner for Personal Data, the importance of sharing new types of data (non-financial data) for credit inclusion and the need to revise privacy laws to allow this was acknowledged by an Assistant Commissioner. However, the Assistant Commissioner also noted that their primary focus is on how to revise data protections overall in order to handle the emerging (and present) financial data ecosystem. The PCPD seemed to be giving lesser focus to individual data elements when, to their view, the bigger picture needed to be sorted out first before turning to lower priority issues.[17]

The takeaway from interviews with Hong Kong regulators is that financial inclusion and banking competition—either upstream among consumer credit bureaus or downstream among lenders—are less of a focus than is data protection in the post-Equifax data breach environment. The next section discusses the structure of the Hong Kong financial services sector and its influence on consumer credit reporting in Hong Kong, discussed thereafter.

Bank Concentration

A key area of interest and concern for lenders and regulators in markets is bank competition and how the introduction of credit sharing or credit sharing reforms/expansions, such as a shift to full-file credit reporting, can impact competition and bank concentration.

Prior to the financial crisis, the Hong Kong Monetary Authority (HKMA) worried that the banking sector was among the most concentrated in developed markets. The top three banks accounted for over 50% of customer deposits in almost half of domestic loans. While there were many banks in Hong Kong, a medium-sized local bank accounted for on average 3% of total customer deposits or less.[18]

After 1998, the HKMA, concerned about concentration in the market, began a reform agenda designed to increase competition. The years following witnessed increasing concentration as a wave of mergers took place, which explains the sharp rise in banking concentration between 2001

[17] Interview with senior staff at the Hong Kong Office of the Privacy Commissioner for Personal Data. 4 June 2018.
[18] See David Carse, "The banking industry: competition, consolidation and systemic stability: the Hong Kong experience." *Bank for International Settlements* 4, 2001, 71-74. Available at: http://www.bis.org/publ/bppdf/bispap04f.pdf

and 2003.[19] Despite consolidation in the industry, a number of other reforms increased competition in the market.[20]

In particular, several measures of market liberalization were implemented. Interest Rate Rules were deregulated in 2001, making deposit rates determined by competitive forces. Restricted license banks were given access to the Real Time Gross Settlement System in 1999, branch restrictions for foreign banks was removed in 2001. Market entry criteria were also relaxed in 2002 to attract more providers.

However, as can be seen in Figure 4, the 3-bank share spiked in the years following the financial crisis as a result of consolidation, but returned to the pre-crisis level by 2004. Figure 4 shows the 3-bank concentration ratio (the assets of three largest commercial banks as a share of total commercial banking assets) for Hong Kong from 1996 to 2016.

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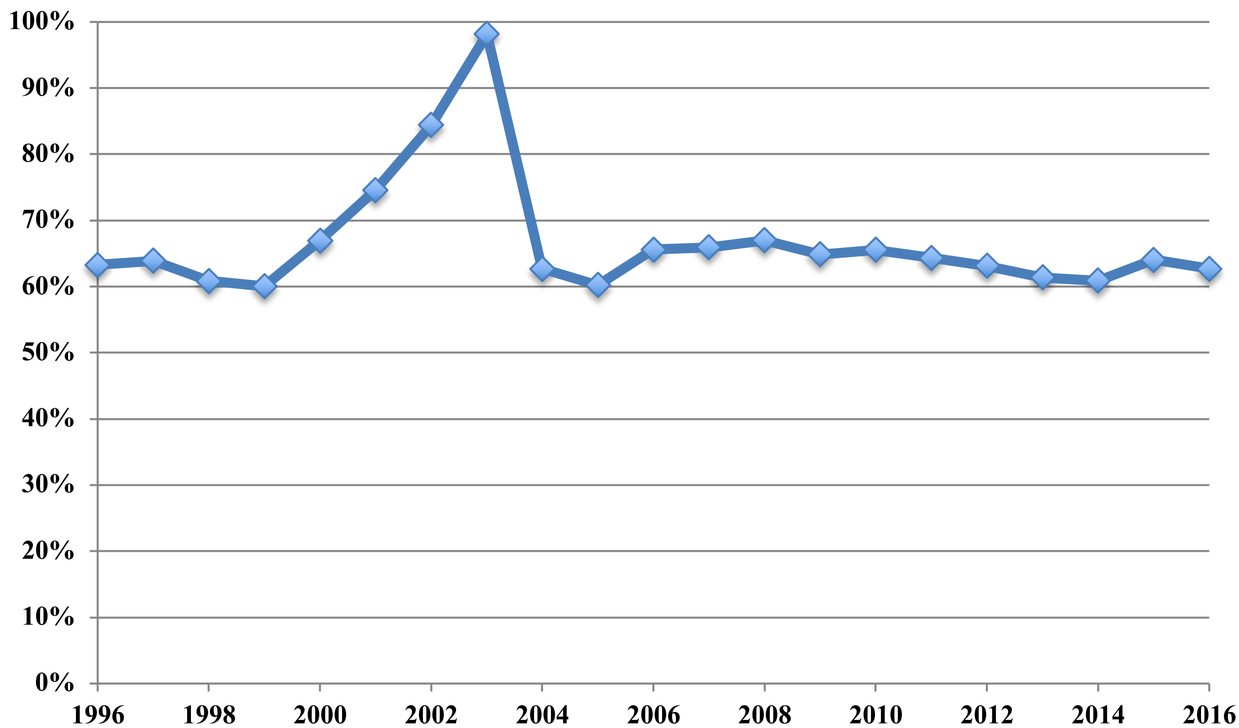
[19] In 2000, Standard Chartered Bank acquired Chase Manhattan's credit card and retail bank divisions and the Industrial and Commercial Bank of China purchased Union Bank of Hong Kong. The following year saw the merger of Bank of East Asia and United Chinese Bank. 2001 also saw the merger of the ten member banks of the Bank of China Group: Bank of China, China and South Sea Bank, China State Bank, Hua Chiao Commercial Bank, Kincheng Banking Corporation, Kwangtung Provincial Bank, National Commercial Bank, Po Sang Bank, Sin Hua Bank, and Yien Yieh Commercial Bank. In the same year, Fuji Bank, The Dai-ichi Kangyo Bank and the Industrial Bank of Japan merged, as did the Development Bank of Singapore and Dao Heng Bank. In 2002, Bank of East Asia purchased First Pacific Bank. CITIC Ka Wah Bank also purchased the Hong Kong Chinese Bank. In 2003, DBS Kwong On Bank, Dao Heng Bank and Overseas Trust Bank all merged into DBS Bank (Hong Kong) Ltd. Guorong Jiang, Jim Wong, Nancy Tang and Angela Sze, "Banking Sector Competition in Hong Kong --Measurement And Evolution Over Time." p. 5. Table 1. Hong Kong Monetary Authority, 30 April 2004. http://www.hkma.gov.hk/media/eng/publication-and-research/research/working-papers/pre2007/RM04-2004.pdf

[20] Guorong Jiang, Jim Wong, Nancy Tang and Angela Sze, "Banking Sector Competition In Hong Kong --Measurement And Evolution Over Time." p. 2. Hong Kong Monetary Authority, 30 April 2004. http://www.hkma.gov.hk/media/eng/publication-and-research/research/working-papers/pre2007/RM04-2004.pdf

Figure 4: Banking Concentration in Hong Kong, 1996-2016[21]



This case was highlighted a 2014 PERC report, "The Impacts of Information Sharing on Competition in Lending Markets."[22] It concluded that while there was evidence that credit information sharing (and expansions therein) made credit markets more efficient, more inclusive, and larger, there was insufficient evidence to say it altered the overall competitive structure of the lending market (bank concentrations, profits). That is, more information sharing may increase competition for customers, improve access to credit for borrowers, and make lending operations more efficient, but not otherwise drastically alter the competitive landscape. This may be the case simply because market participants *all* use the newly available tools, and so none gain a competitive advantage. From this perspective, lenders should not fear "ruinous" competition resulting from greater information sharing that erodes profits and market shares. Here, information sharing reforms and other lending reforms may act to improve the market and industry, and competition for borrowers, without changes to "superficial" measures, such as bank concentration or profit margins.

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[21] World Bank, Bank Concentration for Hong Kong [DDOI01HKA156NWDB], retrieved October 11, 2018, from FRED, Federal Reserve Bank of St. Louis at https://fred.stlouisfed.org/series/DDOI01HKA156NWDB

[22] Michael Turner, Robin Varghese, Patrick Walker, and Sukanya Chaudhuri. "The Impacts of Information Sharing on Competition in Lending Markets." PERC, 2014, available at http://www.perc.net/wp-content/uploads/2014/10/FF_Impacts.pdf

Hong Kong's Current Credit Information Sharing Market

Major lenders in Hong Kong pull credit reports for applications and tend to use credit scores.[23] The HKMA requires (in principle) the use of the most relevant information as possible when underwriting. For account maintenance, however, it appears the general practice is to only utilize credit reports and scores for delinquent customers or for requested major changes, such as a credit limit change. Generally, lenders appear to be satisfied with data quality and coverage (it was reported that only a small portion of applicant were "no-hits"). This suggests a high quality system that may be under-utilized. Some of this under-utilization may, of course, be due to legal/regulatory restrictions. For instance, major lenders with access to high quality/coverage credit bureau data (in markets such as the U.S.) are using credit bureau data more pervasively, in broader account maintenance and risk management efforts. They also use such data in "internal" cross marketing and marketing/acquiring new customers. This can help lender competition and expand access to credit. As lending (as with many sectors) becomes more data driven, third-party data including credit bureau data will enter into to more and more uses (where permissible).

According to the World Bank's Doing Business 2020 Report*, Hong Kong ranks third among 185 economies on the Ease of Doing Business, and 37th overall in Ease of Getting Credit.[24] Decisive factors in the high overall Ease of Doing Business ranking include the efficient credit referencing system and comprehensive laws protecting consumers and lenders.

While Hong Kong fares relatively less well with the Ease of Getting Credit, it still has a decent showing. Scratching beneath the surface, however, leads to some serious questions about whether Hong Kong has major shortcomings not captured in the score. To begin with, when asked if they collect positive and negative data, the results indicate a "Yes" and Hong Kong earns a full point—the highest score on the depth of credit index for that data sharing practice. However, this is not entirely accurate. For residential mortgage loans, lenders report just negative data. The only quasi-positive data reported by lenders to a credit bureau is simply the number of mortgages. This is not full-file reporting, which is the intent of the survey question.

To be fair, this has more to do with the limitations that always occur with general scores and index numbers than anything else. And in a nod to the designers of the World Bank's survey, calibrating the right level of detail to ensure a meaningful response rate is always a challenge. That said, lenders in Hong Kong confront a massive blind spot in assessing individual credit risk owing to the fact that they report negative-only payment data on a very large category of loans—residential mortgage loans.

What does this mean? In addition to the gamut of negative payment data such as delinquent payments and defaults/foreclosures/liens, most countries require/permit lenders to fully report residential mortgage payment data to credit bureaus.

[23] Interview with major lenders at HKAB. 5 June 2018.
[24] For a discussion of the methodology for both Doing Business and Getting Credit, as well as a detailed break out of Hong Kong's data points used to calculate their scores/ranking, please visit: http://www.doingbusiness.org/en/data/exploreeconomies/hong-kong-china#DB_gc

Consequently, a credit report in those countries would include positive data elements akin to the following:

- Loan origination date
- Original loan amount
- Outstanding balance
- Amount of loan payments each month
- Loan maturity date
- Type of loan (fixed rate, floating, variable)

In Hong Kong, lenders report only negative information and a mortgage count figure—as in Mr. Zhang has 3 mortgages. It doesn't require a deep understanding of credit reporting and credit scoring to see how this may be problematic.

Consider the following scenario: Borrower A applies for a mortgage loan in the amount of $8,100,000 HK ($1.28 million US)—the average price for a residence in Hong Kong.[25] Borrower A has never been late on a mortgage loan and currently has 3 other mortgage loans. His credit score is Prime, and he earns an annual income of $2,000,000 HK. By comparison, Borrower B applies for a mortgage loan in the same amount, has two 30-day late payments over the past 4 years on a single mortgage loan, and is a near-Prime credit risk. Borrower B also has an annual income of $2,000,000 HK and only has 1 additional mortgage loan. The properties being purchased by Borrower A and B are identical—same layout, same floor, same building, same condition.

Figure 5: Risk Assessment Challenges Hypothetical Mortgage Borrowers

	Borrower A	Borrower B	Relative Risk
Requested Loan Amount	HK $8,100,000	HK $8,100,000	Identical
Value of Target Property	HK $16,200,000	HK $16,200,000	Identical
Annual income	HK $2,000,000	HK $2,000,000	Identical
Number of Mortgages	3	1	A riskier than B
Presence of Negative Payment Data	None	2 moderate late payments	B riskier than A

When considering the verified information available to a lender in a credit bureau credit report, a lender would have a hard time assessing either individual's credit risk, or the relative risk between the two hypothetical borrowers described above. While loan-to-value (LTV) is verifiable, debt-to-income (DTI) is more problematic. A borrower may be tempted to conclude that Borrower A would have 3 times the DTI ratio as Borrower B, given 3 existing mortgages versus 1, but without

[25] "Average Price of Used Homes in Hong Kong Soars to a Record US $1.28m in First Quarter." South China Morning Post. April 10, 2018. Downloaded at: https://www.scmp.com/property/hong-kong-china/article/2141140/new-home-prices-hong-kong-rose-18-cent-last-quarter-says

knowing the particulars of the outstanding mortgage loans—outstanding balance, monthly payment amounts, loan maturity date—there is very little a mortgage loan officer could conclude with any degree of confidence. Borrower A could have three low value mortgage loans, with favorable terms, maturing in the near term, while Borrower B could have a single massive mortgage loan with unfavorable terms that doesn't mature for another 30 years.

Certainly a lender has internal data, and will know all the details of loans they underwrote. However, even if they ask a borrower for this information on a loan application, they have no practical means of verifying the accuracy of the data. This creates a weakness that can be and is exploited by borrowers determined to invest in the booming Hong Kong real estate market. Because lenders cannot accurately assess a borrower's true debt obligations, it is possible for over-extended borrowers to access large amounts of mortgage credit.

This could lead to trouble should the Hong Kong interbank lending rates (Hibor) increase, as 90% of mortgage loans in Hong Kong are linked to the three-month Hibor.[26] Given that the Hong Kong dollar is pegged to the U.S. dollar, and given the spread between the Hibor and the Federal Funds rate in the U.S. (which sets the interbank lending rate in the US), the HKMA would be forced to either raised the Hibor, defend the HK dollar (which is already at a 33 year low versus the U.S. dollar), or some combination of both to stave off a capital flight. As the Hibor increases, so too does the debt service burden of many borrowers.

It will be lower- and moderate-income mortgage borrowers who will likely lose their assets as a consequence. This is a very real example, as Hong Kong's real estate market has been identified by the UBS Group AG's Global Real Estate Bubble Index as the highest bubble risk of 2018.[27] Prices grew by 14% just this year, but analysts are projecting price declines from 5 to 20% in 2019.[28] Increasing interest rates in an overvalued housing market with price declines forecasted means houses will not be worth what people are paying for them. Hong Kong already limits LTV ratios to 60% for residential properties (50% for foreign applicants),[29] meaning borrowers must pay a substantial down payment for a mortgage, and thus have considerable equity tied up in their homes. This equity will be lost in a market correction. Furthermore, the supply of housing has been increased dramatically to meet demand, which will exacerbate the price decline.

The lack of mortgage information sharing in Hong Kong contributes to widespread financial exclusion. Hong Kong's housing market is rated the world's least affordable, [30] and

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[26] Stuart Burns. "Is the Hong Kong Property Market Going to Be the First Casualty of Fed Tightening?" MetalMiner. April 3, 2018. Downloaded at: https://agmetalminer.com/2018/04/03/is-the-hong-kong-property-market-going-to-be-the-first-casualty-of-fed-tightening/
[27] UBS. *Global Real Estate Bubble Index*. September 27, 2018. Retrieved from: https://www.ubs.com/global/en/wealth-management/chief-investment-office/our-research/life-goals/2018/global-real-estate-bubble-index-2018.html
[28] Shawna Kwan. "Hong Kong's Runaway Property Market May Be Heading for a Fall." *Bloomberg*. September 3, 2018. Retrieved from: https://www.bloomberg.com/news/articles/2018-09-04/hong-kong-s-runaway-property-market-may-be-heading-for-a-fall
[29] Hong Kong Monetary Authority. *Loan-to-Value Ratio (LTV) caps and Debt Servicing Ratio (DSR) limits for property mortgage loans with effect on 19 May 2017*. May 19, 2017. Downloadable at: https://www.hkma.gov.hk/media/eng/doc/key-information/guidelines-and-circular/2017/20170519e2.pdf
[30] UBS, *Global Real Estate Bubble Index*.

homeownership rates have been declining,[31] meaning less people can afford the assets that build wealth. Already, almost half of those who own homes do so through public housing.[32] Instead of keeping delinquency and default rates low through information sharing, lenders do so through the inaccessibly high down payments and LTV requirements. Those who cannot afford mortgages, the majority of Hong Kong workers, are the most vulnerable to economic distress, and their situations will only worsen when the bubble bursts.

Mitigating risk by exchanging information about borrowers – specifically positive mortgage data, proven payment data, and non-bank financial institution data – is a much more inclusive solution than credit rationing, which drives consumers to the shadow banking sector. A large shadow banking sector of unregulated and highly-leveraged non-bank financial institutions is active in Hong Kong, attracting the many consumers who cannot afford high down payments.[33] They require a down payment of only 10%, compared to regulated banks' 40%, and offer interest rates between 6-12% (vs. regulated banks' 2-3%).[34] These shadow banks could trigger the burst if interest rates and defaults rise.[35] Because information is not being shared, there is no way of knowing the extent to which this sector is vulnerable. Sharing more positive mortgage data, proven payment data, and non-bank financial institution data would help in identifying creditworthy borrowers, and borrowers with the ability to withstand interest rate increases. In the long run, it would make owning a home more accessible to the hardworking Hong Kong population.

The lack of positive mortgage data sharing is also a massive blind spot for regulators during this real estate bubble, because there is no way to identify over-extended borrowers and those at risk of becoming over-extended from interest rate hikes. Furthermore, sharing proven payment data and non-bank financial institution data would not only improve credit scoring models' predictive power, it could also serve as a key early warning signal of a bubble burst. Regulators currently lack these capacities. Finally, the current CIS system will constrain the Hong Kong Monetary Authority's ability to address an economic downturn stemming from the bursting of the asset bubble. Stiglitz & Weiss's model referenced earlier shows that increasing the money supply will have a weak effect on credit availability in a recession relative to its effect in a boom.[36]

"The lack of mortgage information sharing in Hong Kong contributes to widespread financial exclusion."

The following section reassesses Hong Kong's Depth of Credit Information score using expert opinion and evidence to reflect these realities.

[31] Census and Statistics Department. "Table 005: Statistics on Domestic Households." November 9, 2018. Retrieved from: https://www.censtatd.gov.hk/hkstat/sub/sp150.jsp?tableID=005&ID=0&productType=8
[32] Census and Statistics Department. "Domestic Households by Type of Housing and Year," *Population By-Census 2016*. Retrieved October 25, 2018, from https://www.bycensus2016.gov.hk/en/bc-mt.html
[33] Yu, Evelyn. "Shadow banking – 'a time bomb in the making.'" *China Daily.* July 6, 2018. Retrieved from: http://www.chinadaily.com.cn/hkedition/2018-07/06/content_36521393.htm
[34] Ibid.
[35] Ibid.
[36] Stiglitz & Weiss, "Asymmetric Information in Credit Markets and its Implications for Macroeconomics."

Figure 6: Recalculating Hong Kong's Depth of Credit Information Score

Depth of credit information index (0-8)	Credit Bureau (WB original)*	Credit Bureau (PERC Revised)**
Are data on both firms and individuals distributed?	Yes	Yes
Are both positive and negative credit data distributed?	Yes	Yes and No
Are data from retailers or utility companies distributed?	No	No
Are at least 2 years of historical data distributed?	Yes	Yes
Are data on loan amounts below 1% of income per capita distributed?	Yes	Yes
By law, do borrowers have the right to access their data in the credit bureau or credit registry?	Yes	Yes
Can banks and financial institutions access borrowers' credit information online?	Yes	Yes and No
Are bureau or registry credit scores offered as a value-added service to help banks and financial institutions assess the creditworthiness of borrowers?	Yes	Yes and No
Depth of Credit Information Index Score	7 out of 8 points	5.5 out of 8 points.

*WB Doing Business scores "Yes" with 1, "No" with 0 points. Final Credit Depth Index score ranges from 0-8 with 8 being considered the optimal system.
** PERC assigns "Yes and No" with 0.5 points.

Currently, Hong Kong has a Depth of Credit Information score of 7 points from a possible total of 8. This is a good score, placing Hong Kong ahead of Japan (total score of 6) and well above the average for East Asia & Pacific Islands (average score of 4.5). As was discussed above, the Doing Business survey has a few limitations—notably the data is derived from non-verified and self-reported sources, and the choice set is sometimes overly narrow (e.g. as in "Yes" or "No").

In addition, survey respondents have incentives to cast their country in the most favorable possible light, and tend to be excessively generous in their responses. As a result, there are occasionally instances (and some would argue frequently) where the score may be slightly disconnected from the reality on the ground. This is not a specific criticism of the Doing Business survey—as far as global surveys go, this is one of the better ones, and arguably the most influential—but rather is a general recognition of the limitations on survey data.

To account for this, PERC has expanded the Depth of Credit Information choice set by one degree, and has added "Yes and No" to "Yes" or "No." While simple, this is effective and can dramatically impact the accuracy of the score. In this case, Hong Kong's Depth of Credit Information drops from 7 to 5.5 points.

Hong Kong loses 0.5 points by changing their response from "Yes" to "Yes and No" concerning reporting both positive and negative information. This is the obvious choice, as mortgage lenders do not report positive payment data to credit bureaus in Hong Kong. Relatedly, because positive mortgage payment data is not reported, it cannot be accessed online by lenders seeking borrower credit payment history information, thereby reducing the score by another 0.5 points. Perhaps less intuitive is the decision to change the response about the availability of credit scores and value-added services. While these are certainly available to lenders, owing to the absence of positive mortgage payment data and non-financial payment data (so-called "Proven Payment Data" or "PPD"), the credit scores and value-added services are based upon incomplete data, and are therefore suboptimally constructed. Error rates—both Type 1 and Type 2—are much higher than they would be were positive mortgage payment data and PPD broadly reported.

On that basis, another 0.5 point reduction was applied for a total reduction of 1.5 points. This revised, and to our minds more accurate Depth of Credit Information Index score, suggests Hong Kong's CIS system is less robust relative to an ideal system and what one would expect from a regional financial services hub. Deficiencies in Hong Kong's CIS network could also lead to a range of suboptimal outcomes for regulators (inadequate data for prudential oversight), lenders (reduced ability to assess credit risk), and borrowers (reduced protection from over-extension, higher-priced credit).

CIS in China and the Greater Bay Area

Source: *Business Times*

With the entrant of Nova Credit into the Hong Kong credit reporting market, it is probably the case that the credit reporting systems in Hong Kong and the mainland will no longer be viewed as completely distinct. While specific Hong Kong rules and regulations govern credit information sharing in Hong Kong, it is also the case that Nova Credit is working to develop an integrated CIS environment in the Greater Bay Area.[37] So, for this reason, a brief description of mainland China's CIS market follows.

The formal consumer credit information sharing system in mainland China, facilitated by a credit bureau or registry, began with the People's Bank of China establishing the Banking Credit Reference Service Center (later called the CCRC), a public credit registry, in 2004.[38] In 2006, consumer credit sharing commenced and the Credit Reference Centre, the People's Bank of China (CCRC) was made an independent agency under the PBOC. Since then, the credit database grew to cover about 850 million consumers by 2015, becoming the world's largest credit database in terms of coverage.[39]

In 2015, the PBOC put eight companies on an application list to establish one or more licensed private credit bureaus. This was done with an eye towards establishing bureaus with different data assets from the CCRC that may better service internet finance and utilize data from internet finance and online services. These eight companies are Tencent, Alibaba Ping An Group, Pengyuan Credit Services, China Chengxin Credit Information, IntelliCredit, Blue Focus and Yin Zhi Jie.[40]

In 2018, none of the eight companies were deemed ready or sufficiently able to proceed with operations as a licensed credit bureau, and as such none of the eight were granted one. There was also concern that each of the eight would only have a narrow view of consumers (dealing with own-company interactions) and that the bureaus would not have been sufficiently independent (some were lenders, others provided online services). Instead, a license was granted to Baihang, which is 36% owned by National Internet Finance Association of China (NIFA), an independent body created, backed, and supervised by the national government.[41] The remaining 64% ownership is divided equally among the eight initial applicants, each having an 8% stake. The idea behind this being that the eight would combine their data resources, providing a more comprehensive view of consumers and avoiding the fragmentation of the data sharing market.

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[37] Interview with Nova Credit executives. 25 October 2018.

[38] CCRC. "Key Events in our History" web page of CCRC, accessed October 23, 2018 at: http://www.pbccrc.org.cn/crc/dsj/index_list_list.shtml

[39] Don Weinland. "Confusion abounds over China's emerging credit reporting industry." *South China Morning Post*. February 4, 2015. Retrieved from: https://www.scmp.com/business/banking-finance/article/1691579/confusion-abounds-over-chinas-emerging-credit-reporting

[40] Don Weinland, & Enoch Yiu. "PBOC calls on Alibaba, Tencent to help develop credit reporting market." *South China Morning Post*. January 8, 2015. Retrieved from: https://www.scmp.com/business/companies/article/1675957/pboc-gives-licenses-alibaba-tencent-and-ping-run-credit-data

[41] National Internet Finance Association of China. "Charter of the National Internet Finance Association of China." Accessed October 23, 2018 at: http://www.nifa.org.cn/nifaen/2955866/2958544/index.html

Baihang will reportedly produce typical credit bureau services, such as credit scores, credit reports, and anti-fraud services.[42] Some even speculate that the CCRC and Baihang databases could be merged, though the need for this is unclear, since individual data elements from different databases can be combined as needed (modern underwriting often uses data from different databases). While the CCRC is clearly a government-run credit registry, Baihang is not a private credit bureau in the traditional sense. It may be better seen as quasi-public or state-directed with private input and partnership.

Nonetheless, as of late 2019, Baihang was yet to be fully operational, with important details of the business model (including data furnishing by some of its owners) needing to be worked out.[43] These include how the individual eight companies would be compensated for the data they contribute. This could be challenging since much of value of online companies relates to the data they produce, collect, and utilize. A September 2019 Financial Times article noted that neither Alibaba nor Tencent were contributing data to Baihang.[44] In fact, it reported that only three of the eight shareholder firms were contributing data.

Laws and regulations governing credit reporting and more general data collecting (and data brokering) activities continue to be developed in the mainland. Policymakers are well aware of the importance of the information-sharing sector (and data flows more generally), particularly in light of the many dynamic leading-edge Chinese Internet companies, and so are developing new rules in this space cautiously.

The New Entrant

Nova Credit was planned early on to operate both as a commercial and consumer credit bureau.[45] It plans to operate a commercial credit bureau for the entire Greater Bay Area and three separate consumer credit bureaus for each of the jurisdictions (Hong Kong, mainland China, and Macao). However, its current focus and priority is with building the consumer credit bureau. To further this effort, Nova Credit is connecting to various data sources from its PRC partners for commercial data that they believe will be beneficial to their consumer credit bureau business. It is currently building its databases and value-added services but is yet to be fully operational in Hong Kong.[46]

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[42] Tracey Xiang. "ChinaFintech – China's First Licensed Consumer Credit Reporting Agency Opens for Business." *China Tech Biz*. May 31, 2018. Retrieved from: https://chinatechbiz.com/2018/05/31/chinafintech-chinas-first-licensed-consumer-credit-reporting-agency-opens-for-business/

[43] Yuan Yang & Nian Liu, "Alibaba and Tencent refuse to hand loans data to Beijing." *Financial Times*. 18 September 2019. Available at: https://www.ft.com/content/93451b98-da12-11e9-8f9b-77216ebe1f17

[44] https://www.ft.com/content/93451b98-da12-11e9-8f9b-77216ebe1f17

[45] Details from this section come from an interview with staff of Nova Credit, Nova Credit Limited. "Seminar on 'Inspiration from Credit Reference Interconnection in the GBA' Convened on 25 June 2018." Accessed October 23, 2018 at: https://www.nova-credit.com/news/detail/20180625, and Nova Credit, Nova Credit Limited. Accessed October 23, 2018 at: https://www.nova-credit.com/

[46] Nova Credit Limited, "Nova TRINE is awarded by etnet FinTech Awards 2019 as Outstanding Intelligent Risk Analytics (A.I.) Solution." 17 January 2020. Accessed June 25, 2020 at: https://www.nova-credit.com/en/news/detail/23/

The Greater Bay Area, also known as the Pearl River Delta area, has an estimated population of nearly 70 million people.[47] It includes Hong Kong, Macao, Guangzhou, and Shenzhen. Since Nova Credit plans to serve this multi-jurisdictional area, one challenge to overcome would be the differing laws between the mainland, Hong Kong, and Macao. As credit data already can cross some national borders (for instance, the U.S.-based Nova Credit Inc. specializes in facilitating this between the U.S. and many other countries), dealing with jurisdictional issues can be surmountable, depending, of course, on the details of the local laws. While it does not appear that its mainland consumer credit bureau operations have a credit bureau license (as Baihang has the only one besides the CCRC), as previously mentioned, it may not need that in the mainland. Policymakers and regulators may also be reluctant to formally fragment the credit reporting market with a licensed *regional* credit bureau. On the other hand, as the credit information sharing market and governing laws and regulations develop in China, Nova may be seen as a useful venture (credit bureaus in the U.S. began as regional venture). In Hong Kong and Macao, however, Nova Credit is a registered entity and must adhere to local laws. Data transferred across the jurisdictions would also need to adhere all pertaining rules and regulations.

"Regulators in Hong Kong should avoid extreme fragmentation by requiring that when reporting is mandated, it is mandated to all licensed bureaus."

TransUnion currently only operates in Hong Kong, although the logic of facilitating data flows between the mainland (such as from the CCRC and Baihang) and TransUnion's Hong Kong operation does present itself as the Greater Bay Area becomes more integrated.

By maintaining both a commercial and consumer data repository, Nova Credit aims to serve not just those markets but also be in a position to leverage and integrate both types of data to better serve small businesses and entrepreneurs. In this segment, both consumer credit data and commercial data are used to assess risk and underwrite credit for small business loans.[48] Nova Credit also plans to utilize leading edge analytic techniques, data management, and Big Data where possible. Although its ownership structure has yet to be fully determined, it is expected that it will be primarily bank-owned, with remaining ownership by a major global information sharing company and/or a strategic technology partner.

For consumer data from Hong Kong, Nova Credit would seek the standard permissible data furnished as directed by current rules and regulations in Hong Kong. For mainland China, it could source data from its own sources, from the CCRC (for standard credit data), and from Baihang (when or if that resource becomes available). Nova Credit plans to produce standard credit bureau products, such as credit reports, credit scores, fraud detection solutions, KYC solutions, and other risk management solutions.[49]

[47] Nova Credit Limited. "Seminar on 'Inspiration from Credit Reference Interconnection in the GBA' Convened on 25 June 2018." Accessed October 23, 2018 at: https://www.nova-credit.com/news/detail/20180625
[48] Interview with Nova Credit executives. 25 October 2018.
[49] Interview with Nova Credit executives. 25 October 2018.

PERC and the APCC have long advocated for regulated competition in the credit information sharing market—both upstream among repositories, and downstream in value-added services (e.g. scorecards). If properly managed, Hong Kong and the Greater Bay Area could benefit economically and socially from a competitive CIS market.

Other Aspects of Optimal CIS Markets

PERC's "Credit Bureaus in Emerging Markets: Overview of Ownership & Regulatory Frameworks," concluded that, particularly for more advanced bureaus and markets (like Hong Kong), private bureau ownership/control by independent third parties (not data furnishers or data users) acting under governmental regulation (typically central bank or a "credit regulator") is seen as the optimal structure to enable long-term credit bureau and credit information sharing development.[50] This is because private, independent bureaus respond to the needs of the entire market, and are not tempted to be skewed to focus on the needs of the major owners.

In PERC's "Implications of Siloed and Segmented Data in Credit Markets," the risks from allowing harmful fragmentations in CIS markets was examined. Cases such as Japan and Mexico demonstrate how such fragmentation can distort the market.[51] In particular, PERC's 2007 "On the Impact of Credit Payment Reporting on the Financial Sector and Overall Economic Performance in Japan" found the CIS fragmentation resulted in meaningful reductions in credit access and degradations in underwriting tools.[52] Such fragmentation can also be driven by data furnisher or user ownership in, or control of, bureaus, as the owners may choose to only report to the bureau over which they exercise some degree of control. The regulators in Hong Kong should avoid such extreme fragmentation by requiring that when reporting is mandated, it is mandated to all licensed bureaus.

Fragmentation of credit data from banks is only one aspect of harmful information limitations. It is also detrimental if subsets of other nonbank lenders and financial service providers are not part of the credit reporting system or can not use the data. Allowing uses of credit data for pre-screening (which can be done in a way that protects individual privacy) and for nonbank data users can spur lending and financial services competition as well as economic efficiencies more generally. Regulators around the world are recognizing the range of potential benefits from the nascent FinTech space—including increased financial inclusion, growth in access to finance, better quality customer service, and increased transparency—and are taking an arm's length approach to regulating the new entrants within the financial services sector. And while there is an emerging discussion on the relative merits of an activities-based approach to regulation as opposed to an

[50] Michael Turner, Robin Varghese, & Patrick Walker, *Credit Bureaus in Emerging Markets: Overview of Ownership & Regulatory Frameworks*. Chapel Hill: Policy & Economic Research Council (PERC), September 2014, available at http://www.perc.net/wp-content/uploads/2014/09/EM.pdf

[51] Michael Turner & Patrick Walker, *Implications of Siloed and Segmented Data in Credit Markets*. Chapel Hill: Policy & Economic Research Council (PERC), December 2016, available at http://www.perc.net/wp-content/uploads/2015/12/Data_Silos.pdf

[52] Michael Turner, Robin Varghese, & Patrick Walker, *On the Impact of Credit Payment Reporting on the Financial Sector and Overall Economic Performance in Japan*. New York: The Information Policy Institute, March 2007, available at http://www.perc.net/wp-content/uploads/2013/09/Japan.pdf

entities-based approach—there remains a need to enable room for experimentation, especially with respect to start-ups employing data-intensive models.

3 Conclusions and Recommendations

Regulators and policymakers in Hong Kong have at their disposal a range of policy options to wield in order to: reduce the probability and severity of asset bubbles; increase financial inclusion by making consumer lending fairer and more responsible; and sustain growth in lending to the private sector without taking on undue levels of risk.

While there is relatively less urgency for enabling/mandating the inclusion of fully-reported non-financial payment data compared to both mandating the inclusion of positive payment data on mortgage loans and for reforming code governing the city's CIS market, this change is no less important to the long-term health and viability of Hong Kong's financial services sector. In addition, an expansion of permissible data uses can promote an innovative FinTech environment (which needs data) and promote lending competition (via prescreening) by leveraging *already* collected data for more purposes (with IT advances, many of these can be specifically authorized by the consumer).[53] However, given the rapid pace at which developments are unfolding in Hong Kong, we strongly recommend lawmakers and policymakers undertake the following sequence of reforms:

[53] In addition, an interview with a large third party collection agency in Hong Kong (8 February 2018) revealed the difficulty/inability of such non-formal lender institutions in using credit bureau data.

Near-term Reforms (within 12 months)

Ensure level playing field in CIS market—The entry of a new credit bureau in Hong Kong has the potential to either drive competition and innovation within Hong Kong (and to some extent the Greater Bay Area), or to fragment the CIS market and even foreclose competition in the future.

There are three primary policy changes that Hong Kong policymakers should implement in order to ensure a vibrant and innovative CIS market, which in turn ensures a competitive financial services sector.

1. Mandating that all regulated financial services firms fully report to all licensed credit bureaus operating within Hong Kong. By doing this, the core database in the repositories of the two competing credit bureaus would be identical.
2. Limiting lender (data furnisher/data user) ownership and board participation to maintain the independence of Hong Kong credit bureaus. Independent credit bureaus will focus on creating services and products to benefit a wide array of potential end users, enabling greater competition and innovation.
3. Allow all licensed credit bureaus identical access to transborder credit data—between Hong Kong and the rest of the PRC to begin with, and then among Hong Kong and other APEC member economies as per the Cross Border Privacy Rules established by APEC to facilitate and guide transborder data flows. Requiring all credit bureaus to have the same access to extra-jurisdictional data on a per query basis effectively neutralizes the potential of an unfair competitive advantage that a pure regional credit bureau would have over a city-only credit bureau, that would ultimately harm competition.

In combination, these three measures will work to promote beneficial competition in the Hong Kong CIS market. This would be in the best interest of the residents of Hong Kong—borrowers, lenders, regulators, and all participants in the economy who require access to credit for personal and business purposes.

We note that just as we have finished this report we have seen news reports suggesting that the HKMA is indeed beginning the process of working through some of these issues (credit bureau licensing, updating regulation language, reporting mandates, and ways to promote optimal, beneficial competition).[54] The reports suggest that the HKMA is looking to have a central source to which data furnishers report and from which data is then distributed to the credit bureaus. While we do not have details of the proposed model, if it is designed with the collaboration of the government, data furnishers, and credit bureaus, it could produce efficiencies in data reporting.

That said, the actual transmission of data is not particularly taxing. It is from aligning the data reporting technical standards that material efficiencies and benefits can arise. In the US, for instance, this is carried out by a non-governmental credit reporting industry standards-setting body. These standards continuously evolve given changes in credit reporting. As such, it is prudent to have this committee, body or process connected to market forces as much as possible and not unduly dominated by particular stakeholders. Even better if data furnishers could choose to report

[54] See: https://hk.finance.appledaily.com/finance/20200622/IHJAVMTIV4JJPLGID4ESGCM5TM/ and https://hk.appledaily.com/finance/20200518/RBIMNRZBYSFFHQFYYQIVHCV4M4/

to the central source or directly to the licensed credit bureaus, so long as they report the minimum data required and adhere to the agreed on data format for core data. This way the "central source" would act as a minimum reporting bar, but flexibility would exist if a credit bureau with data furnishers wanted to innovate and raise the bar on their own. This could guard against innovation in Hong Kong credit reporting being slowed down by a potential bottleneck.

Mandate full-file mortgage payment reporting: For reasons that remain somewhat puzzling to nearly everyone outside of Hong Kong, and to many residents of Hong Kong as well, residential mortgage lenders are required to report negative payment data to the incumbent private credit bureau (and presumably to the new credit bureau), and nothing else save for mortgage count data (the number of open mortgage accounts a borrower has with a particular lender). This practice remains in Hong Kong despite the absence of a self-evident and logical explanation for this practice, and despite the well-known systemic risk created by this blind spot in credit risk assessment (e.g. capacity is defined as income and assets less obligations, and a lender's ability to accurately assess a borrower's credit capacity is impeded without positive data, thereby diminishing the ability of credit bureau credit scores to accurately differentiate between goods and bads).

Given the seeming existence of a massive asset bubble in Hong Kong's real estate market, as evidenced by their recent ranking by UBS Group AG as the most overvalued real estate market on earth, now would be an ideal time to reform this practice and implement full-file residential mortgage loan reporting. By implementing this simple measure, lenders would immediately be able to see their exposure to risk owing to borrower over-extension. In turn, lenders could make timely and manageable adjustments to their provisioning and capital adequacy requirements to account for risk, and could set aside funds against bad loans. While potentially painful over the short run, this would be far less painful than a sudden and dramatic shock associated with going into a real estate crisis blind and fully unprepared. In addition, regulators would have a better sense of systemic risk, and borrowers would be better protected from taking on debt they cannot afford.

Medium-term Reforms (between 12 to 24 months)

Encourage (if necessary mandate) the full-file reporting of proven payment data: It may strike many outside of Hong Kong as surprising that a non-trivial minority of Hong Kong residents live in poverty or are working poor. Financial exclusion is a substantial issue in Hong Kong and high cost lenders such as fringe financial institutions (FFIs) are found in abundance throughout Hong Kong. While many of the Credit Invisibles found across the city may not have formal credit, they do make regular payments for rent, electricity, gas, water, wireless phone service, satellite and cable TV service, and broadband service, among other non-financial credit-like payments. Having such payment history populate a borrower's credit file provides lenders with a deep, robust, and global view of a prospective borrower and enables lenders to extend affordable credit to many Hong Kong citizens who have heretofore relied upon usurious FFIs to meet their real credit needs.

In fact, according to the World Bank's Doing Business survey, Ease of Credit Access Depth of Credit Information Index, 90 countries collect and report some form of proven payment data. Admittedly, this is generally full-file reporting but not always so. For Hong Kong and other geographies to capture the full benefits of PPD, it must include both timely (positive data) and late (negative data) payment information.

Expand permitted uses of credit data and establish a regulatory sandbox for FinTech: In order for Hong Kong to remain competitive with Singapore and others as a leading regional financial services hub, it must create a regulatory environment that is conducive to innovation and fosters competition in lending markets. Allowing uses of credit data for pre-screening (which can be done in a way that protects individual privacy) and other data users can spur lending competition and economic efficiencies. In addition, regulators around the world are recognizing the range of potential benefits from the nascent FinTech space—including increased financial inclusion, growth in access to finance, better quality customer service, and increased transparency—and are taking an arm's length approach to regulating the new entrants within the financial services sector. And while there is an emerging discussion on the relative merits of an activities-based approach to regulation as opposed to an entities-based approach—there remains a need to enable room for experimentation, especially with respect to start-ups employing data-intensive models. While regulators in Hong Kong may find it challenging to accommodate FinTech in order to preserve Hong Kong's competitiveness, this doesn't mean they shouldn't try.

Long-term Reforms (beyond 2 years)

While much of what will be needed in the relative long-term will be determined by events over the coming years, one long-term policy concern is known. Specifically, regulators in Hong Kong will be challenged in fostering an environment conducive to beneficial competition, enabling new entrant(s) in a market, while preventing a harmful fragmentation of the CIS market and uneven playing field that could ultimately foreclose competition. Consequently, regulators in Hong Kong should be ever vigilant and take measures necessary to defend a vigorous, competitive and innovative credit information sharing market. The stakes are simply too high. Finally, there is the intriguing opportunity to encourage the expansion of the incumbent Hong Kong credit bureau's service area to the mainland and with it beneficial competition to the entire Greater Bay Area.

About PERC

Founded in New York City in 2002, PERC is the only non-profit public policy research and development organization exclusively dedicated to the relationship between financial inclusion & access to/use of information and information solutions. Our mission is to stamp out Credit Invisibility worldwide, and drive financial inclusion, through the responsible use of information and information solutions. PERC has undertaken projects in more than 25 countries on 6 continents, including our operations in Canada, which house the Asia-Pacific Credit Coalition. PERC has been retained as consultants to the US Department of Treasury, the US Department of Housing and Urban Development, the World Bank, the International Finance Corporation (IFC), the Inter-American Development Bank (IDB), and the Organization for Economic Cooperation and Development (OECD). PERC CEO & founder Dr. Turner was appointed and served on the inaugural Data Privacy and Integrity Advisory Committee of the US Department of Homeland Security (DHS), and has testified before Congress and in federal courts on numerous occasions. Dr. Turner was also a campaign advisor to Barack Obama. PERC has co-published reports on credit reporting with the OECD, the IFC, and the Brookings Institute among others. To date, our research and outreach has helped change national policy in dozens of countries, and has resulted in helping more than 1 billion people build or rebuild a positive credit history. Launched in 2018, PERC Canada is a wholly owned subsidiary of PERC. PERC Canada's focus is on eradicating credit invisibility within Canada through the use of non-financial payment data, so-called alternative data. PERC Canada undertakes original quantitative economic and social impact research, policymaker education, and external communications in the promotion of their mission. In addition, the Asia-Pacific Credit Coalition is housed within PERC Canada, and is administered by PERC Canada. To learn more about PERC, see www.perc.net and PERC Canada at www.perccanada.ca

About the Asia-Pacific Credit Coalition

Founded in 2007, the APCC have been promoting principles for consumer and commercial credit information sharing among the 21 members of the Asia-Pacific Economic Cooperation (APEC). The APCC have been designated as "Sherpas" for the APEC Business Advisory Council (ABAC), and have worked with ABAC on credit reporting issues since 2007. More recently, the members of the APCC have provided guidance to ABAC for the Asia Pacific Financial Forum (APFF) and the Financial Infrastructure Development Initiative (FIND) concerning credit information sharing policy. To date, working with ABAC & APEC, the APCC have served as a resource on credit information sharing policy to more than half of all APEC member economies (Australia, Canada, Chile, China, Indonesia, Mexico, New Zealand, the Philippines, Singapore, Thailand, the United States, Vietnam). For more about the APCC, visit www.apeccredit.org

PERC
6409 Fayetteville Rd, Suite 120-240
Durham, NC 27713 USA
www.perc.net

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