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The Case for a Public Credit Registry in India: Additional Evidence for Consideration

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Abstract

This paper examines a range of policy and market issues associated with the proposed introduction of a public credit registry (PCR) in India. The justifications offered by official sources for developing and launching a PCR are examined against findings from theoretical and empirical economic literature. The paper supports the conclusion that the Indian financial services sector (including borrowers, lenders, and regulators), and by extension the entire economy, can benefit from increased information sharing and a properly structured PCR if deemed needed. It further recommends that an Indian or any PCR only intervene in markets given the existence of a market failure. Actions taken in the absence of a market failure could distort nascent credit information sharing markets upstream, and performing lending markets downstream with harmful consequences to all stakeholders in the financial services sector, and the economy as a whole. A PCR competing with private credit bureaus (PCBs) could severely damage the private information sharing market. It also recommends that the Reserve Bank of India (RBI) consider outsourcing the potential PCR to a third-party with experience administering large, dynamic, sensitive databases. In so doing, the government can maximize structural flexibility to enable optimal oversight and supervision using newer data, and ensure the structural flexibility necessary to accomplish this. The RBI could use its need for data for oversight purposes to strengthen the information sharing market by obtaining data from PCBs. It can also do so, aid the economy, and promote leading edge sectors by expanding PCB data permissible uses (for example, FinTech, employment screening, and tenant screening). And finally, the Indian government can promote the collection of alternative data, such as utility and telecom payment data, by PCBs, which will strengthen the information sharing market, aid lenders with risk assessment (particularly for the credit invisible), and ultimately improve and expand financial inclusion.

Executive Summary and Key Findings

- **Regulators Need More Data:** The Reserve Bank of India is correct in prioritizing access to more data and more unified databases. Pulling together disparate data assets within the framework of a central database will enable for superior micro- and macro-prudential regulation, improved supervisory functions, more rigorous and comprehensive statistical analysis, and an increased ability to anticipate systemic financial risk and calibrate a commensurate policy response. If needed, a well-structured PCR could be a useful component of this effort.

- **Indian PCR Comes with Risk:** While the regulatory and oversight functions of the proposed PCR are uncontroversial, how a PCR interacts with the private sector—including selling credit reports, credit scores, and other value added services designed to increase financial inclusion, improve the ability of lenders to assess risk, and improve the ability of lenders to price credit—could inadvertently harm the financial services sector, reduce overall lending within the Indian economy, and drive up the price of credit for many. The PCR in Bulgaria lowered the floor (minimum value of loan amount) for reporting loans to the PCR so much, that lenders stopped purchasing credit reports from private credit bureaus—denying them their primary source of revenue. Similar outcomes were evidenced in Ecuador, Morocco, and in countries with dominant PCRs. For these reasons, PERC urges the RBI to refrain from directly competing with established private sector actors unless there is incontrovertible evidence of a market failure.

- **If Created, Roles of PCR Should be Clearly Defined:** As we have witnessed in other countries, a PCR with a broad mandate can and does take actions that distorts different segments of national credit markets. To avoid economically and socially suboptimal outcomes, the RBI should develop a regulatory framework circumscribing the ability of the PCR to act in any manner that would distort existing consumer and commercial credit reporting, credit risk analytics, and credit ratings markets. At a minimum, this would include a strict prohibition on the sale of credit reports and value added services and a prohibition on the PCR administrator being a licensed private credit bureau.

- **Evidence Supports PCR as Complement to PCBs:** In theory, a government agency can fulfill functions and provide services as well as a private sector company. Evidence from credit information sharing and credit risk analytics suggests this is far harder to achieve in practice. Regarding impact on credit markets and lending to the private sector, those countries with either just private credit bureaus or a combination of private credit bureaus and public credit registries outperform those with just public credit registries along every meaningful metric. Indeed, while private credit bureaus are strongly statistically correlated with lending to the private sector, evidence concerning PCRs is mixed and weakly correlated at best. In short, there is no evidence from anywhere around the world to support the notion that the needs of consumer and

commercial lenders are better met by a PCR than by private credit bureaus, and abundant evidence of the reverse.

- **PCR Better Administered by a Private Company:** The government of Indonesia spent untold billions of dollars standing up a comprehensive PCR but failed to meet the needs of private sector lenders despite a large budget and a sufficient talent pool. Ultimately, private credit bureaus were licensed and the PCR focuses on supervision and oversight. The PCR in China, despite being possibly the worlds largest and being staffed by talented technicians and business executives, has not produced credit scores and value added services typical of private credit bureaus, here the private sector has taken the lead. In addition, with a different incentive structure, government agencies attempting to be full-service PCRs move too slowly and lack the innovator's zeal.

- **Indian Private Information Sharing Advancing Rapidly:** Indian private credit bureaus are at a middle-to-advanced stage of development. They will continue to advance and this can be aided by policy reform. In the 2018 Doing Business Report from the World Bank, India (Mumbai) now ranks 29 out of 190 countries in terms of the ease of "Getting Credit." This represents a 15 place jump since last year. In terms of "Depth of Credit Information," India ranks above both the South Asia Average and the OECD High Income average. While the coverage of the population in the private credit bureaus is listed as under the OECD High Income average, it is three times the South Asia average.

- **Government Data Needs and Policy Changes Can Bolster Private Information Sharing, Credit Inclusion, and the Indian Economy:** A PCR can request PCB data, thus supporting Indian information sharing *and* efficiently gathering data for regulatory, monitoring, and oversight purposes. The government can advocate for the collection of additional, alternative types of data, such as utility and telecom payment data, by PCBs. This would improve financial inclusion by enabling better risk assessment among those with little formal credit history (the credit invisible). Important government data sets useful for consumer and SMME lending can also be reported to PCBs. Expanding PCB data permissible uses, such as for FinTech (which is currently taking off in India), employment screening, and tenant screening, can also aid the economy and leading edge sectors, while leveraging additional value out of already collected data.

1 Introduction

The Need for Greater Data Access and Use by Regulators in India

Since the most recent global financial crisis in 2008, regulators have taken a more expansive view on the appropriate approach to ensuring the safety and soundness of a nation's financial services sector. Whereas prior to the crisis, regulators were primarily concerned with micro-prudential regulations (assessing the risk of individual banks and then aggregating upward to evaluate potential systemic risk levels), since the 2008 crisis, regulators have been supplementing this approach with an additional focus on macro-prudential regulation, assessing systematic risk as a whole, such as risk which may arise from the interconnectedness of institutions and therefore exposure to cross-contamination.

The Basel Committee on Banking Supervision (BCBS) of the Bank of International Settlements (BIS) in Geneva worked assiduously to amend the Basel 2 agreement to account for newer forms of financial instruments that contributed significantly to the 2008 financial crisis and were unaddressed by previous agreements. This includes a focus on asset-backed securities (ABS) and collateralized debt obligations (CDOs) among others. Given the need for both micro- and macro-prudential regulation domestically, and for enhanced communications about transborder interconnectedness, the data needs of regulators have increased commensurately.

In a recent presentation, Dr. Viral V. Acharya, Deputy Governor of the Reserve Bank of India (RBI), put forward a cogent and passionate call for the immediate development of a public credit registry (PCR) in India to provide the RBI with comprehensive and robust data in order to oversee, supervise, and positively impact the performance of the Indian financial services sector.[1] Deputy Governor Acharya lists a number of functions for an Indian PCR, including helping with:

- Supervision, and early intervention by regulators;
- Understanding if transmission of monetary policy is working, and if not where are the bottlenecks;
- How to restructure distressed bank credits effectively;
- Risk-based, dynamic, and counter-cyclical provisioning at banks; and
- Credit assessment and pricing by banks.[2]

[1] Acharya, Viral V. "A case for public credit registry in India," Bank of International Settlements. A theme talk by Dr. Viral V Acharya, Deputy Governor of the Reserve Bank of India, at the 11th Statistics Day Conference, Reserve Bank of India, Mumbai, 4 July, 2017. Downloaded at https://www.bis.org/review/r170726h.htm

[2] *Op. Cit.* Pg. 4.

All these are worthy policy objectives consistent with traditional roles played by PCRs around the world. As such, efforts to implement a public credit registry or a more comprehensive database than currently exists in India are to be commended. However, to maximize the value of the proposed databases or PCR to stakeholders, the structure and functions of those should fully account for the existing financial services ecosystem. Specifically, care must be taken that the implementation of a PCR, if deemed needed, does not distort well functioning markets, but instead fills data gaps and corrects demonstrated market failures.

The recent Punjab National Bank (PNB) fraud scandal has highlighted the importance of oversight and the need for well functioning financial markets with appropriate standards. That said, this case does not appear to be one that exemplifies the proposed benefits from greater data gathering and sharing in the envisioned PCR, (an initial response is requiring the integration of core banking solutions with SWIFT).[3] Even so, there are legitimate reasons, such as the sharp increase in stressed assets for both public and private sector banks, for increased data access by the RBI, whether in the form of a PCR or otherwise. This paper assumes that some form of PCR or government database along with new information sharing policy will emerge under the rubric of the RBI or another appropriate government agency.

The Relationship Between a Public Credit Registry and Private Credit Bureaus

Much has been written about this topic, but it bears reviewing some of the key findings from existing literature given the stated objectives of the proposed PCR in India as described by Deputy Governor Acharya. Here only the highlights will be presented, but more detail is provided in **Section 2**.

In theory, a public credit registry can fulfill all the same functions of a private credit bureau.[4] Indeed, in some countries, belief in this theory has led to the creation of PCRs designed to accomplish just this. For example, the People's Bank of China (PBOC) Credit Reference Center (CRC) and Bank Negara in Malaysia are but two examples of countries with large PCRs that service the information needs of national regulators and the market needs of lending institutions and creditors or other permissible purpose entities.

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[3] Bandyopadhyay, Tamal. "PNB Fraud: Where does the buck stop?" *liveMint.com*. Feb 26, 2018. Downloaded at: http://www.livemint.com/Opinion/LxA1p2BNVbtfelrWJA8RGK/PNB-fraud-Where-does-the-buck-stop.html or, "RBI instructs banks to link their core systems with SWIFT after PNB fraud." Reuters. *The Economic Times*. February 24, 2018. Downloaded at: https://economictimes.indiatimes.com/industry/banking/finance/banking/rbi-instructs-banks-to-link-their-core-systems-with-swift-after-pnb-fraud/articleshow/63047828.cms

[4] Pagano, Marco and Tullio Jappelli. "Public Credit Information: A European Perspective." Pgs. 81-11. Chapter in Miller, Margaret. *Credit Reporting Systems and the International Economy*. Cambridge. MIT Press. 2003. See also: Pagano, Marco and Tullio Jappelli. "Information Sharing In Credit Markets." *The Journal of Finance*, Vol. XLVIII, No. 5. December, 1993. Downloaded at http://socsci2.ucsd.edu/~aronatas/project/academic/pagano_jappelli91.pdf

In practice, however, evidence from around the world strongly suggests that PCRs function best as complements to, and not substitutes for private credit bureaus. Earlier work on this matter done by World Bank economist Dr. Margaret Miller is compelling and in this case instructive [5] Miller's conclusions have been substantiated time and again over the 15 years since the publication of her seminal volume on credit information sharing policy. Examples of harmonious PCRs and private credit bureaus abound, as do examples of market distortions caused by over-ambitious PCRs.

Section 3 provides examples from around the world that may be of interest to policymakers in India as they consider the parameters of their own PCR. Further evidence of the complementary nature of PCRs and private credit bureaus can be found in the widespread practice of PCRs using data from private credit bureaus for micro- and now macro-prudential regulations. It will be argued that the optimal design for a PCR is one that enables maximum flexibility given the dynamic nature of the credit information sharing market. The profound advances in information and communications technologies over the past generation cannot be overstated. This has led to more and different data being used in credit decisioning by lenders, identity verification, and other uses across the broader financial services sector. Here we offer evidence in support of the position that a new PCR utilizing these diverse data assets may best be managed by a third-party vendor, in order to ensure adaptability and flexibility in this dynamic data environment while safeguarding the data asset.

In **Section 4**, we explore the market context and justifications offered for the installation of a public credit registry in India. Here, we see evidence of progress in lending to the private sector—individual borrowers as well as commercial borrowers including micro- and small-enterprises. While there remains abundant room for growth and improvement, it is hard to discount the positive impact from the recent growth and development of consumer and commercial credit information sharing firms in India. In order to nurture and protect the nascent credit information sharing and credit risk analytics markets in India, we offer a number of considerations regarding an Indian PCR's behavior, and suggest an approach to mitigate against the very real risk of market distortion.

Finally, **Section 5** concludes by offering applications from the review of relevant economic literature, and the experiences of other countries to the Indian market. Here, PERC offers several policy prescriptions we hope may be of assistance to Indian policymakers and those in other countries as they consider intervening in credit markets to either introduce a public credit registry or reform an existing one.

[5] Miller, Margaret. *Credit Reporting Systems and the International Economy*. Cambridge. MIT Press. 2003. Downloaded at https://mitpress.mit.edu/books/credit-reporting-systems-and-international-economy

2 Public Credit Registries (PCRs) & Private Credit Bureaus (PCBs)

A credit repository gathering and enabling credit information sharing can be either be public or private. Private Credit Bureaus (PCBs) typically operate under a for-profit business model and exist in two main formats. In some cases, banks or other creditors own shares of the bureau, while in others, financial institutions or creditors own no shares of the bureau (a neutral, independent, or 3rd party bureau). Public Credit Registries (PCRs) operate on a not-for-profit basis, can be funded by membership fees or government funds to cover the costs of operation and are administered by the government or a third-party vendor.[6] As will be discussed immediately below, and in Section 3, differences in ownership appear to have different consequences.

PCRs and PCBs operate under different protocol, which can play into the performance of the financial sector of a given country.[7] Public credit registries are largely supervisory in role and mostly focus on data from supervised institutions, such as banks and savings and loan cooperatives. This role allows public credit registries to monitor the financial sector, and ensure safety and soundness by, for example, determining if reserve levels are adequate. They can also provide more general statistical data on lending and the financial markets for regulators and policymakers.

Private credit bureaus, on the other hand, are more likely to collect data on account owners (individuals), as well as balance sheet information, and income and tax information.[8] Additionally, privately owned bureaus are usually the reporting bureau of choice for smaller financial institutions, where this relationship has been shown to have a net positive impact.[9] The World Bank survey of PCBs and PCRs found that non-commercial and non-development financial institutions were more likely to provide information to privately owned bureaus. Examples of these institutions include credit unions, credit card issuers, firms providing government loans, and retail card issuers.[10] Private bureaus are usually considerably more thoroughly staffed and operate with a greater amount of resources. In an effort to grow in size

[6] International Finance Corporation. 2006. *Credit bureau knowledge guide*. Washington, DC: World Bank Group. Pg. 9.
[7] Miller, M. 2004. The Role of Credit Registries and Collateral Security in Managing Credit Risk Presentation to the *Annual Seminar for Senior Bank Supervisors From Emerging Economies*, Washington, DC.
[8] Turner, M. et al. 2008. *Information sharing and SMME financing in South Africa: A survey of the landscape*. Chapel Hill, NC: Political and Economic Research Council.
[9] Turner, Michael A. and Patrick Walker. *The Impact of Credit Reporting and Credit Scoring on the Microfinance Sector.* A joint-study by The International Finance Corporation (IFC) and PERC. Durham, NC. 2018. Downloaded from http://www.perc.net/wp-content/uploads/2018/01/MFI-Report.pdf
[10] Turner, M. et al. 2008 *Information sharing and SMME financing in South Africa: A survey of the landscape.* Chapel Hill, NC: Political and Economic Research Council

and function, private bureaus often have greater technological resources as well, and are thus better equipped to protect consumers from identity theft and fraud.[11]

Public credit registries provide less efficient business models for improving lending because their business goals differ drastically from privately owned enterprises. A public credit registry's primary concern is typically supervision, while private credit bureaus exist to ease lending and provide credit checks for lenders, with the ultimate goal of achieving more accurate risk assessment. That is, they serve to make lending more efficient and profitable. Simultaneous operation of PCBs and a PCR may (and frequently do) exist in a market, each serving it own role.

Recent studies have shown differences in lending impact when a private credit bureau versus a public credit bureau business model is used. In a study of 129 countries, Djankov, McLiesh and Shleifer found that private bureaus increased annual lending to the private sector by 21 percent of GDP, whereas public bureaus only increased lending by 7 percent. When only lower income economies were used, the same trend surfaced, with private bureaus leading to an increase of 14.5 percent and public credit registries only increasing lending by 10.3 percent[12]. A 2007 study by PERC found that 100 percent coverage of credit-eligible adults in a full-file private credit bureau is associated with increased private sector lending by upwards of 60 percent of the given country's GDP.[13] Importantly, a statistically significant relationship between the coverage of *public* credit registries and private sector lending was *not* found.

These findings from those earlier studies were re-examined in *The Impacts of Information Sharing on Competition in Lending Markets,* a 2014 PERC study.[14] This study utilized data from 2007 to 2011 and explored a few hypotheses and topics.

The first regression from that report (reproduced here in Table 1) found that the presence of a private credit bureau was associated with an increase in private credit as a share of GDP of about a 39 percentage points, not controlling for any other factors. This relationship was found to be highly statistically significant. On the other hand, the presence of a public credit registry, surprisingly, is associated with reduced private lending, though this relationship is only marginally statistically significant. However, it is worth noting that in the 2007 PERC study, while the regression coefficient in question was also found to be negative, it was not even marginally statistically significant.

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[11] It is worth noting that the relative advantages of private credit bureaus can be "leased" or transferred to a PCR that is administered by a private credit bureau or data company. This best of both worlds outcome—government authority and budget with private sector expertise and market orientation—can be a potent and successful combination if correctly structured. It can also yield disastrous results if not.

[12] Djankov, S. et al. 2005. Private credit in 129 countries. *NBER Working Paper No. 11078.* www.nber.org/papers/w11078.

[13] Turner, M. and R. Varghese. 2007. *Economic impacts of payment reporting participation in Latin America*. Chapel Hill, NC: Political and Economic Research Council. Downloaded at http://www.perc.net/wp-content/uploads/2014/10/FF_Impacts.pdf

[14] *Op. Cit*.

Table 1: Linear regression: Dependent Variable: average (Private credit to GDP) from 2007-2011

Variables:	I	II	III	IV	V
Intercept	42.58 *** (5.77)	35.51 *** (4.19)	40.42 *** (5.51)	4.55 * (9.25)	22.46 * (11.01)
Private Credit Bureau Present in 2007	39.32 *** (7.03)		33.75 *** (6.80)	25.04 ** (6.65)	23.68 ** (6.58)
Public Registry Present in 2007	-15.55 * (7.04)		-14.58 (6.68)	-3.19 (6.73)	-7.53 (6.76)
Private Bureau coverage in 2007		0.76 *** (0.11)		6.67 *** (1.43)	
Public Registry Coverage in 2007		0.63 * (0.34)			
GDP in 2007			1.24E-11 *** (2.65E-12)	1.10E-11 *** (2.50E-12)	1.04E-11*** (2.45E-12)
Legal Rights in 2007					5.984 *** (1.43)
Inflation in 2007 (consumer prices)					-2.11 ** (0.67)
R-Square	0.19	0.26	0.29	0.38	0.439
Adjusted R-Square	0.18	0.25	0.28	0.36	0.419
F-State (P-Value)	19.17 (<.0001)	27.48 (<.0001)	21.88 (<.0001)	24.05 (<.0001)	22.41 (<.0001)

Standard errors in parentheses unless otherwise noted, *** represents a 99% confidence level, ** represents a 95% confidence level, * represents a 90% confidence level.

The second regression examines not the presence of PCBs and PCRs but their coverage, which can range from 0 to 100. Here, 100 percent coverage by a private credit bureau is associated with a 76-percentage point increase in private credit as a share of GDP. This result is very statistically significant. While 100 percent coverage by a public credit registry is associated with a 63-percentage point increase in private credit as a share of GDP, this result is only marginally statistically significant.

In regressions four and five, other factors were controlled for, including inflation, size of the economy (GDP), and legal rights. These regression were structured like those carried out by Djankov, McLiesh, and Shleifer (2005). The coefficient estimating the impact of the presence of private credit bureaus drops to 25 in regression 4 and 24 in regression 5. This is close to the estimate of 21 percentage

points found by Djankov, McLiesh, and Shleifer. The impact for the presence for a public credit registry was not found to be significant in either of these regressions, as was the case with Djankov, McLiesh, and Shleifer.

Further evidence of the mixed performance of public credit registries is found in panel regressions from the 2014 PERC study, which is reproduced in Table 2. This analysis accounts for the number of years since a reform to full-file credit sharing occurred. Interestingly, the analysis found the estimated impact of the presence of a Public Credit Registry is moderately statistically significant, though less so than the coefficient on the presence of a Private Credit Bureau. In addition, the size of the impact for Public Credit Registry represents only 4.8 percentage points of private sector lending. And while the coefficient on Private Credit Bureau was smaller in this regression at 8.9, much of the impact was no doubt captured by the indicator variables for the switch to full-file credit sharing.

Table 2: Panel Regression: Private Credit to GDP

Variables	I	II
One year after change	8.61 *** (2.96)	2.78 (2.34)
Two Years after change	10.12 *** (3.13)	5.38 * (2.42)
Three Years after change	12.37 *** (3.35)	5.93 ** (2.53)
Four Years after change	13.21 *** (4.22)	7.20 ** (3.15)
Five or more Years after change	27.40 *** (3.89)	16.09*** (3.57)
Private Credit Bureau Present		8.85 *** (2.00)
Public registry Present		4.82 ** (2.33)
R-Squared	0.025	0.06
Adjusted R-squared	0.023	0.05
F-stat p-value	1.43 (0.21)	8.56 (3.29e-10)

Standard errors in parentheses unless otherwise noted, *** represents a 99% confidence level, ** represents a 95% confidence level, * represents a 90% confidence level.

The three studies discussed examined different time periods and constructed their datasets independently. Consistent across the studies is that the presence and coverage of private credit bureaus is associated with meaningfully increased private sector lending. On the other hand, across these studies, the association between

the presence and coverage of public credit registries and private sector lending is weaker and inconsistent.

The usual caveats with these results are necessary. Such cross-national analysis can suffer from problems associated with model specification, data quality, and variable definitions. And there is the typical issue of causation versus correlation. Nonetheless, there appears a clear pattern that Private Credit Bureaus, particularly more mature ones that share more data, are associated with meaningfully more private sector lending. On the other hand, the relationship between private sector lending and public credit registries appears less clear and much more marginal.

Why the Lending Impact Differences Between Private Credit Bureaus and Public Credit Registries?

In theory, an entity owned by the government should be able to collect and distribute data just as a private sector one can. In fact, since the government can compel credit data sharing, government bureaus (public credit registries) should have an advantage. However, there are a number of potential explanations as to why it is that the leading data sharing platforms with the greatest impact on lending are private credit bureaus.

Advantages to being quick and nimble

While credit reporting may *seem* to be an economic activity that is not dynamic, this is not the case. The types of data captured and disseminated have changed over time. How data is captured, stored, and transmitted also changes. How data is cleaned, analyzed, and turned into solutions changes as well. While governments do have the power to compel reporting, it is usually because of such powers that governments are constrained by bureaucracy that ensures deliberation, transparency, public input, and cautious/risk-averse decisions. For governments and regulators, overall, these constraints are purposeful and are features, not bugs. Of course, they can also be frustrating at times for those working in or with governments. For private entities, while there is also institutional bureaucracy, it is usually much less cumbersome when one private market actor is voluntarily working with another private actor (such as exchanging data). In addition, there is also the check of competition if the internal private bureaucracies get out of hand.

In the US, while there is no public credit registry, there are a number of areas in which the federal government directly interacts with credit reporting and credit scores. For instance, while private lenders are utilizing newer credit scores and so-called alternative data, government-sponsored enterprises (GSEs) that purchase mortgages—the "GSEs" referred to here are the Federal Home Loan Mortgage Corp. (Freddie Mac) and the Federal National Mortgage Association (Fannie Mae)—are only now requesting input into how they should update a crucial credit score that they require of private sector originators. One of these currently required credit scores

was built in the mid 1990s with data from the 1980s and 1990s. This government standard has acted to distort the credit risk analytics market in the US.

Under the guidance of the Federal Housing Finance Agency (FHFA), the two large GSEs are only considering two generic credit scores and are not looking to incorporate more cutting edge credit score that utilize newer data. While PERC is filing comments in response to a 2018 FHFA request for input (RFI), their involvement in guiding underwriting standards set by the GSEs represents further distortion of the market for credit risk analytics.

Government regulations have also impacted the collection/acquisition market in the US. Over the past four decades there have been numerous federal and state regulations that were promulgated at a time when credit reporting of non-financial payment data (this includes energy utility, telecoms, media, and rental payments among others) was primarily negative-only. For this reason, there are much higher barriers to reporting positive, on-time non-financial payment histories than for late or delinquent payments. Partially as a result of these prohibitions or rules uncertainties, many late telecom, rent, and utility payments wind up in consumer credit reports (and then credit scores) but few on-time payments do. Some utility and telecom customers, if given the opportunity, would need to specifically authorize their on-time payments to be reported. The same with rental data from government subsidized rental units. But no such permission is needed to report late payments/collections.

While this seems perverse, and something that should easily be changed, the nature of government means that the process is very slow, rules and policies put in place are difficult to change, and any groups objecting to reforms are given more weight as changing the status quo is very difficult. And when the US federal government, state and local governments, and other national governments do have valuable data that can be furnished, too often it either does not get furnished or if it does it many times does so in a cumbersome way (there can be hurdles to governments supplying individual-level data).

Given the breathtaking speed with which data is growing and IT is developing, changes in information sharing and changes in the needs of lenders with regard to information sharing will likely accelerate. Traditional lenders, data aggregators, value added service providers, as well as newer entrants, such as FinTech companies, telecoms, and online platforms will need to “discover” and experiment with ways to improve risk assessment with new technology, solutions, and data. While governments typically do not take the lead in such efforts, it is crucial for regulators to monitor these developments and make investments as necessary to be able to properly carry out the needed oversight and supervision roles. Some markets, such as the UK, have recognized the importance of this “leading edge” experimentation and have been careful not to overregulate this space. This is sometimes refereed to as a “sandbox” approach. Then as technologies, business models, and new solutions begin to emerge and grow beyond the experimental

stage, tailored regulations are developed. So, while the government agencies are not in the lead, they do need to monitor a fast evolving market. And once approaches begin to solidify from experiments to widely adopted practices, regulations will need to be updated or added. This requires increased regulator understanding and when needed access and use of data and solutions, including new, cutting edge data and solutions.

This need for regulators to follow and keep up with FinTech has spawned the need for regulators to answer FinTech with RegTech. Within the credit information sharing space, it could be argued that a traditional public credit registry is ill-suited for this task. However, one that outsources many of the technical functions to a more nimble, innovative third party—such as a private credit bureau or financial information services firm—may be able to rent the capacity and benefit from the third-party database administrator's market experiences. It is for this reason, we highly encourage the RBI to consider structuring a proposed Indian PCR in such a manner as to capitalize on this potential by working with a private sector specialized firm to maintain the PCR's database and to experiment with the data to develop additional tools for regulatory oversight and supervision. And, like the US and other markets, have regulators collect needed data from private sources (private credit bureaus and other data aggregators) when available.

In summary, the dynamic pace associated with the growth and evolution of credit information sharing and risk analytics in consumer and commercial lending has been greatly aided by the presence of private credit bureaus. Public credit registries, which in theory can serve every function performed by a private credit bureau and can compel firms to report, should have had a comparable impact. Evidence suggests that public credit registries have operated with relatively mixed results and have substantially under-performed relative to private credit bureaus. In all likelihood, this is explained by some combination of bureaucratic processes and a lack of exposure to market forces. In general, such government agency interaction in credit information sharing and risk analytics in the US and other markets has occasionally resulted in market distortions with suboptimal outcomes. Unlike private credit bureaus, public credit registries seem particularly ill-suited to adapt to a rapidly evolving data and technology ecosystem and would be far less likely to provide innovative solutions to lenders and other stakeholders, including identity verification, anti-money laundering (AML), and fraud detection and prevention solutions among others. To overcome these limitations, a PCR or public data aggregator could outsource the administration of their database to a specialized private sector firm.

Private Credit Bureaus are Focused on Easing and Improving Lending

As private, often for-profit, entities, private credit bureaus focus on profitable ways to generate revenue. Since their major customers in most markets are lenders, this means offering services to lenders. As with many industries, private credit bureaus utilize sales departments and marketing departments since data from credit bureau databases will not sell itself. Despite the bountiful evidence of the value of data/information in risk assessment and underwriting, lenders can be very conservative and reluctant to adopt new approaches. Lenders, when approached with new solutions are typically not in a crisis situation that requires radical, immediate change. They, typically, already have detailed, trusted, procedures in place that all are confortable with. They tend to be skeptical of the benefits from changing procedures, fearful the benefits may not materialize as promised while introducing risk. This in not unique to lenders, of course, the same could be said of the utilities, telecoms, and many other industries.

Among the benefits of private credit bureaus is that they seek out ways to sell their services to lenders and others by demonstrating the value of their services. In doing so they incorporate feedback, learn what needs lenders and others have, learn what the pain points are, and devise tailored solutions. Often times the details of how data is delivered to data users, how it is integrated into their systems is crucial. Private credit bureaus must work with their customers (data users) to not only collect data that they could use, but also to demonstrate that it is useful, and deliver it to them in an effective manner. On top of this are the multitude of value-added-services that private credit bureaus (and pure-play value added service providers such as FICO and VantageScore in the US) build on top on this basic relationship. The PCBs use these relationships to understand what needs their customers have and aggressively (particularly where there is competition) look to develop solutions. In this way, solutions get developed faster and can be transmitted to the whole industry more rapidly than if each lender built their own solutions in-house.

Such vigorous and direct interactions with data end-users are less typical with public credit registries. On the other hand, requirements by the governments, regulators or pubic credit registries can be (and often are) seen as an issue of compliance and not as a business opportunity or a way to improve business processes. This is partially because parties are being told, you must do x, y, and z as opposed to showing the parties, you should do x, y, and z because you will benefit. In countries or segments where credit reporting and/or use is mandated, lenders and other furnisher/users may not always buy in to the value proposition of credit reporting and treat mandates as compliance issues and boxes to check. They don’t explore how the data can be used to maximally improve underwriting.

So, the limitation with *mandates* are that they impact the macro- dynamics (data is furnished, data is stored, data is accessed) but are less effective on the important micro-dynamics of firms which control details of how the data is furnished and how data is used. Mandates, while powerful, can be a blunt instrument. Ideally then, in

markets where there are mandates, there should be a vigorous private sector making the case and developing solutions to encourage optimal data use and reporting.

Private credit bureaus often tend to evolve over time, first starting with the basic data collection and the creation of credit reports and basic credit scores, and then building off of their relationships with their data furnishers and customers produce ever more solutions. An example of such evolution follows.

Table 3: Stages of Development and Examples of Services

Stage	Examples of Services		Examples of Markets
Stage 1	Database Provision of Basic Data	BUILD STAGE	
Stage 2	Credit Reports Alerts and Some Add-On services	INITIAL CORE SERVICES	Kenya Bolivia
Stage 3	Initial Score and Decision Tools Initial Custom Analytics	INITIAL DECISION AND ANALYTICS TOOLS	Argentina
Stage 4	Fraud & Identity Management Marketing Services & Collections Management Commercial Credit Report	CONSUMER LIFE CYCLE MANAGEMENT TOOLS	Mexico
Stage 5	Consumer Reports Consumer Scores Credit Monitoring Consumer Education Mature scoring, Decision Tools, and Custom Analytics	MULTIPLE LINES OF BUSINESS	Brazil India
Stage 6	Auto, Utility, Telco Solutions Rental Screening, Employment Screening Healthcare, Small Business Insurance, Government Solutions		South Africa Dominican Republic Canada
Stage 7	Big Data Solutions Peer to peer lending, Equity Financing Equity valuation, Secondary Market, and Macroeconomic Factors Based Models	MOBILE & ONLINE FINANCE SOLUTIONS	U.S.A.

Source: Adapted from the presentation "Going Beyond Financial Services" delivered at IFC Credit Bureau Conference in Malaysia, May 2010.

Public credit registries, or even a consortium of lenders, it could be argued have an advantage in the first, and perhaps even second stage. But as credit information sharing develops and matures, private credit bureaus excel. The cutting edge of information sharing involves experimenting with new types of data, new ways to access data, new ways to analyze data, new service for lenders and other users, new ways to interact and serve consumers, and so on. Private credit bureaus either innovate from within or, via the pharma model, by acquiring smaller innovative firms. Innovation is often not part of a government agency's DNA, nor are they in the business or mergers and acquisitions.

In very developed credit sharing markets, lenders find limited value in raw data or credit reports. Lenders demand refined solutions and decisioning engines. On the other hand, in markets with early stage and developing credit bureaus, revenues from raw data or credit reports and the business ties that result are much more crucial to credit bureaus.

In more advanced stages of credit bureau development, credit bureaus provide services directly to consumers. These services can include tools to review (and dispute) credit bureau data via smart devices, one-on-one education regarding credit bureau data and credit scores, online services and apps that enable credit score simulations, and ID theft and fraud monitoring services. As is common with such direct-to-consumer lines of business, these can involve a good deal of marketing and customer service. The credit information sharing market in India is currently in this stage of development and quickly growing. It will continue to advance and this can be further aided by policy reform. In the 2018 Doing Business Report from the World Bank, India (Mumbai) now ranks 29 out of 190 countries in terms of the ease of "Getting Credit."[15] This represents a 15 place jump since last year. In terms of "Depth of Credit Information," India ranks above both the South Asia Average and the OECD High Income average. While the coverage of the population in the private credit bureaus is listed as under the OECD High Income average, it is three times the South Asia average. While still evolving, growing, and improving, in many ways this is successful realization of past RBI policy efforts and goals.[16]

During the more advanced stages of development, a major function of private credit bureaus is handling consumer disputes. This function can be quite complex, involving interactions with consumers (data subjects), the credit bureau's own database, and data furnishers over a large number of data elements reported over many years. Again, while there is no reason why a government agency cannot fulfill these diverse functions, because they are not subject to regulatory oversight and

[15] See World Bank. 2018. Doing Business 2018: Reforming to Create Jobs. Washington, DC: World Bank. http://www.doingbusiness.org/~/media/WBG/DoingBusiness/Documents/Annual-Reports/English/DB2018-Full-Report.pdf and see the "Make in India" website: http://www.makeinindia.com/article/-/v/india-jumps-30-places-in-world-bank-s-doing-business-report-2018

[16] See for instance, Reserve Bank of India. (N.H. Siddiqui). "Report of the Working Group to explore the possibilities of setting up a Credit Information Bureau in India." October 30, 1999. Available at https://rbi.org.in/scripts/PublicationReportDetails.aspx?FromDate=11/01/99&SECID=21&SUBSECID=0

the threat of class action lawsuits, they typically do not provide the same caliber of customer service as that offered by private sector actors, especially ones under a statutory framework for responding to consumer disputes. As such, PERC would counsel against a PCR offering products and services direct to consumer, as this would entail developing a consumer dispute resolution capacity. Should they go that route, then partnering with a data firm with existing customer relations capacity and expertise may enable an Indian PCR greater flexibility in this regard. To reiterate, though, we feel the potential risk of distorting the current credit information sharing market (consumer) and reducing private credit bureau investment in India by far and away outweighs any potential benefits from having an Indian PCR offering products in direct competition with private credit bureaus.

Private Credit Bureaus and Data Collection

An issue that private credit bureaus navigate in nearly all markets is how to collect data from lenders and other data furnishers when the potential furnishers value their own internal, private data and do not wish to simply turn it over to competitors. Credit bureaus and data aggregators, of course, would love to access as much data as is possible and permissible.

One way private credit bureaus manage this is by restricting whether data can be used for marketing, and if it can, strictly controlling which data and details are made available for marketing. Lenders and other furnishers also may oppose reporting data or certain data elements entirely, for any purpose. Information that companies privately maintain are becoming increasingly important to the value of those companies. This is especially true for lenders, for which information represents a key input. Because of this, lenders, telecoms companies, online retailers, have incentives to collect more information, improve data quality, and improve the way it is stored to allow quicker, more secure, and more flexible analysis.

On one hand, as companies and industries become more data centric in general, the demand for third-party data should grow. On the other hand, as companies value their data more, they may be reluctant to share some information. For instance, they may be willing to share end of the cycle credit card balances, but not day-to-day spending patterns, such as could be found in bank or credit card statements. Private data/information *is* valuable to companies, and its value to companies will likely only increase. Where the line is drawn between the types of data they are willing to share and unwilling to share will be different for different companies, vary between industries, and no doubt change over time. And those lines will be influenced by what value companies receive (actual or perceived) for sharing their data.

The Changing Data Sharing Landscape

A vibrant information sharing industry typically involves multiple data aggregators and many databases. For instance, multiple private credit bureaus can offer competing general consumer credit reports and services. These reports and data can then be "merged" by one of the bureaus or another entity to produce a new product. Some data aggregators could focus on government and court data, such as tax liens, bankruptcies, civil judgments, voting rolls, licenses, property records, and the like. Some of these aggregators could then sell some of this data to the general consumer credit bureaus. Some "specialty" credit bureaus might collect public record and other data for credit origination purposes in one database and public record and other data in another for marketing purposes, recognizing the different data furnishers' approvals, data quality needs, requirements, and regulations for each purpose. In some cases, data may be collected by a non-profit consortium, such as the Small Business Financial Exchange (SBFE), that then makes data available to vendors (credit reporting agencies) to report data on small business lending, combined with other data, with value added service made available.

There are examples of furnisher exchanges/consortiums, such as the National Consumer Telecommunications and Utility Exchange or "NCTUE" in the US, that collect payment and other account data from non-financial accounts; in this case energy utility and telecoms services. This data can then be combined with general credit data or other data to produce value added services, potentially producing revenue to compensate the data providers.

Another set of data and solutions lenders are experimenting with is derived from psychometric analysis of borrowers. This typically occurs during the application process but could also occur for already booked customers for account maintenance purposes (including updating terms and credit limits) or to identify cross sell opportunities. This recognizes that data captured directly by the consumer can be valuable in risk assessment and customer segmentation. This is not completely revolutionary as direct-from-applicant data, such as on household income, employer, purpose of loan, and the like has traditionally been captured, with some of this data also being verified. However, psychometric analysis extends this by adding many more questions, some on consumer attitudes, and then scoring the responses (usually to predict loan outcomes). The focus on this data has been on individuals and segments with little other traditional third-party data that can be used for underwriting. That said, experiments have also shown that adding this data to traditional credit data can improve risk assessment.

Consumer permissioned data from financial and non-financial accounts is another source of data. An applicant can give permission to a lender to access their online statement data from banks or even a utility or telecom that may not otherwise report to a credit bureau. In this way, data from banks and other service providers is not furnished to a database but flows, on demand, at the request of the consumer to an

entity to perform risk and capacity analysis (this has only been enabled with the proliferation of internet access, use of online accounts, and general IT advances).

Add to this the fact that lenders are also updating and integrating their own internal databases that all must realize contain valuable information (containing data on deposits and purchasing patterns).

Then there is very valuable data from the Visa, MasterCard, other credit card networks, PayPal, Square, and various payments systems that are proliferating everywhere. There are emerging datasets from the Internet-of-Things (IoT). And there is data from online platforms, such as EBay, Alibaba, Amazon. And there is also data from governments. In short, the types and amounts of data that are becoming potentially available and useful for financial services for consumers and SMMEs is exploding. And these examples do not include ways IT can be used to reduce moral hazard, such as reaching out to customers with text nudges before payments are due (or after the due date). Experiments with all manner of data and lending models are underway around the world.

This underscores the value of a vibrant private sector and also the growing need for RegTech and for regulators to have access to a variety of data from disparate sources.

3 International Lessons Learned about PCRs and PCBs

While there has been substantial mainstream- and trade-media coverage of the proposed creation of a public credit registry in India, there is scant detail available about the particulars.[17] Instead, reference is made to a task force comprised of lenders, IT executives, and staff from the Reserve Bank of India, created to scope out the functions of the proposed new PCR.[18]

Publicly available information about the proposed PCR is limited to two primary sources: (1) a July 4, 2017 speech by RBI Deputy Governor Acharya and (2) a subsequent release by Deputy Governor Acharya about the initial steps being taken to set up the proposed PCR.[19] Most notably, Deputy Governor Acharya has outlined what he considers to be the primary functions of a PCR in India.

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[17] "Public credit registry to speed up digitisation: Vishwanathan," *The Hindu.* November 6, 2017. Downloaded at http://www.thehindu.com/business/public-credit-registry-to-speed-up-digitisation-vishwanathan/article19993312.ece;

[18] Atmadip, Ray. "RBI forms task force on public credit registry." *The Economic Times*. October 23, 2017.
Downloaded at https://economictimes.indiatimes.com/news/economy/finance/rbi-forms-task-force-on-public-credit-registry/articleshow/61188606.cms

[19] Acharya, Viral V. "A case for public credit registry in India," Bank of International Settlements. A theme talk by Dr. Viral V Acharya, Deputy Governor of the Reserve Bank of India, at the 11th Statistics Day Conference, Reserve Bank of India, Mumbai, 4 July, 2017. Downloaded at https://www.bis.org/review/r170726h.htm

"*A PCR, if put in place for India, will help in a) Credit assessment and pricing by banks; b) Risk-based, dynamic and countercyclical provisioning at banks; c) Supervision and early intervention by regulators; d) Understanding if transmission of monetary policy is working, and if not, where are the bottlenecks; and, e) How to restructure stressed bank credits effectively*."[20]

In general, the authors of this report generally agree with this statement from Deputy Governor Acharya. Our single concern, however, involves point "a,"—the PCR's help with "credit assessment and pricing by banks." Specifically, we are concerned that this be accomplished without distorting the growing and evolving nascent markets for consumer and commercial credit information sharing in India. While we are unable to confirm specifics, as the special task force has not published details about their vision for the proposed PCR, we can make inferences from statements drawn from the July 4 speech and subsequent publications and presentations on this topic on behalf of the RBI.

From publicly available sources we can draw the following defensible inferences:

- Creating a public credit registry is a public policy priority for the RBI;
- The proposed PCR will contain vast data assets (financial, non-financial, biometric, government owned) on all types of loans (consumer and commercial) and other transactions;
- The PCR will offer information and information services to consumer and commercial lenders designed to increase financial inclusion and enable lenders an improved ability to differential "good" borrowers from "bad" ones.

For instance, in the July 4 speech on the justifications and need for a public credit registry in India, Deputy Governor Acharya offers the following insight:

"*Furthermore, absent a public credit registry, the 'good' borrowers are disadvantaged in not being able to distinguish themselves from the rest in opaque credit markets; they could potentially be subjected to a rent being extracted from their existing lenders who enjoy an information monopoly over them. The lenders may also end up picking up fresh clients who have a history of delinquency that is unknown to all lenders and this way face greater overall credit risk."*[21]

Deputy Governor Acharya continued:

"…*public credit registers in many countries have gone beyond the credit relationship of borrowing entities with financial institutions. They tap other transactional data of borrowers including payments to utilities like power and telecom for retail customers and trade credit data for businesses. Why might such data help? Lenders in the formal sector often hesitate to extend a line of credit to new customers due to the lack of credit scores. Regularity in making payments to utilities and trade creditors provides an indication of the credit quality of such*

[20] Acharya, Viral V. "A case for public credit registry in India," Pg. 4.
[21] Acharya, Viral V. "A case for public credit registry in India," Pg. 5.

customers. In turn, credit from the formal sector can become accessible to new borrowers, boosting financial inclusion. As a side benefit, the extent of financial inclusion will likely become more precisely measurable for policy makers."[22]

It seems clear that the proposed PCR will be co-existing with the existing private consumer and commercial credit bureaus (PCBs) already operational within India. What is less clear is what will be the relationship between the PCR and various PCBs. Here, a discussion of this topic drawn from international experiences may be instructive for members of the RBI's special task force as they deliberate over the contours and contents of a PCR for India.

Viewed from a high level, and as depicted in the 2x2 matrix below, countries can be grouped into categories relating to presence or absence of a PCR and PCB. As the chart below shows, most countries have one or the other, or both, while far fewer have neither. One could infer from this that PCR's are vital to the performance of a modern and sophisticated financial services sector, and by extension to a nation's entire economy, however, a more careful consideration of the evidence suggest this would be a contestable conclusion.

Table 4: Presence/Absence of PCR and PCB

	PCR	***No PCR***
PCB	Argentina, Brazil, China, Ecuador, Indonesia, Germany, Malaysia, Morocco, Nigeria, Pakistan, Peru, Philippines, Portugal, Spain, Uruguay, Vietnam	Australia, Canada, Cambodia, Colombia, Denmark, Hungary, India, Japan, Israel, Ireland, Italy, Kenya, Mexico, Netherlands, New Zealand, Norway, Poland, Russia, Saudi Arabia, Singapore, South Africa, South Korea, Sri Lanka, Sweden, Switzerland, Taiwan, Tanzania, Thailand, UK, US
No PCB	Afghanistan, Albania, Algeria, Angola, Bangladesh, Belgium, Bulgaria, France, Iraq, Libya, Mongolia, Oman, Qatar, Tunisia, Turkey, Togo, Yemen	Luxembourg, Myanmar, Palau, South Sudan

**Source*: World Bank, Doing Business. 2016.

[22] *Op. Cit.* Pg. 9.

Simply observing the presence of public credit registries as evidence of their efficacy is misleading. While it is true, as Deputy Governor Acharya cites in his speech, that roughly 90 countries do have some form of public credit registry, this does not necessarily mean: (1) they perform tasks described in the July 4 speech well, or at all; (2) they are trending among nations—as in, more countries are building or rebuilding them; or, (3) they operate as is envisioned for the proposed Indian PCR.

While the above 2x2 matrix is helpful for organizing broad categories of nations by the presence and absence of public credit registries and private credit bureaus, in reality, there exists a broad diversity of characteristics within each cell by type of data reported (financial, non-financial, commercial, MFI, SACCO, etc.), coverage, and how the PCR is administered (is it outsourced or managed internally by central bank).

For example, some public credit registries have low coverage as a result of setting a high loan floor (the loan level above which loan information must be reported to the PCR) and are purely for prudential oversight, such as is the case in Germany. In other cases, the PCR mandates that all individual and business loan data of any size be fully reported to it, and the PCR then sells consumer and commercial credit reports in direct competition with private credit bureaus—such as is the case in Malaysia. Further, some private credit bureaus collect primarily negative or derogatory financial payment data (Australia) or largely negative non-financial payment data (US). And it is not uncommon for public credit registries to be administered by a private credit bureau, even one with a license to operate as a private credit bureau in the same country (Morocco, Philippines, Vietnam).

In other words, there is tremendous diversity in the combination of public credit registries and private credit bureaus by data collected, how the PCR is administered, and functions performed. Table 5 below breaks out just a single cell from the above 2x2 matrix to account for just bureau and registry coverage rates. What is evident is that there is no single preferred approach, as relative coverage rates vary dramatically across PCRs and PCBs and among nations. Were we to add further dimensions—whether the PCR is administered by a central bank, a finance ministry, a private sector vendor; whether commercial lending data is collected by the PCR; whether non-financial data is collected by the PCR—the diversity of outcomes would be greater still.

Table 5: Distribution of Countries by Coverage Rates in PCR and PCBs

	PCB Low Coverage	PCB Moderate Coverage	PCB High Coverage
PCR Low Coverage	Nigeria, Pakistan		Germany
PCR Moderate Coverage	Indonesia, Philippines	Vietnam	Ecuador, Peru
PCR High Coverage	China, Portugal, Spain	Argentina	Brazil, Malaysia, Uruguay

Source: World Bank Doing Business (http://www.doingbusiness.org/data/exploretopics/getting-credit).Low coverage defined as less than 20%, Moderate coverage defined as 20% to 60%, High coverage defined as above 60%.

These details are important. For example, Germany's public credit registry has less than 2% coverage. In the case of Germany, the public credit registry is relatively small and is purely for prudential oversight. The PCR in Germany and many countries is relatively old, is strictly limited to providing prudential oversight, and has not grown or expanded. Yet they and others like them are counted among the countries with PCRs.

Examining just those countries contained in the 2x2 cell indicating the presence of both a PCR and a PCB, China claims private credit bureaus with almost 22% coverage. It is hard to understand how this is measured. Almost two years ago, the People's Bank of China (PBOC) announced it may be issuing licenses to 8 private credit bureaus. It even named them.[23] When pressed in public fora, representatives from the PBOC had repeatedly claimed that the licenses had not yet been issued, and did not know when they will be issued. Earlier this year, however, it was reported that a credit bureau license was accepted by a consortium led by the National Internet Finance Association of China that includes the likes of Baidu, Alibaba and Tencent.[24]

Malaysia offers another example of the diversity of relationships between PCRs and PCB. Malaysia technically has a public credit registry and four private credit bureaus. In reality, the four private bureaus are niche bureaus specializing in non-financial data—such as a registry on vehicles and equipment (Financial Information Services), court record data (CTOS), businesses and individuals' bankruptcy, litigation cases, winding-up petitions, trade reference information, addresses, shareholdings, and the number of credit enquiries made on a particular subject over the years (RAM Credit Information),

[23] Don Weinland and Enoch Yiu. "PBOC calls on Alibaba, TenCent to help develop credit reporting market," *South China Morning Post* March 1, 2015. Downloaded at http://www.scmp.com/business/companies/article/1675957/pboc-gives-licenses-alibaba-tencent-and-ping-run-credit-data; Cadell, Cate and Shu Zhang. "No more lone rangers? Beijing's waning support for private credit scores." Market News. Reuters. July 4, 2017. Downloaded at https://www.reuters.com/article/ant-financial-credit/no-more-loan-rangers-beijings-waning-support-for-private-credit-scores-idUSL3N1JO05W

[24] Larry Yee. "China Fintech: 2nd consumer credit bureau in sight now." *EJ Insight*. Jan 9, 2018. Available at: http://www.ejinsight.com/20180109-china-fintech-2nd-consumer-credit-bureau-in-sight-now/

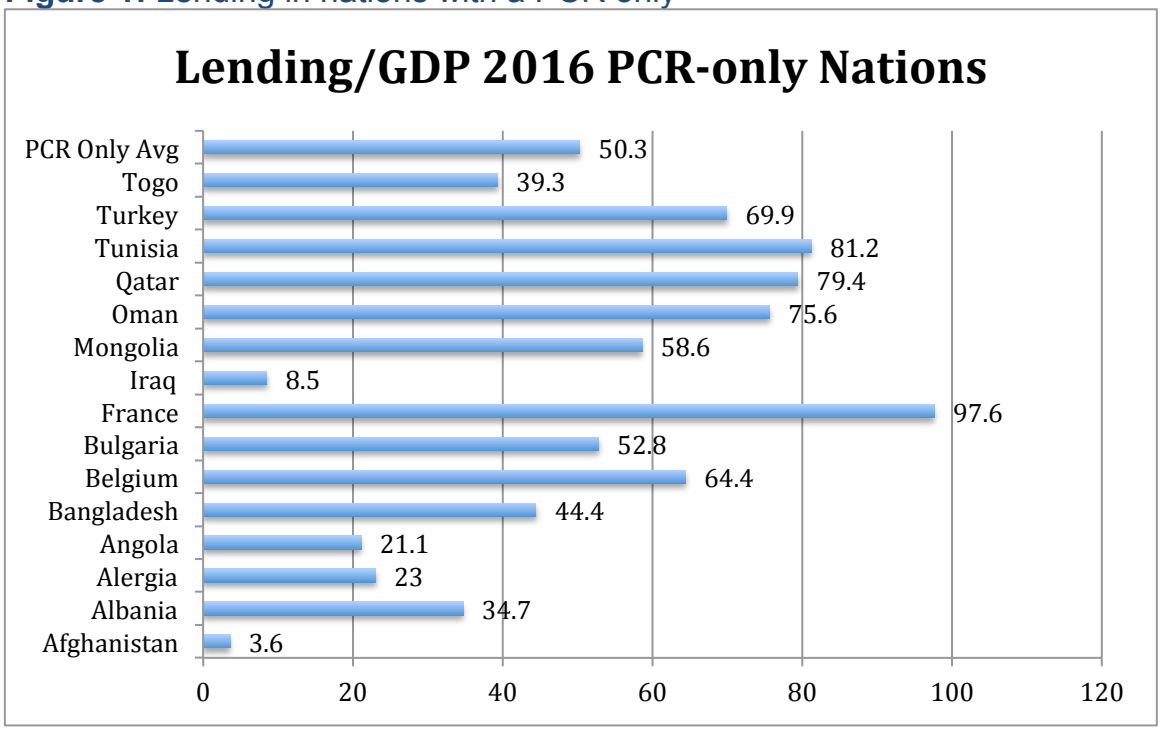
and a traditional financial credit bureau (Credit Bureau Malaysia).[25] Here, financial institutions are mandated to report detailed loan data (individual and business loans) to Bank Negara Malaysia, the public credit registry. Bank Negara provides reciprocal access to detailed credit reports to all data furnishers, thereby rendering the private credit bureaus to compete for non-financial data and in the offering of value added services. The result is a fragmented data market with niche private credit bureaus and a large public credit registry that dominates the market for consumer and commercial credit reports.

As noted above, the presence of a public credit registry within a given country can mean many different things. Of course, the objectives and functions of a PCR, as defined by Deputy Governor Acharya, suggest they are both for the benefit of lending institutions, and for regulatory purposes (macro- and micro-prudential oversight, banking supervision, monetary policy, statistics, etc.). PERC wholeheartedly supports a PCR functioning for regulatory purposes, if a PCR is needed to gather data for these purposes. However, the notion that a PCR is vital or necessary for the efficient functioning of consumer and/or commercial lending markets is a question that can be addressed with empirical evidence from countries with a PCR, as was seen in the previous section.

If indeed PCRs were necessary and vital for efficient lending, one would expect countries with only PCRs or with both PCRs and PCBs to outperform countries with only PCBs in terms of lending. One metric of this would be the ratio of lending to GDP. As is shown in Figure 1, in 2016 countries with only public credit registries averaged 50.3% lending to GDP. The range was expansive, from a low of 3.6% in Afghanistan to a high of 97.6% in France. If we control for war-torn countries, the range narrows to roughly 21% to 98%, or roughly 77 percentage points, and the average lending to GDP ratio modestly increases to 56.6%.

[25] "Credit Registry: Malaysia's Experience." 4th Credit Reporting and Risk Management Training. Kuala Lumpur. 5-9 November, 2012. Presentation by Dr. Hamim Syahrum Ahmad Mokhtar and Rosnizam Saari of Bank Negara Malaysia. Downloaded at: http://www.ifc.org/wps/wcm/connect/30c312804d76a23fa90abd48b49f4568/Session_8_1_H.S.A.Mokhtar.pdf?MOD=AJPERES

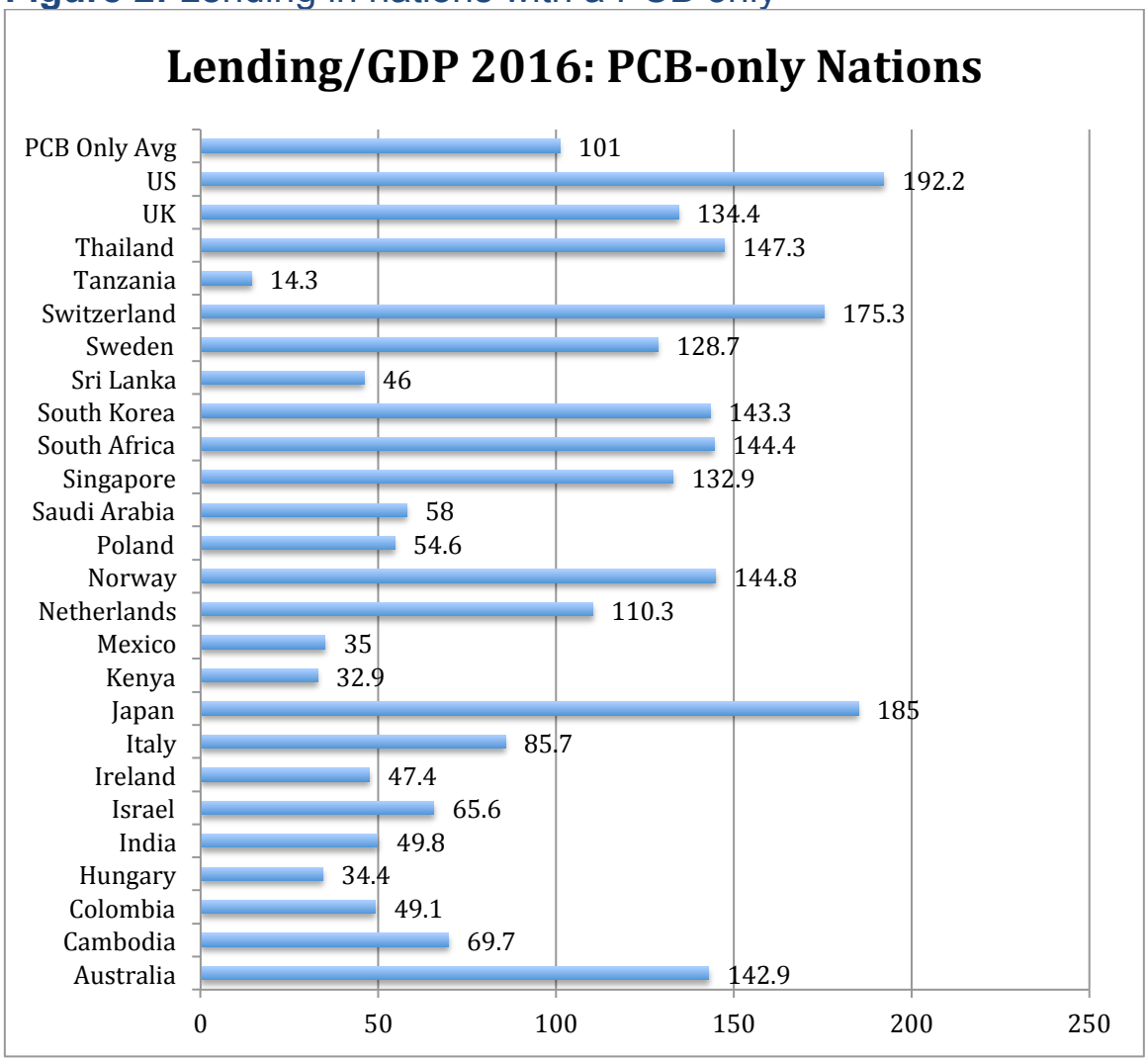
Figure 1: Lending in nations with a PCR only



Source: World Bank, Doing Business

Next we look at one measure of performance in countries that have only private credit bureaus, using the same metric as above to enable comparison. In this case, the average lending to GDP ratio in 2016 for such countries (101%) was more than twice the rate of those nations with only public credit registries (50.3%). In this case, if we control for relatively new credit bureaus (Kenya, Tanzania), the average increases to 103.3% and the range narrows to 157.8 percentage points with a low of 34.4% in Hungary and the high remaining 192.2% in the US.

Figure 2: Lending in nations with a PCB only



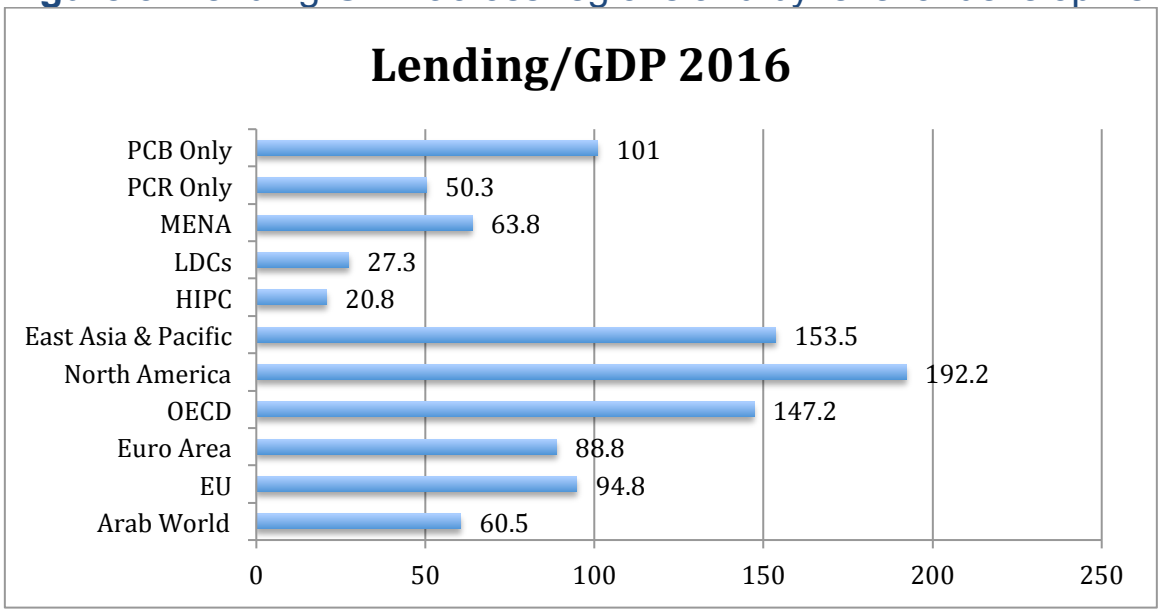
Source: World Bank, Doing Business

Figure 3 provides helpful additional context. There we see that the cluster of countries with only public credit registries dramatically underperforms all regional and economic clusters except for heavily-indebted poor countries (HIPCs) and those countries defined by the United Nations as least developed countries (LDCs).

If, as has been implied, having a public credit registry were truly necessary for a vibrant, efficient, well-functioning national financial services system, we would expect to see countries without one underperforming relative to those nations with a PCR—either just a PCR or a PCR in combination with private credit bureaus. That evidence demonstrates the inverse is true casts serious doubt on the necessity of a public credit registry to the performance of a nation's financial services system. Instead, a reasonable person could look at the same evidence and conclude that private credit bureaus are necessary to a robust and vital national financial services

system, while PCRs matter little or not at all. In fact, this position is supported by the research done independently by Harvard University, World Bank, and PERC economists.[26]

Figure 3: Lending/GDP across regions and by level of development



**Source*: World Bank, Doing Business

The point here is not to entirely dismiss the potential value to an appropriately scoped and maintained public credit registry, but rather to manage expectations about the likely impacts implementing a PCR in India or any other country will have on the performance of national credit markets. While there is good reason to think that increased access to different data assets will improve the regulatory functions of a PCR over time, and this alone would be a huge net positive for the Indian financial services sector and economy, past research of the impacts of PCRs from countries around the world does not support the notion that a PCR will have profound impacts on the ability of lenders to extend and price credit.

Further to this point is that care should be taken to craft implementing regulations or statutes that proscribe certain behaviors by a PCR. Specifically, if the private sector is already fulfilling certain functions that a PCR could fulfill, then if the PCR enters that market it may do more harm than good if it enters the market and badly distorts that market. Unfortunately, there are abundant examples where PCRs have overstepped appropriate and optimal bounds and have undertaken actions that have either severely damaged national credit information sharing and risk analytics markets, or have entirely destroyed them. Table 6 below summarizes a few of the better-known examples of PCR overreach.

[26] Djankov, S. et al. 2005. Private credit in 129 countries. *NBER Working Paper No. 11078.* www.nber.org/papers/w11078; Turner, M. and R. Varghese. 2007. *Economic impacts of payment reporting participation in Latin America*. Chapel Hill, NC: Political and Economic Research Council. Downloaded at http://www.perc.net/wp-content/uploads/2014/10/FF_Impacts.pdf

Table 6: Summaries of PCR Overreach

	CIS Structure	Developments	Outcome
China	-established PCR -no operating licensed PCBs -emerging closed loop "credit bureaus"	-FICO partnering with PCR to generate score -FinTech pressuring current market structure -PBOC expected to clamp down on FinTechs acting as PCBs	-No scores used -No Licensed bureau operating yet -Large shadow banking sector -FinTech growing rapidly (Alibaba, Baidu)
Ecuador	-PCR outsourced -1 PCB	-PCR originally just regulatory functions and collect/share data with PCBs -PCR expanded functions	-6 PCBs became 2, then 1. -Lending/GDP ratio 26% in 1960, 29% in 2016.
Morocco	-PCR outsourced -2 PCBs	-PCR lacked capacity to grow and evolve -PCBs growing and serving needs of lenders	-PCR being revamped to serve regulatory purposes -Data will be directly reported to PCBs -New regulations to be written for PCBs
Bulgaria	-PCR -No PCBs	-PCR originally traditional -Lowered reporting floor to capture nearly all loans -Permitted data furnishers access to credit reports	-PCBs exited as unable to earn profit -Lending/GDP 58% in 2016.
Philippines	-PCB quasi-outsourced -4 PCBs	-PCB unable to access financial data for 30 years -PCR created to correct market failure -PCR collecting financial and some non-financial data	-PCBs concerned that PCR revenue generating requirement may result in competition -PCBs fear commodification of data

**Source:* PERC discussions with national credit regulators, PCR and PCB executives, industry insiders, subject matter experts at regional development banks and multi-laterals.

4 Necessary Conditions for Intervention in Credit Data Markets

While there is much to be said about the need for greater data access and use by regulators in India, including the creation of new databases, perhaps a PCR if deemed needed, the proposed PCR has some detractors. Among them is Prasanth Regy of the National Institute of Public Finance and Policy (NIPFP), New Delhi. The NIPFP is an independent research unit of the Ministry of Finance that works jointly with the Department of Economic Affairs. In reply to the RBI's announcement of a PCR, Mr. Regy has argued that: (1) RBI has offered no market failure justification for the creation of a PCR; and, (2) that the RBI offered no evidence establishing the necessity of a PCR for the efficient operation of Indian credit markets.[27]

PERC strongly disagrees with Mr. Regy on the first point, and partially agrees with him on the second point—primarily for reasons already addressed above. The contents of this section shed more light on why we believe the RBI is correct to promote greater data sharing, and create new databases for regulatory needs (creating a PCR if need be) responding to existing market failures in the Indian credit information sharing market. To do so, we draw upon international examples.

There are several contemporary examples that are instructive—including Australia, Brazil, and the United States. Each are briefly addressed below.

Australia: In 2012, the Privacy Commission in Australia amended the Privacy Act to expand the universe of data that could be reported to licensed private credit bureaus. Prior to 2012, credit reporting in Australia was what is called a "negative-only" system where only derogatory financial payment information (delinquencies, charge-offs, defaults, collections) was shared with PCBs. At the time, the Privacy Commission was swayed by arguments put forward by lenders, credit bureaus, and risk analytics firms that the inclusion of more predictive data would enable increased financial inclusion, fairer lending, better decisioning (and therefore less systemic risk) or more responsible lending.

Over the ensuing 6 years, lenders and the dominant credit bureau (then Veda Advantage, now under new ownership) while publicly supporting the Privacy Act reforms, took actions to delay and drag out the expanded data sharing approach. There were even rumors that the largest four lenders were lobbying Parliament, the Privacy Commission, and Treasury not to implement. To the extent that credit reporting is voluntary in Australia—as it is in many other countries including Brazil, Canada, Japan, the UK and the US—industry efforts to delay proved highly successful.

To a large degree, the situation in Australia is highly similar to that of many other countries around the world. The consumer and commercial lending sectors are

[27] Regy, Prasanth. "RBI's proposal for a Public Credit Registry." August 2, 2017. Downloaded at https://ajayshahblog.blogspot.ca/2017/08/rbis-proposal-for-public-credit-registry.html

highly concentrated, the credit information sharing sector is highly concentrated, and credit reporting is voluntary. Lenders in this scenario often do one of two things—they report only minimal amounts of data (see furnishing as a compliance matter and not as an opportunity for growth and development as in Australia and Brazil) or they purchase controlling interest in a private credit bureau and choke off access to and permissible uses of credit bureau data (see Mexico). They do this because they are typically extracting rents from lending markets and do not wish to promote competition for fear of an erosion of profits.

The situation became so unpalatable in Australia that the Productivity Commission threatened to mandate data furnishing if a deadline was not met. The deadline came and passed without significant movement (one major bank shared data with at least two of the three licensed private credit bureaus). Thereafter, the Treasurer announced plans to introduce lending reform legislation designed to promote competition, the cornerstone of which would be a data reporting mandate. This proclamation was subsequently validated when Prime Minister Turnbull announced the same as well as the creation of a Royal Commission to draft legislation to be introduced to Parliament. This draft is expected to be made public sometime in February, 2018.

While the full scope of the data mandate and credit information sharing and use reform cannot be known as of press time, the important point here is that the government of an advanced economy has recognized a market failure in credit data sharing and has taken steps to intervene in the market to correct it. This could serve as a powerful precedent as governments around the world move to close information gaps through interventions.

Brazil: The situation today in Brazil is nearly a carbon copy of the present situation in Australia. Lending markets are highly concentrated as is the credit information sharing market. Banks and other stakeholders pleaded for credit reporting reform in 2007 and succeeded in changing national law. There too, the system is voluntary and after the law took effect in 2008 banks publicly supported it, but have not permitted private credit bureaus to share full-file payment data with competitors. The reasons for the delay are largely tied to the lending market structure and pervasive fears of competition that would be enabled by a more robust data sharing environment.[28] Here too, it is unlikely to change without further government intervention mandating financial data sharing.

United States: The US has had a stable regime of voluntary credit reporting in place since 1970 with the enactment of the Fair Credit Reporting Act (FCRA). By the mid 1990s, the industry had consolidated from thousands of private credit bureaus, to four nationwide consumer reporting agencies (Equifax, Experian, Innovis,

[28] Turner, Michael A. and Robin Varghese. "Economic Fairness Through Smarter Lending: Some Factors to Consider on the Eve of Credit Reporting Reform in Brazil." Information Policy Institute. Chapel Hill, NC. Downloaded at http://www.perc.net/wp-content/uploads/2013/09/WEB_Brazil_White_Paper_short_study.pdf

TransUnion) and hundreds of niche consumer reporting agencies (Lexis-Nexis Risk Solutions, Factual Data). During this same period, the US consumer and commercial lending sector also underwent tremendous consolidation, though there remains a reasonable degree of competition in most lending markets.

While the US model has been touted worldwide as a full-file (timely and late payment data is reported) and comprehensive (financial and non-financial payment data) voluntary credit information sharing system, such a characterization is an oversimplification.

First, the system is not full file for all types of data. Nearly all of the non-financial payment data loaded into the FCRA-regulated databases at the nationwide CRAs is negative-only data, meaning late payments, charge-offs, defaults, and collections. This is a legacy effect of regulations debated during the 1960s that envisioned only negative payment data populating credit reports. State laws governing most of the non-financial sectors (energy utilities, telecommunications, media, rent) were written to comport with federal law and remain as obstacles to this date.

Second, while the system is not completely comprehensive in terms financial accounts, it is not at all comprehensive in terms of non-financial accounts that could be furnished. The vast majority of information in credit reports is financial and public record data. Only a small fraction of the total tradelines—estimated to be just 4%--are accounted for by the universe of non-financial payment data included in credit reports. For example, TransUnion reports roughly 1.5 million full-file rental payment data tradelines in their database, while Experian reports only positive payment data on an undisclosed number of renters in their FCRA-regulated credit file database. Based on past research, we estimate the total number of utility and telecoms payments fully reported to nationwide CRAs to be roughly 10 million.

Third, while the credit information sharing system in the US is technically voluntary, for practical purposes it is not for the largest regulated lenders. Recent attempts by major regulated lenders to withhold data (credit limits, for example) or to report only to a single bureau were met with forceful resistance from federal regulators. In essence, for regulated financial institutions the credit reporting system is a de facto mandatory system but not a de jure one.

For non-financial institutions, however, it is a truly voluntary reporting system. And in those markets that are concentrated and which seek to avoid competition—this is certainly the case in wireless telephone service, in broadband, in cable and satellite television service, and in other segments—the business case for fully reporting customer payment data to one or more nationwide CRAs has been largely unconvincing. In addition to deep-seated competitive concerns, executives in such industries perceive the costs of reporting (data furnisher obligations under the FCRA, consumer disputes, customer service, IT systems upgrades, and exposure to litigation) as outweighing the potential benefits from reporting (reduced delinquencies and charge offs, improved cash flow, increased customer loyalty).

This is a case of market failure. Private credit bureaus in the US have been attempting to persuade non-financial firms to fully report to them for decades with little to show for their efforts. While PERC and many other organizations maintain that such reporting is permitted under existing law, clarifying legislation has taken 13 years to wend its' way through the legislative process where a bill—H.R. 435 "The Credit Access and Inclusion Act of 2017"—was passed out of the House Financial Services Committee by a vote of 60-0 in December of 2017 and waits to be voted on in the full House of Representatives and then the US Senate. Even if passed, this bill is unlikely to have much of an impact on the volume of non-financial data fully reported to nationwide CRAs as it does not mandate reporting. The market failure will likely persist in the US until steps are taken by Congress to mandate or otherwise promote reporting.

There are abundant further examples of credit information market failures. Data is not shared across bureaus in Russia; data in Japan is incomplete and fragmented; non-financial data is not reported in Canada, Australia, and many other countries.

Generally speaking, policymakers should examine ways to encourage information sharing when data is not shared due to a market failure. That is, if data is not shared even though the total social benefits from sharing exceeds total social costs. This can occur, as illustrated in the above examples, in a highly concentrated lender/data furnisher environment, where potential furnishers act to maintain the status quo.

A market failure can also occur if the information sharing market fails to be sufficiently innovative to produce a data sharing business model that appropriately compensates or incents data furnishers to share data when the total benefits of the data are greater than the compensation/incentives.

This should not be confused with the case where the costs associated with collecting or furnishing data outweighs the potential benefits of the data. An example of this use to be rental payment data in the US. Prior to the mid 2000s, this data would have been too costly to collect in sufficient amounts, despite the fact that the data could be very valuable in credit origination. With IT advances and the spread of more advanced billing systems/software by large landlords or property managers, the collection of rental data became economical. Online, third-party payment systems then made collection from much smaller landlords or individual tenants possible. The market is currently working through ways to expand collection of this data. This process takes time. As was noted earlier, the IT revolution is making many new types of data able to be collected efficiently, and so similar attempts to explore how to collect new types of data are underway.

There are also cases in which the benefits of the data to end users is insufficient to justify the data's collection, even though the data might be able to be collected cost effectively. This would not typically be considered a market failure, per se. However, there could be cases in which the sharing of the data may not produce a large

financial return for lenders, but may impact segments of borrowers for which there is policy interest, such as very low-income farmers. Or there could be cases in which lenders/end-users do not fully monetize the benefits from improved underwriting (such as social benefits from improved access to credit by low-income farmers).

Data integrity is a massive problem in many emerging markets owing to a lack of a reliable financial identity and a simple garbage-in/garbage-out phenomenon. It is hard to find a country that has truly full-file and comprehensive data in the national credit information sharing system. India is no exception, and has major issues with data quality, comprehensive reporting, and full-file reporting. There are numerous market failures in India that could benefit from well-calibrated government policy interventions to promote positive social and economic outcomes. The policy response to market failures or data gaps in information sharing can include a PCR, but in markets with well functioning private credit bureaus the response can also be mandating or otherwise promoting greater information sharing with the credit bureaus. Regulators can fill "internal government" data gaps with new databases that combine and rationalize already collected data, supplement it with the collection on new fields, and receiving data from the private sector credit bureaus/data aggregators.

5 Conclusion / Application of lessons learned to India

This report covers considerable ground. It reviewed economic literature on the role of public credit registries and the relationship between PCRs and private credit bureaus, with the key take-away being that PCRs function best as complements to PCBs. It examined empirical evidence on the credit market impacts of PCRs and found, through a variety of prisms, that the impact of PCRs on lending volume and performance is at best marginal and possibly inconsequential. And finally, the report draws on a deep well of knowledge of international experiences with PCRs and PCBs in an effort to provide helpful and illustrative examples of PCR successes, PCR failures, and offer insights into how a PCR in India may avoid some pitfalls and traps in order to contribute to an economically and socially optimal outcome.

Here, it bears repeating that the authors of this report could only infer intentions of the RBI from publicly available documents. It is possible that we may have misread or misinterpreted the RBI's actual positions on various matters associated with the development of the proposed public credit registry in India. Further, for the most part, the authors of this report share many of the beliefs about the potential benefits from introducing a PCR in India and about the optimal functions and structure of a PCR—especially on data pertaining to regulatory matters including bank supervision, micro- and macro-prudential oversight, and statistics.

- **PCR for Regulatory/Oversight Purposes**

We are in broad agreement with the need for regulators to have access to necessary data. With the explosion of data being used in financial services and newer techniques being used to analyze this data, there is a strong need for government oversight agencies to closely follow and keep up with financial sector innovations. That is, there is the need for RegTech to keep up with FinTech. And there is value in accessing data to monitor the economy or evaluate policies and programs. While this will require the government to have access to data, it does not mean that the government will need to collect it itself. In fact, overemphasizing the collection of data to create a grand unified database over the actual need to have *access* to data could become a distraction.

  - **Government data and databases:** A PCR made up of already collected data from regulated entities could be "easily" created, which aims to have unit of observations being the account level or the individual (consumer or business) level. As mentioned in the RBI documents, these could be supplemented with the collection of a few additional fields and/or data on more loan types. In addition, a PCR could work with multiple national, state, and local government entities to allow for the collection and connection of data resources across the larger government sector. This would enable more effective government operations, the monitoring of government programs, and even enable the private sector to utilize national data resources. This, in and of itself, could be a herculean but valuable undertaking.

  - **Accessing other data for which there is a private market:** Since there is no need to reinvent the wheel and duplicate efforts, the private bureaus can provide insights, reports, and data as required by the government. In this way the government can support India's private information sharing sector by becoming a data user. If there are certain details or data it would like to add to the private data but is not currently being collected, it could ask the PCBs to collect the data. If they are unable to, perhaps there are legal or regulatory barriers that could be modified that would enable the data to be collected. If not, then the government could require the data to be reported. To harmonize reported data, the government could also promote common data standards as needed.

  - **Accessing data which could have a private market, but does not:** If a type of data is not being collected generally, then the government could remove or modify regulatory or legal barriers if they exist, spur a new market by announcing they would like to be a long-term customer for this data, and failing that, have the PCR collect it directly if needed or require it be reported to private credit bureaus and then have it reported to the PCR/government database. Alternative data, such as utility or telecom payment data, is an example of data that is not being collected, but could be.[29]

[29] The value of this data has been highlighted in much of PERC's work, in the July 4th speech, and among other RBI officials, for instance see "Recent Policy initiatives in Credit Information Sharing," Keynote

- **Accessing data that are not typically shared or collected in databases:** As noted in this report, there are data that are not typically shared and collected in a database. This could be detailed bank transactions data for an individual that an individual may authorize a creditor to access in real time for a one-time purpose. There could be telecom call log data, IoT data, detailed in-house data from a lender, detailed transaction data from an online retailer, or the like. Consumers might be comfortable with having this data used one-time and/or in a new FinTech application, but may be very uncomfortable with a credit bureau or government collecting this data en masse. Prudent regulation may require samples of these types of data (perhaps anonymized or otherwise strictly controlled) to be accessed so regulators can understand new tools and solutions that are being developed and introduced. And then there are data captured from twitter, search engines, Internet retailers, satellite images, drones, and on and on that do not fall into the PCR/credit bureau model at all. Some of this data have proven valuable in a number of areas including macroeconomic monitoring (price levels, economic activity, factory activity, etc.). And, finally, in addition to the above data, much effort will be needed to be carried out in terms of utilizing this data with advanced modeling and analytics.

In short, a PCR could be one component of a larger government effort to access useful data. And this may be more of a central database or databases than a traditional PCR. Not all data accessed needs to be reported to a PCR. In fact, much useful data cannot be or should not be. And with cloud computing and very fast data transmission speeds, data used for one purpose can come from many sources (it is common for multiple databases to be queried). As outlined above, the government's need to access data can support the development of a more robust private information industry with the government acting as a data user or modifying regulation that may unduly or inadvertently inhibit information sharing. But where there are persistent data gaps or market failures, the PCR/government could compel reporting directly to itself or via a private entity.

It is also worthwhile to consider that in markets with very robust information sharing, there can be a large number of data aggregators, credit bureaus that tend to specialize in different types of data. Some, focus on general consumer credit account data, some on general small business credit data, some on data on larger businesses, some on financial markets, some on public data, some on government data, some on assets data, and some on alternative data. Each of these is very broad and may be subdivided further. Since collecting each type of data presents its own challenges, it may be easier for a PCR interested in such a broad array of data to simply act as a data coordinator, bringing data together from individual private sources as much as is possible.

Address delivered by Shri R. Gandhi, Deputy Governor on March 3, 2015 at Seventh Annual CIBIL TransUnion Credit Information Conference.

- **PCR for Lending and other Private Sector Purposes**

The key potential concern harbored by the authors of this paper relates to the seeming intention of the RBI to enable some degree of competition with existing private commercial and consumer credit bureaus (the same potential exists for ratings agencies and other data aggregators, all of which are beyond the scope of this analysis). To help ensure that the benefits from introducing a PCR are fully captured, while the risks from foreseeable unintended consequences and other known risks are mitigated, PERC offer the following suggestions:

- **Slow down the process:** It is entirely understandable that the RBI prioritize the creation and introduction of an RBI into the Indian financial services system. Statements made by RBI staff have exuded enthusiasm for the perceived potential for the PCR to benefit the sector and the economy. However, there is also potential for a PCR to be harmful to the financial services sector and the Indian economy. Given the stakes, it is critical that a PCR in India or anywhere carefully consider the potential for harm and be designed in such a way as to prevent or mitigate harms. And while the RBI has established a special task force to examine this topic, and has said the task force will solicit input from academics, multilaterals, the regional development bank, and others with relevant expertise, the task force is set to release their recommendations to the pubic on April 4th, 2018—a very aggressive timeframe given what's being proposed. Further, there may be value in expanding the task force, for instance to include key stakeholders such as the MSME sector[30] and the private credit bureau and information sector. PERC recommends that the deadline for the recommendations be extended by several months to allow for a more comprehensive discussion that includes all relevant viewpoints. They further recommend the expansion of the task force to include among others representatives from the MSME sector, the private credit bureau sector and credit information furnisher sector, the credit risk analytics sector, and the MFI sector.

- **Focus on regulatory functions:** Both RBI Deputy Governors Acharya and Vishwanathan made statements announcing the intention of the PCR to provide services to lenders that are traditionally offered by private consumer and commercial credit bureaus.[31] India's financial services sector has great room for improvement, but all available empirical evidence suggests that progress in the growth and development of that sector will best be driven by private credit bureaus and other private sector actors (risk modeling firms, niche aggregators, FinTech) rather than a government operated PCR. We argue that the biggest return on the RBIs investment can be had by focusing on the regulatory functions, not on helping improve credit markets by offering data, reports, or value added services.

[30] "RBI Forms Task Force on Public Credit Registry But Excludes MSME Sector." KNN (Knowledge and News Network). 28 November, 2017. Downloaded at http://knnindia.co.in/news/newsdetails/msme/rbi-forms-task-force-on-public-credit-registry-but-overlooks-the-msme-sector

[31] "Public credit registry to speed up digitisation: Vishwanathan," *The Hindu.* November 6, 2017. Downloaded at http://www.thehindu.com/business/public-credit-registry-to-speed-up-digitisation-vishwanathan/article19993312.ece

- **Complement PCBs, Don't Compete:** Directly related to the prior point, PERC encourages the RBI task force to recommend a set of constraints be placed upon the functions of any recommended PCR in India. At a minimum, these should include prohibitions on the offering of credit reports to lenders; on the offering of value added services to lenders and other potential end users; and upon any intervention in the credit information sharing and credit risk analytics markets that cannot be justified by a market failure. Such proscriptions are warranted by both credible and peer-reviewed research and evidence from many countries with prior experience with PCRs and PCBs—including instances of PCR overreach that held disastrous consequences for a nation's lending markets and economy in some cases.

- **Fill Data Gaps, Support the Private Information Sector:** To remedy key data gaps in lending, such as the lack of utility or telecom payment data, the RBI could recommend promoting the collection of these key data elements (and others) by the PCBs. These efforts would aid the PCBs and the information sector in developing value added services for lenders and other data / services users and aid lenders in risk assessment of applicants, particularly those with little credit history (the credit invisible). This will increase credit inclusion. The PCR could then obtain this data from the PCBs. In addition, important government data sets useful for consumer and SMME lending can also be made available to the private sector. Expanding the permissible use of PCB data can further support the Indian information sector, aid the Indian economy and cutting edge sectors, and create additional value from data already collected. For instance, permissible uses could be expanded for purposes seen in other markets, including tenant and employment screening, FinTech (including peer-to-peer lending), and risk screening by other non-bank/non-creditor entities.

From a big picture perspective, if the government works to create a PCR for lending that competes with private credit bureaus, and the PCR is successful, what is the benefit to the Indian economy? After all, the same roles as the PCR are being performed by private credit bureaus and new data elements can simply be mandated or encouraged to be reported to these entities. On the other hand, if the PCR does not perform as hoped but hobbles private information sharing by starving it of revenue, then there is clear risk for the economy and lending. Re-launching and re-establishing private information sharing could take many years. And even if a PCR is successful in the short- to medium-run, a separate issue is that the information sharing industry is dynamic. It may be important to have a vibrant private information sharing sector to explore capturing, exchanging, and collecting new types of SMME and consumer data (which, along with IT, changes over time).

If the PCR captures the same data as private credit bureaus, then what is the point of a PCR? If it captures the same and more, then this fragments information sharing and would likely just force the private sector out of this space. If a PCR shares the

additional data with private bureaus, then, again, what is the point of a PCR, since this data could have just been reported directly to the private entities.

Policymakers and regulators should also be aware of the motives of various economic actors that may support a PCR competing with private bureaus. For instance, credit bureau customers, such as lenders, may simply want to access credit reports or data from the government at what they think would be lower prices, or potentially no cost. And, as seen in other markets, lenders may not have much interest in a vibrant private information sharing market if they believe that it results in greater lending competition.

Finally, a thorny and very real issue with collecting credit data, creating individual profiles and then redistributing them, as a PCR would do if it competes with private credit bureaus, is how data (accounts) are combined. Imperfect matching produces errors that result from choices made by the PCR/bureau. In the US, India, and other markets, this is not a small issue. This means that a PCR would need customer service and a consumer dispute-handling department. That is, a PCR competing with credit bureaus would not simply be a database with data pipes in and out. However, a PCR with only a regulator/oversight role could act to improve data quality by receiving data quality reports from private credit bureaus (and/or inspecting data it receives from private credit bureaus) and then requesting improved data quality from lenders/furnishers that fall short.

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