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THE CONSEQUENCES OF PROHIBITING CREDIT INQUIRY DATA IN CHILEAN CREDIT FILES: PERC White Paper

PERC
RESULTS AND SOLUTIONS

Executive Summary

Research has consistently shown that credit bureaus that share greater amounts and types of information for use by lenders result in increased access to credit, better lending decisions, lower priced credit and a fairer distribution of credit. Nations with credit sharing systems that exchange rich information among lenders have been linked to higher levels of aggregate private sector lending. This in turn has been linked to greater economic growth. The benefits of increased information sharing accrue to borrowers, lenders, and society as a whole and are increasingly well understood. Because of this, there is a clear global trend toward greater information sharing, such as movements from negative-only systems to full-file systems where credit bureaus existed and credit bureau creation in nations where they did not.

Against this backdrop, it is unfortunate that there is a proposed prohibition on the sharing of credit inquiry data in Chile. In other economies, with full-file and comprehensive systems, there is clear evidence that credit inquiry data is quite valuable, adding to the predictive strength of scoring models and improving loan underwriting. This appears to be particularly so for thin-file consumers (those new to credit and the credit underserved), who would likely be most negatively impacted with the loss of inquiry data. In Chile's mostly negative-only system, such data is likely even more valuable. As such, one would expect borrowers, lenders, and the Chilean economy to be harmed with such a meaningful reduction in information available to lenders. The evidence suggests the harm would be in the form of reduced access to credit and higher priced credit, particularly for those on the credit margins, such as those with little observed credit history.

1. INTRODUCTION

During the past 30 years, credit bureaus have assumed a core role in the financial infrastructure of economies around the globe. Credit bureaus help to solve a problem that is inherent in lending: imprecise knowledge of a borrower's likelihood of repaying. The lender must infer the risk profile of the borrower so that some low-risk borrowers are not mistaken as high-risk, and some high-risk borrowers are not mistaken as low-risk. Mistakes lead to a reduction in credit available, credit extended inappropriately, higher priced credit, and problems of overextension by borrowers. In presenting credit and payment information about potential borrowers to lenders, credit bureaus reduce the information asymmetries allowing for greater lending through reduced rationing, lower prices (interest rates) for credit and lower rates of delinquency and default.

This paper presents evidence that the degree to which the benefits from credit bureaus and the exchanging of information are realized depends on the types of information that are exchanged and made available to lenders. In short, the more information that is exchanged and made available, the more borrowers, lenders and society benefit.

The most basic structure of credit reporting is a negative-only system in which only negative data, such as information on severe delinquencies, defaults, bankruptcies, liens and other negative public records are reported. This sort of system essentially alerts lenders of borrowers who have had serious financial problems in the past. This is an events based system. The system and lender would be alerted only after severely negative events had already occurred. If the problems were recent for a borrower, the lender would likely decline a credit request or only extend credit at a high price.

On the other hand, a full-file system includes both negative and positive information. Positive information includes on-time payments, moderately late payments, account balances, credit limits, credit utilization ratios, credit inquiries and other information on accounts opened and closed by the borrower.

As we will show in this paper, credit decisions based on full-file information significantly outperform those based on negative-only information. The consequences of a credit system only having access to negative data from a credit bureau, relative to full-file data, are reduced access to credit, poorer lending decisions, higher priced credit and a distribution of credit that is less fair.

The logic behind the value and impact of the inclusion of positive data in lending decisions is that with such data lenders are able, for instance, to tell that while a borrower may not have had a past serious delinquency, they may be opening many credit accounts, rapidly acquiring credit card debt, perhaps approaching their total credit limits and starting to become moderately late on their obligations. In such a case, a creditor using only negative information may be unaware of the borrower's financial strain and may extend additional credit to the borrower. On the other hand, a creditor

using both positive and negative data would likely not extend credit, thus preventing a further overextension of the borrower and not putting its capital at undue risk. In fact, it might be considered irresponsible lending to not take account of the fact that a loan applicant has recently applied for many lines of credit. Conversely, a borrower who happened to be severely late on a credit card bill in the preceding year may find it difficult to secure credit from a lender that used only negative data. However, if that borrower had paid down their credit card debt and had consistently paid on-time since their delinquency, a lender using a full-file system might be more willing to extend credit. A negative-only system is inherently less forgiving since 'positive' behavior is not reported and cannot be used to repair a credit profile once it is damaged.

Compared to a full-file system, a negative-only system provides both an incomplete picture of a borrower's risk and is more unforgiving. Chile's system is neither purely negative-only nor full-file, it is best described a negative-only system with some positive data elements, namely credit inquiry data.

Since Chile's credit reporting system does not include most of the positive data elements found in more comprehensive and full-file systems, there is good reason to believe that the value (and potential value) from the credit inquiry data is significant. For instance, if credit balances, credit limits, credit ratios and occurrences of moderately late payments cannot be used to signal financial strain, it is likely that the frequency of credit inquiries, which is the frequency with which a borrower is seeking credit, may be particularly important for lenders. It is also likely important for borrowers as a protection against overextension. As the research presented in this paper finds, it is likely that the additional information provided by the credit inquiry data results in increased access to credit, better lending decisions, lower priced credit and a fairer distribution of credit.

In a full-file system, credit inquiry data may take on less importance but it should be noted that even among the most comprehensive full-file systems, credit inquiry data not only influences credit scores and underwriting but represents one of the key factors considered. The inclusion of the data is not an accident and the weight given to the data is not arbitrary. Vast data sets with actual loan performances are used to test the value of different data elements in predicting borrower risk. Weights are determined by statistical analysis. Over and over again, analysis after analysis, in different economies, over time, credit inquiry data has been shown to be predictive of borrower credit risk.

In the United States the dominant generic credit scores, the FICO scores produced by the Fair Isaac Corporation, list credit inquiry data and new credit account data as determining ten percent of consumer credit scores[i]. The main competitor to the FICO score, the VantageScore, also lists credit inquiry data and new credit account data as determining ten percent of a consumer's VantageScore[ii].

The impact of credit inquiry data on the performance of credit score models in the United Kingdom was revealed in a document submitted by Equifax to the Treasury[iii]. In that document Equifax's analysis showed that the use of credit inquiry data improved score model strength (the ability of a model to predict) across all sectors analyzed. The largest improvement was seen in assessing the credit risk of thin-file consumer, those with fewer than three accounts in their credit files. These consumers are typically new to credit and due to their lack of a credit history are often credit underserved, getting approved less often, at higher prices and for smaller loan amounts. For these consumers, the inclusion of credit inquiry data adds between six to eight percent to a measure of the predictive power of the models examined. For thicker file consumers, with much more positive and negative information, including information on new accounts opened and credit utilization ratios, credit inquiry data added between two to four percent to the predictive power of the models examined. It should also be remembered that in the U.K., unlike in Chile, credit files contain not only information on credit inquires, but also on new accounts actually opened (with accompanying credit limit and balance data). In the U.K., data on new accounts opened likely substitutes to some degree for the loss of credit inquiry data in Equifax's analysis.

The contribution of credit inquiry data to the total strength of credit models in the U.K. may seem modest but it is clearly not negligible. In the U.S., credit inquiry and new account data contribute to about ten percent of consumers' credit scores. Given that the credit systems in the U.S. and the U.K. are comprehensive and full-file it is reasonable to conclude that the importance of credit inquiry data is much greater in Chile. It is also reasonable to conclude that prohibiting its sharing and use in credit underwriting would result in reduced access to credit and higher priced credit in Chile, and if findings from the U.K. hold in Chile, disproportionately reduced access to credit by those that are already financially underserved. This last point, that the credit underserved, that is those persons on the credit margins, are the ones most impacted by the inclusion or exclusion of information has been found to be the case in studies that examine the such impacts, as will be discussed in section 2.

Finally, it should be underscored that changes to a consumer credit reporting system and consumer lending impacts not only credit to consumers for consumer goods but also access to credit for small business and entrepreneurs. Very small businesses and entrepreneurs typical cannot finance their businesses and ventures as larger companies do. Instead, the owner or entrepreneur usually must borrow in his or her own name, or at least co-sign, for business credit or consumer credit that he or she uses for their venture. Many, in fact, use their personal credit cards. In this way, the owner's or entrepreneur's personal access to credit very much impacts the business's access to credit.

Section 2 of this paper provides an overview of the evidence of the impacts of greater information sharing from research based on actual credit files comparing credit decisions when certain data elements are included to those when the elements are

excluded. This is referred to as the micro-level. **Section 3** focuses on research comparing variations in lending and growth across nations with variations in national credit reporting systems. This is referred to as the macro-level. **Section 4** summarizes the general trend in credit reporting systems globally and **Section 5** concludes.

2. Credit Reporting, Its Structure and Consequences: The Micro-Level

Across economies, the structure of credit reporting varies, perhaps most saliently according to what information is contained, for how long and for what uses. Credit reporting also differs according to ownership; chiefly, whether the function is fulfilled by public credit registries or by private registries. Credit reporting may also be comprehensive—comprising data from all financial obligations—or segmented—according to the type of credit (e.g., bank, retail, etc.).

The most minimal form of credit reporting involves the provision of "negative-only" information (i.e., only serious delinquencies, often of 90 or more days past due, and defaults are reported). The most extensive form—full-file reporting—contains both negative and "positive" payment data, or whether the payment was timely and to what extent it was late, how much credit is utilized, credit inquiries, public record data on liens and bankruptcies, and often additional information on employment. Cases within this range, such as the system found in Chile, can also be found.

Given that these are deliberate choices, it is no surprise that the effects of these variations have been examined extensively. What is surprising is the fact that these empirical examinations into the consequences of the structure of credit reporting have only recently received attention from regulators in most countries.

The research suggests that the more credit and payment information that is shared and used in credit decisions results in:

- increased lending;
- better lending decisions and loan performance; and
- a more equitable allocation of credit.

The evidence for these findings is extensive and will be discussed in this and the following sections.

2.1. Full-file payment information versus negative-only data

Credit reporting systems are not perfectly described by general categories, for instance a full-file comprehensive system in one country may include some data elements not included in another full-file comprehensive system. While Chile's system of credit reporting can best be described as a negative-only system, it does contain credit inquiry data, a positive data element. As discussed in the previous section, this positive data element likely takes on increased value in a negative-only system relative to full-file comprehensive systems. For this reason, examining differences observed and simulated between negative-only and full-file systems can help explore the implications of excluding credit inquiry data in Chile.

A common assumption is that as long as a lender is aware of the serious delinquencies on an applicant's other accounts, the lender has largely all the payment information data s/he needs to make an effective decision. That is, all the lender needs to know is the past failures of the applicant. The limitations of such systems may be considerable.

First, negative-only systems do not capture many moderately late payments (30+ days past due or 60+ days past due) that are thought to be not very significant. Yet, these late payments, while short of an industry-defined level of default, are often telling of the likelihood that a borrower will be seriously late. That is, minor delinquencies are often predictive of more major ones, as they indicate financial strain, and their inclusion can improve the accuracy of the loan decision.

Second, the reporting of positive information provides a low-cost way of gathering data on applicants who have paid in a timely fashion, and it provides information especially on those who may be often discriminated against, such as lower income borrowers, women, racial minorities and the young. Reporting positive information not only provides wider access, but also provides fairer access to credit simply because more information allows lenders to make more informed decision and *not* ration.

And third, full-file reporting can allow creditors to see how many lines of credit a potential borrower already has, and, in many cases, the associated balances and/or credit limits. This enables the creditor to better gauge the potential borrower's credit capacity and true level of indebtedness, thereby reducing the chances of extending the borrower too much credit, resulting in over-indebtedness. Therefore, broader information reporting is an important protection against credit over-extension or over-indebtedness.

More information directly and indirectly allows lower costs to issue a loan. For example, automated mortgage underwriting, enabled by full-file information, saved American consumers more than $18 billion in 2002.[iv] In competitive credit markets, these savings are passed along directly to borrowers.

2.1.1. Evidence: The Impact on Access to Credit

Here, we restrict the discussion to the findings of simulations based on anonymized credit files from a number of different economies. We do so because this technique allows us to consider access in terms of the number of individuals who are approved for credit and not the aggregate value of the loans. Importantly, these simulations use actual credit files and actual credit scores; they therefore provide a way to explore how credit decisions would differ when different information is available for underwriting. The decisions using unaltered full-file credit files are compared to decisions using the same credit files when the positive data (or other types of data) is removed. The first of these simulations, conducted by the pioneers of this method, John Barron and Michael

Staten, used U.S. files to simulate the impacts of a system in which only negative information is provided.[v] The findings were compared to a full-file, comprehensive system. The following table describes their results.

Table 1: Shifts in Acceptance Rates for a Targeted Performance Level in the Change to Full-file (Barron and Staten)		
Target default rate	Full-file, comprehensive reporting	Negative-only reporting
3%	74.8%	39.8%
4%	83.2%	73.7%
5%	88.9%	84.6%
6%	93.1%	90.8%

At a 3% default target the difference in the share of potential applicants accepted is 35%. The gap narrows as the default rate rises. But it remains positive until fully converging with 100% acceptance.

The gap is explained by the fact that with less information, more and more bad risks are mistakenly thought to be good ones and more and more good risks are thought to be bad ones. At lower default targets, only smaller numbers are judged as good risk.

The finding of this shift in the trade-off has been verified in a number of studies, including those that use data from other economies.

A study by PERC's Information Policy Institute on the U.S. Fair Credit Reporting Act includes one negative-only simulation, in which payment data less than 90 days past due were excluded.[vi]

At a 3% targeted default rate, nearly 10% more of the applicant pool can be accepted when full-file information in available as compared to negative-only. Of the various simulations, the results of this one are most modest. Yet, even here we find that lending increases by more than 22%.

PERC's study of credit reporting in Latin American used 5 million anonymized Colombian credit files and a commercial grade generic scoring model ACIERTA™ developed by TransData LLC.[vii]

Colombian files include a considerable degree of non-financial payment information such as rental and utility payment data. As such, the default rates (defined as more than 90 days past due) comprise many non-financial accounts. The results of that simulation are found in the Table 2.

Table 2: Shifts in Acceptance Rates for a Targeted Performance Level in the Change to Full-file – Colombia (Turner and Varghese)[viii]

Target default rate	Full-file, comprehensive	Negative-only reporting
5%	41.35%	5.15%
7%	58.82%	13.60%
10%	73.06%	54.97%
12%	77.80%	72.26%

The differences are starker due to the inclusion of non-financial data, but the logic and nature of the findings remain. The question as to whether negative-only data suffices for effective lending or whether full-file data provides considerable lift to loan performance is a clear case of how more information on past payment patterns and current credit obligations helps predict future payment outcomes.

Other treatments using Latin American data, while using varying levels of non-negative information, confirm the value of positive categories of data. Giovanni Majnoni, Margaret Miller, Nataliya Mylenko and Andrew Powell's examination of public registry files from Argentina, Mexico and Brazil for both supervision and credit decisioning simulates negative-only and full-file or fuller file information.[ix]

As found in simulations using American files and Colombian files, positive information considerably increases access to credit, given a performance target. The two tables below show the results of the simulations.

Table 3a: Shifts in Acceptance Rates for a Targeted Performance Level in the Change to Full-file (Majnoni et al)[x]		
Argentine loans in excess of US$21,000		
Target default rate	Full-file model	Negative-only model
3%	60.22%	49.50%
5%	76.37%	75.76%
7%	86.02%	84.26%
9%	92.76%	91.95%

Table 3b: Shifts in Acceptance Rates for a Targeted Performance Level in the Change to Full-file (Majnoni et al)		
Brazil loans in excess of US$300,000		
Target default rate	Full-file model	Negative-only model
2%	65.08%	49.20%
3%	82.27%	55.84%
4%	91.53%	84.81%
5%	96.23%	94.36%

If we examine the 3% default target for each simulation, we see in the Argentine case an increase in acceptance by 10% of the pool of potential applicants over the negative-only scenario when full-file information is used. For the Brazilian case, acceptance for this

target increased by more than 26% of the pool of potential applicants. This finding is in keeping with Barron and Staten's results (an increase in acceptances by nearly 35% of the potential applicant pool) using U.S. files.

Indeed, there are no studies that find contrary results, or suggest that there is not an improvement when full-file information is used instead of negative-only.

2.1.2. Evidence: Impacts on the Distribution of Credit

The aggregate figures of increasing acceptance rates detailed above hide a significant factor, how different systems of reporting affect the distribution of credit. This has been examined closely in two separate studies. The first uses U.S. credit files and the second Colombian files.

The PERC's Information Policy Institute's study on the potential impact of data restrictions in credit files on lending examines the consequences for the distribution of credit.[xi] The files were appended with anonymized socio-demographic information on race/ethnicity, age, gender and household income. Differences in acceptances rates between full-file and negative-only systems thus can be examined according to these categories. Table 4 breaks down the results.[xii] (The negative only acceptance rate is indexed to 100 for each segment. Acceptance rates for the full-file scenario are expressed in terms of the index.)

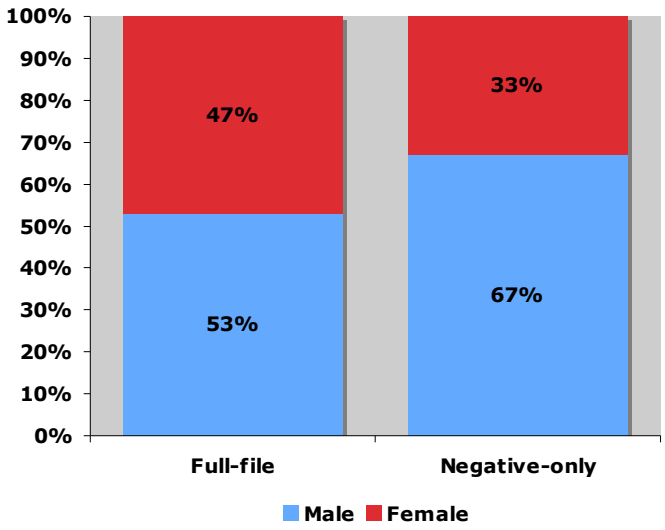
Table 4: Shifts in Acceptance Rates for a 3% Targeted Default Rate in the Change to Full-file Reporting by Social Segment (Turner et al)

	Negative-only	Full-file
Race/Ethnicity		
Caucasian, Non-Hispanic	100	121.8
African American	100	127.9
Latinos	100	136.8
All Minority	100	135.5
Age		
<36	100	147.1
36-45	100	121.8
46-55	100	121.2
56-65	100	119.8
66-75	100	117.9
76+	100	119.9
Household Income		
< 15,000	100	135.9
15,000-29,000	100	129.7
30,000-49,000	100	124.2
50,000-99,000	100	120.6
>100,000	100	117.8

Three results are notable. Ethnic minorities witness greater increases in acceptance rates with full-file information. In the US, acceptance rates for African Americans increase by 6 percentage points more than for whites, and by 15 percentage points more for Latinos. The acceptance rate increases by a greater degree for the young than for those older. Those below 35 witness a growth that is nearly 30 percentage points greater than those between 66 and 75. Finally, low-income households (those which make less than $15,000 annually) see a greater increase in their acceptance rate than households that make more than $100,000 a year: by nearly 18 percentage points.

Notably, the increase in acceptance rates for women do not differ significantly from that of men. This finding may not hold for other settings. PERC's study on Latin America found an increase in the acceptance rate for women in a switch from a negative-only to a full-file system, as shown in figure 1.[xiii]

Figure 1: Borrowers by Gender Under Full-File and Negative-only as a Share of Total Borrowers (Colombian files; Turner and Varghese)



Individuals in underserved social segments are the most likely to benefit from expanded information sharing. Positive information is more likely to "thicken" their files, given their histories of difficulty accessing credit, than those of others. A system of loan decisions based on more robust payment information also can help mitigate human biases against the young, women, low-income groups, and minorities and counter the belief that they are more irresponsible in meeting financial obligations. Behavioral predictions can be based on observed behavior rather than on descriptive features. Moreover, once automated systems are introduced, many of these factors will not even enter the decision process, consciously or unconsciously.

2.1.3. Evidence: The Impact on Loan Performance

The counterpart to greater acceptance rates for a given default rate is lower default rates for a given acceptance rate. The tables below report the percentage point and percentage changes in the default rate for 5 simulations.[xiv]

Table 5: Percentage Point Change in the Default Rate in Switch from Full-file to Negative-Only (Percent change in parentheses)

Acceptance Rate	Barron and Staten using U.S. files	Turner et al, using U.S. files	Turner and Varghese using Colombian files (includes non-financial trade lines)	Majnoni et al using Argentine files	Majnoni et al, using Brazilian Files
30%		0.8 (62%)	4.94 (120%)		
40%	1.84 (170%)	0.6 (33%)	8.96 (183%)	0.92 (60%)	1.48 (114%)
50%		0.3 (10%)	8.54 (146%)		
60%	1.45 (76%)	0.4 (8%)	8.1 (113%)	0.83 (28%)	1.53 (83%)
70%		0 (0%)			
75%	1.03 (34%)				
80%				0.96 (19%)	0.86 (30%)

As noted previously, Colombian simulations included delinquencies on non-financial trade lines such as rent and utilities and are not, therefore, strictly comparable, although the direction of changes is. The other four simulations show the default rate increasing by as little as 0.3 percentage points (or a 10% increase), which is still a considerable degradation of portfolio performance, to as much as 1.84 percentage points (a 170% increase). Majnoni et al's simulation using Brazilian files revealed that even at an extremely high acceptance target (of 80%), the default rate increases by 0.86 percentage points (or 30%). At a 60% acceptance target, Brazilian simulations reveal a near doubling (an 83% increase) in the default rate under negative-only reporting compared to full-file reporting. These effects are significant for a lender, and moreover in aggregation, for an economy's financial stability and growth.

2.2. Comprehensive reporting vs. segmented reporting

In many ways, the issue of comprehensive reporting vs. segmented reporting is akin to that of full-file vs. negative only. While few explicit arguments for a segmented system exist publicly, defenders suggest that for bank loans only bank loan payment history is truly relevant. Other payment information, supporters of segmented systems suggest, may give some additional grounds for predictions, but their contribution is either small or redundant.

As in the case of full-file vs. negative-only reporting, the operating logic rests in the fact that more information assists lenders in making better decisions. Recall also that credit rationing (the condition in which given two individuals with the same risk profile one will be given credit and another will not) arises largely due to lack of information. By definition, segmented systems offer less information than comprehensive systems. We expect, as with full-file systems, a comprehensive system will yield:

(i) better predictions confirmed by better performance; and,
(ii) less rationing verified by larger acceptance rates.

2.2.1. Evidence: Credit Access and Loan Performance

One common structure for credit reporting is the model of a consortium by a class of lenders. By this framework, banks, non-bank financial institutions or retailers collect positive and negative information from lenders in their sector. Often this information is made available only to the sector from which it is collected. Decisions are thus made with positive and negative data, but the trade lines are restricted to the sector.

Two studies have compared the impact of sector level segmentation. In the first, Barron and Staten, found considerable shifts in acceptance rates when switching from retail-only information to full-file in simulations based on U.S. files, as Table 6 shows:[xv]

Table 6: Shifts in Acceptance Rates for a Targeted Performance Level in the Change to Comprehensive Reporting (Barron and Staten)

Target default rate	Comprehensive model	Retail-only model	Change in switch to full-file
3%	83.4%	75.4%	+10.61%
4%	90.6%	80.6%	+12.41%
5%	96.3%	94.1%	+2.34%

In the second study, PERC's examination of Japanese credit reporting using Canadian files and a commercial grade generic scoring model found similar results, see table 7.[xvi] Default rates in Japan are dramatically lower, on average, than those found in other advanced economies. This is the result of credit rationing. Retail credit markets in Japan are severely under-developed and relatively unprofitable. And a large black market for

credit exists owing to the substantial unmet demand for credit in Japan. The PERC study attributed the under-developed retail banking sector in large part to Japan's segmented, generally negative-only credit reporting system.

Table 7: Shifts in Acceptance Rates for a Targeted Performance Level in the Change to Comprehensive Reporting, Japan Simulation (Turner)			
Target default rate	Full-file model	Non-bank-only model	Change in switch to full-file
0.5%	47.81%	31.32%	+52.65%
1%	70.90%	62.70%	+13.08%
2%	86.34%	79.34%	+8.82%
3%	92.38%	83.29%	+10.91%

Each of these studies affirms simply that more information enables lenders to make more accurate decisions. Acceptance rates go up (without hurting performance) as lenders come to realize that those they otherwise believed to be bad risks were not.

Similar to changes in loan acceptance rates shown, default rates (not shown) are significantly higher for segmented systems than comprehensive systems.[xvii]

Credit files may also become more comprehensive with the inclusion of non-financial payment data. Non-financial data is payment or account data from accounts for goods or services outside of the financial sector, such as utility and telecom services. These services are usually more widely used than financial services. PERC studies have shown that the segments of the U.S. population that are least likely to be in the mainstream credit market, such as ethnic minorities, lower-income households, the young and the elderly benefited most positively from the addition of non-financial information to their credit files[xviii]. These studies have shown that the inclusion of non-financial data provides increased fairness in credit extension and allows lenders to make better lending decisions. Specifically when added to consumer credit files, the non-financial data brings in many who would have had no credit file at all, adds needed additional payment records to those consumers with only one or two records on file, and has little impact on those consumers with many traditional payment records on file. Lending expands as new consumers are brought into the system and lending improves as credit-scoring models using the additional data better predict payment outcomes. In short, there are improvements in both equity and efficiency.

2.3. Summary

Whether full-file versus negative-only or comprehensive versus segmented, the evidence is clear at the micro level that more information used in loan underwriting results in better lending, more lending and fairer lending. Next, the macro impacts of variations in credit reporting systems will be discussed.

3. MACRO EFFECTS ON DEVELOPMENT AND FINANCE

The economic impact of a stronger financial structure is a well-explored topic. Theoretically, finance has been thought to "mobilize savings," or to move savings to uses that can assist consumption or can develop productive capacity through investment. At the level of the individual, it also has been thought to smooth consumption over a person's life cycle. In the aggregate, it is thought to stabilize consumption and thereby decreases the swings of the business cycle. Moreover, at the level of the society, *wider* access to finances may have positive consequences for economic fairness, equality and poverty alleviation, as access to credit helps in asset formation.

These theoretical claims have been empirically examined. Basically, three spheres of economic life are strongly shaped, directly and indirectly, by the structure of credit reporting:

(i) economic growth and stability;
(ii) the price of credit; and,
(iii) income distribution, as it relates to both poverty and equality.

These macro effects are achieved most commonly through a sustainable expansion of lending that comes with better risk assessment. The following explores results of macroeconomic or macro-level (national level) examinations of the impact of credit reporting.

3.1. Credit Reporting and Private Sector Lending

Simeon Djankov, Caralee McLiesh, and Andrei Shleifer examined private credit and credit reporting in 129 countries.[xix] They found that two factors significantly increased lending to the private sector: the rights of creditors in collateral and bankruptcy, which creates incentives to lend, and information sharing in an economy. In Djankov, McLiesh, and Shleifer's estimates, private bureaus consistently increased lending far greater than public bureaus, which in the estimates had an ambiguous impact. In estimations that examined all countries, private bureaus increased lending by 21% (vs. 7% for public bureaus, though the latter was not statistically significant). In estimations that restricted the data to poorer economies, private bureaus increased lending by 14.5%, compared to 10.3% for public bureaus. (Both coefficients are significant.)

Our estimates of the impact of information sharing conducted for a study of credit reporting in Latin America examined 65 economies and found similar results. The tests we conducted examined the effects of the same factors on private sector lending as a share of GDP. We modified the estimates to take into account whether reporting is full-file or negative-only. We also used variables that posit coverage—or what portion of

the adult population has files in a specified bureau—by a combination of private or public, and full-file or negative-only registries.[xx]

As in Djankov, McLeish and Shleifer's study, extensive rights for creditors account for a large degree of the variance in lending to the private sector for obvious reasons; lenders are more willing to lend if the chances of recouping the principal is greater in the event of a default.

However, what is quite telling is the implication that 100% coverage of credit eligible adults by a *full-file* private bureau can be expected to increase private sector lending by more than 60 percentage points of GDP (all else being equal). There are no such statistically significant impacts observed for negative-only bureaus. In our estimates, removing observations with very high levels of private sector lending, notably the United States and the United Kingdom, resulted in a coefficient of 0.475, which was still significant at the $p < 0.01$ level, that is an increase in lending by 47.5 percentage points of GDP. (Coefficients on the other variables remained roughly the same.)

A third study was conducted by the Inter-American Development Bank.[xxi] Unlike Djankov, McLeish, and Shliefer or our study, the IADB's statistical estimations measured the impact of information sharing on loan performance. The IADB examined data from 170 banks in Bolivia, Brazil, Chile, Colombia, Costa Rica, El Salvador, and Peru in order to measure the impact of private and public bureaus on loan performance. It found that banks which loaned primarily to consumers and small businesses and used private bureau data had non-performance rates that were *7.75 percentage points lower* than ones which did not. No such effect of any magnitude could be found for the impact of public bureaus.

From these studies, it can be concluded that (1) private credit bureaus result in increased lending and better loan performance and (2) full-file private bureaus result in greater lending compared to negative-only credit bureaus.

3.2. Greater Economic Growth and Stability

The research on finance and growth is extensive. Multi-country estimates show that economies with larger financial sectors (under various measurements) have higher rates of growth, greater productivity increases, and faster growing capital stock. The links are theorized to be direct (allocation of capital to productive investments) and indirect (facilitating exchange, permitting greater corporate control over managers). The consumer credit reporting system is clearly only one part of the system, relating as it does to risk assessment and credit allocation among consumers and small businesses, whose finances are quite often coincidental with the personal finances of their principals. Other factors such as the stock and bond markets also are significant.

In cross-country estimations, Ross Levine found that an increase in private sector lending by 30% of GDP can be expected to witness an increase in GDP growth by 1% per annum, and increases in productivity and capital stock growth by 0.75% per annum.[xxii] This is a conservative estimate compared with many others, and should be considered in the context of our findings concerning the impact of higher participation rates in private full-file credit bureaus upon growth in private sector lending as a share of GDP.

Recall that 100% coverage by a private, full-file reporting system can conservatively increase lending to the private sector by 45% of GDP.[xxiii] The World Bank's Doing Business figures indicate that about 34% of Chileans are covered by a private credit bureau. With this level of coverage, a shift from full-file to negative-only credit files would result in a shift of private sector lending by about 15% of GDP. This, in turn, would then change GDP growth by 0.5% per annum. Since the removal of inquiry data in an otherwise negative-only system is not entirely a shift from a full-file system to a negative-only system, the removal would likely decrease GDP growth by a lesser degree. If we assume the inquiry data only represents only 30% of the impact of positive data then the removal of inquiry data would decrease growth by 0.15% per annum. On the other hand, if coverage were to expand to 100% and credit reporting became full-file, growth would increase by 1.35% per annum.

While these figures are based on somewhat simple regression results, and certainly do not represent precise estimates to Chile's economic growth from shifts in credit reporting, the following points can be taken. Comparing variations in credit reporting across nations, it is likely that a credit reporting regime shift in Chile, one in which inquiry data was no longer available, would likely result in a small but non-negligible decline in economic growth. This would represent a loss of trillions of Chilean pesos (billions of US dollars) over a generation. If, instead, measures were taken to expand coverage and increase the types of payment data collected and exchanged, a more significant increase in economic growth would likely result.

There are, of course, many examples of periods of increased lending that led to economic growth for brief moments, but then left debt crises in their wake. Latin American has been particularly prone to economic crises. Between 1974 and 2003, Latin America witnessed a higher rate of financial crises than any other region in the world. The region averaged 1.25 crises per country, with 35% of countries in the region suffering recurrent crises.[xxiv] By comparison, the second most crisis prone region during the period, Eastern Europe and Central Asia, experienced an average of 0.89 crises per country, with 11% of countries in the region suffering recurrent crises.

The micro simulations above offer a reason as to why greater lending, as enabled by full-file, comprehensive reporting, can be expected to help stabilize the lending environment. To the extent that lending is matched with capacities to carry the loan and willingness to pay, as demonstrated above, full-file reporting can contribute to stability by reducing problems of asymmetric information (by revealing more accurate

risk profiles) and moral hazard (by creating incentives to pay on time). It can also reduce moral hazard problems by helping to reduce interest rates.

3.3. Lowers Average Interest Rates

Without information on borrowers' risk profiles, a lender will mistake good risks for bad, and vice versa. The portfolio, therefore, will consist of more risky loans and, over time, as interest rates adjust to reflect loan performance, higher rates. Additionally, higher rates create incentives to engage in riskier projects, as lower-risk projects will not yield the return to compensate for the costs of the loan. Risky projects come to account for a larger share of the portfolio, thereby driving up the average rate. When information is shared, the ability to screen out riskier borrowers improves the portfolio's performance and allows lenders to offer lower rates to less-risky borrowers who would not have borrowed otherwise. [xxv]

3.4. Lowers Poverty and Improves the Distribution of Income

Beck, Demirgüç-Kunt, and Levine examined the impacts of greater private-sector borrowing on (1) income inequality as measured by the Gini coefficient (a standard measure of income inequality; higher values mean greater income inequality); (2) relative poverty, in terms of the income share of the poorest quintile; and (3) absolute poverty, in terms of the share of the population that lives on less than US$1 per day.[xxvi] Deck and colleagues found that greater private-sector lending:

- lowers the growth of the Gini coefficient;
- lowers the growth of the percentage of the population living under $1 per day; and,
- increases the growth of the lowest (poorest) quintile's income share.

Previously discussed simulations using U.S. credit files showed that low-income groups benefit from disproportionately greater increases in access to credit than other income groups. Our simulations using Colombian data did not permit segmentation by income group. However, there are reasons to believe that gender may be a proxy for this to a certain extent. To that extent, the Columbian results are also consistent with increased information available to lenders leading to a more equitable distribution of credit.

Credit reporting promises not only to alleviate poverty but, by providing more equal access to credit through the removal of information barriers, also to reduce inequality and improve the distribution of income *through a more efficient allocation of credit*. For Chile, with a higher than average level of income inequality (relative to other developed

nations), the equity benefits from using more information in lending may be particularly compelling[xxvii].

3.5. Summary

This section, focusing on variations in credit reporting and private sector lending across countries finds:

- Full-file credit file regimes and associated with greater private sector lending relative to negative-only systems.
- Greater private sector lending is associated with greater economic growth and decreased income inequality.

These findings are broadly consistent with those from the previous section, namely that greater information used in lending decisions is associated with increased lending, better loan performance, and fairer lending.

4. GLOBAL TRENDS IN CREDIT REPORTING

Theoretical economic literature, empirical research using actual credit files and lending outcomes, research using actual credit decisions, and cross country analysis all consistently point to a few basic and non-controversial findings. They are that increased, improved, and sounder lending can occur if more information is available on borrowers and their current and past credit and payment behavior. Findings also indicate that those who have been traditionally underserved by a credit system are those that typically benefit most when greater information is used in lending. That is, increased use of information in lending appears to lead to fairer lending. With increased information, credit can more easily flow to those are objectively determined to be sound risks, not just to those who have deep relationships with lenders.

As these relationships have become more and more apparent there has been a general move toward greater use of private credit bureaus, increased coverage of borrowers, and full-file comprehensive systems from negative-only systems. Given the public and private benefits associated with fairer and improved lending, the movement toward greater information sharing has been supported by public policy and private actors.

For instance, South African regulators are supporting the collection and sharing of new data sets to assist in credit access among the financially underserved, particularly for small business owners and the self-employed[xxviii]. Kenyan officials, in a bid to develop private credit bureaus in Kenya to improve lending, are mandating the reporting and exchange of credit and payment data. In fact, the list of newly created credit bureaus and bureaus in the process of being created is quite long. Mexican regulators are proposing mandating access to data across existing bureaus to prevent a segmentation of the market and to promote greater coverage and competition. Brazil and Australia are undergoing transformations from primarily negative-only regimes to full-file credit systems. Singapore recently mandated the continued reporting of credit data by some data furnishers in order to prevent market fragmentation. In Hong Kong, a push is underway to fill a gap in their current system, and have mortgage payment data reported. And data is exchanged among the bureaus in Japan's fragmented credit reporting system and there is great interest in improving that system[xxix]

In 2008, The People's Bank of China (PBC) established the Credit Reference Center, China's first consumer credit registry. The need to establish a consumer credit bureau in China was apparent to the PBC for some time, and serious efforts to develop the bureau began in 2002. As of March 2008, it contained credit profiles on some 600 million individuals.

In the US, consumer advocates, public officials, and lenders are supporting the full-file reporting of utility and telecom payments to credit bureaus. Currently, such information usually only enters consumer credit files (and credit scores) if such payments are very late. That is, they usually only enter as a collections account. Such a

system can be very unforgiving. A person is punished for being late, but not rewarded for paying on-time. Once a person is late, only time, not their on-time payments, will improve their credit standing. Of even greater importance, there are tens of millions in the US who have little or no payment information reported to the credit bureaus, since these consumers may not have utilized credit. The result is reduced access to low-cost financial products. Since much of this no-file or thin-file population has a history of paying a utility or telecom bill, the full-file reporting of such payments has the potential to greatly reduce the number of Americans that are financially underserved. Also, this would provide an avenue for consumers to build up their credit files and credit standing without going into debt. Consumers would not need use credit cards as a way of building their credit history, which many will eventually need when purchasing an automobile or home.

International development organizations, such as the World Bank and CGAP, consider credit bureaus and such data exchanges to be crucial elements of a nation's financial infrastructure and are working to assist in the establishment of credit bureaus and the expansion of information that is exchanged. In the World Bank's Doing Business Project, for instance, whether a nation has a credit exchange that includes positive information enters its depth of credit information index. In addition to the depth of credit information index, the coverage of the population in the exchanges, and creditors' rights are also tracked and reported by nation. As was mentioned previously, the addition of positive information is also a good means of increasing credit bureau coverage, as some may have no derogatories, only positive information, such as credit inquiries, on-time payments, or open accounts.

This broad global movement towards increased information sharing is a logical response to the benefits increasingly understood regarding the use of information for credit underwriting for lenders, consumers, and society as a whole. The massive advances taking place in information technology, which is continually making the reporting, storage, and use of information easier and less costly, are also facilitating its growth.

5. CONCLUSION

Much research has focused on comparisons between outcomes associated with negative-only systems, those that exchange only negative information such as severe delinquencies, defaults, bankruptcies, other negative public records, liens and the like, and full-file systems, that include negative data as well as positive data, such as account balances, on-time payments, credit limits, credit inquires and other account information.

The evidence reviewed in this paper clearly demonstrates that credit reporting systems that provide more information to lenders, such as full-file systems, result in increased access to credit, better lending decisions, lower priced credit, and a fairer distribution of credit. Analysis of cross-national variations suggests a significant link between more

information in credit reporting systems and aggregate private sector lending. This, in turn, has been linked to greater economic growth.

The World Bank and other international development organizations classify credit bureaus and registries as key elements of a nation's financial infrastructure. Emphasis is placed not just on the existence of information exchanges, but on whether a bureau is private, its coverage of the population and whether it is full-file and comprehensive, all of which have been positively linked to greater and improved lending.

With the evidence clear regarding the economic and societal benefits from exchanging rich information for lending purposes, there has been a pronounced global movement toward the creation of credit bureaus and the expansion of information exchanged in existing bureaus, including movements from negative-only system to full-file systems.

Chile's current system is best described as a negative-only system with some positive data elements, namely credit inquiry data. In the introduction of this paper, it was argued, supported by evidence from the U.S. and the U.K., that the inclusion of credit inquiry data in credit reports improves the performance of credit scoring models and loan underwriting. Credit inquiry data is likely particularly valuable in the Chilean system, which is mostly negative-only and does not have other data elements that could substitute for credit inquires, such as the details of new accounts opened by an applicant.

Thus, in light of the evidence presented in this paper, the exclusion of credit inquiry data in Chile should be expected to have negative impacts on borrowers and lenders in Chile and the Chilean economy.

On the other hand, there exists a great deal of potential improvement to the current state of credit reporting in Chile. A movement toward the sharing of more positive data should lead to increased access to credit, sounder lending, and a more equitable distribution of credit. Such win-win-win outcomes of improved equity *and* efficiency, in which borrowers, lenders and society all benefit, are rare. Consumer advocates, lenders and policy makers should support a movement towards a true full-file credit reporting system in Chile, in which more positive information is exchanged. And all should reject movement to reduced information sharing and a reduction in positive data in credit reports, such as the proposed prohibition of credit inquiry data.

ENDNOTES

[i] See http://www.myfico.com/CreditEducation/WhatsInYourScore.aspx
[ii] See http://www.vantagescore.com/about/vantagescore_model/
[iii] Equifax submission to the Treasury Select Committee Inquiry into Credit Searches
[iv] Michael Turner et al., *The Fair Credit Reporting Act: Access, Efficiency & Opportunity.* (Washington, DC: The National Chamber Foundation, June 2003) p. 8.

[v] John M. Barron and Michael Staten. "The Value of Comprehensive Credit Reports: Lessons from the U.S. Experience." p. 298.
[vi] Michael Turner et al., *The Fair Credit Reporting Act: Access, Efficiency & Opportunity.* Table 11, p. 50. Scenario C results. Available also online at http://infopolicy.org/pdf/fcra_report.pdf.,
[vii] Michael Turner and Robin Varghese, *The Economic Impacts of Payment Reporting in Latin America.* (Chapel Hill, NC: The Political and Economic Research Council, May 2007)
[viii] Michael Turner and Robin Varghese, *The Economic Impacts of Payment Reporting in Latin America.* Table 5, p. 30.
[ix] Giovanni Majnoni, Margaret Miller, Nataliya Mylenko and Andrew Powell, "Improving Credit Information, Bank Regulation and Supervision." World Bank Policy Research Working Paper Series, No. 3443 http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2004/12/17/000160016_20041217171024/Rendered/PDF/WPS3443.pdf,
[x] Giovanni Majnoni, Margaret Miller, Nataliya Mylenko and Andrew Powell, "Improving Credit Information, Bank Regulation and Supervision." Table 4, Panel B.
[xi] Michael Turner et al., *The Fair Credit Reporting Act: Access, Efficiency & Opportunity.*
[xii] Calculated from Michael Turner et al., *The Fair Credit Reporting Act: Access, Efficiency & Opportunity.* Table 12, p. 52
[xiii] Michael Turner and Robin Varghese, *The Economic Impacts of Payment Reporting in Latin America.* Figure 3, p. 34.
[xiv] John M. Barron and Michael Staten. "The Value of Comprehensive Credit Reports: Lessons from the U.S. Experience." Table 8.2, p. 297. Michael Turner et al., *The Fair Credit Reporting Act: Access, Efficiency & Opportunity.* Table 10, p 49; Michael Turner and Robin Varghese, *The Economic Impacts of Payment Reporting in Latin America.* Table 6, p. 31.; Giovanni Majnoni, Margaret Miller, Nataliya Mylenko and Andrew Powell, "Improving Credit Information, Bank Regulation and Supervision." Table 4, Panel A.
[xv] John M. Barron and Michael Staten. "The Value of Comprehensive Credit Reports: Lessons from the U.S. Experience." Table 8.6, p. 303.
[xvi] Michael Turner, Robin Varghese and Patrick Walker, *On The Impact of Credit Payment Reporting on the Finance Sector and Overall Economic Performance in Japan*, Table 5, p. 43
[xvii] John M. Barron and Michael Staten. "The Value of Comprehensive Credit Reports: Lessons from the U.S. Experience." Table 8.5, p. 302.; Michael Turner, Robin Varghese and Patrick Walker, *On The Impact of Credit Payment Reporting on the Finance Sector and Overall Economic Performance in Japan*, Table 6, p. 44.
[xviii] Turner, Michael, et. Al "Give Credit Where Credit is Due: Increasing Access to Affordable Mainstream Credit Using Alternative Data" PERC. 2006. Available: http://www.infopolicy.org/files/downloads/alt_data.pdf
[xix] Simeon Djankov, Caralee McLiesh, Andrei Shleifer, "Private Credit in 129 Countries." NBER Working Paper No. 11078 (January 2005). http://papers.nber.org/papers/w11078.
[xx] Michael Turner and Robin Varghese, *The Economic Impacts of Payment Reporting in Latin America.* Table 3, p. 18
[xxi] IADB, *IPES 2005: Unlocking Credit: The Quest for Deep and Stable Bank Lending.* (Washington, DC: IADB, 2004) p. 178. http://www.iadb.org/res/ipes/2005/index.cfm. p. 178
[xxii] Ross Levine, "Financial Development and Economic Growth: Views and Agenda." p. 706. R. G. King and and Ross Levine, "Finance, Entrepreneurship, and Growth: Theory and Evidence" find similar outcomes.
[xxiii] From Michael Turner and Robin Varghese, *The Economic Impacts of Payment Reporting in Latin America.* Table 3, p. 18.
[xxiv] IADB, *IPES 2005: Unlocking Credit: The Quest for Deep and Stable Bank Lending.* (Washington, DC: IADB, 2004) Table 3.1. p. 30. http://www.iadb.org/res/ipes/2005/docs/Chapter3Eng.pdf.
[xxv] Turner et al., *The Fair Credit Reporting Act*, Table 6., p. 30.
[xxvi] The Gini, which is a ratio that takes values between 0 and 1, or 0 and 100 when indexed, measures income distribution with higher values indicating greater inequality. Thorsten Beck, Asli Demirgüç-Kunt, and Ross Levine, "Finance, Inequality, and the Poor" (National Bureau of Economic Research working paper no. 10979, January 2007). Available at

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