ABFER ASIAN BUREAU OF FINANCE AND ECONOMIC RESEARCH

RESEARCH DIGEST

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In This Issue

Do Credit Card Companies Screen For Behavioral Biases?

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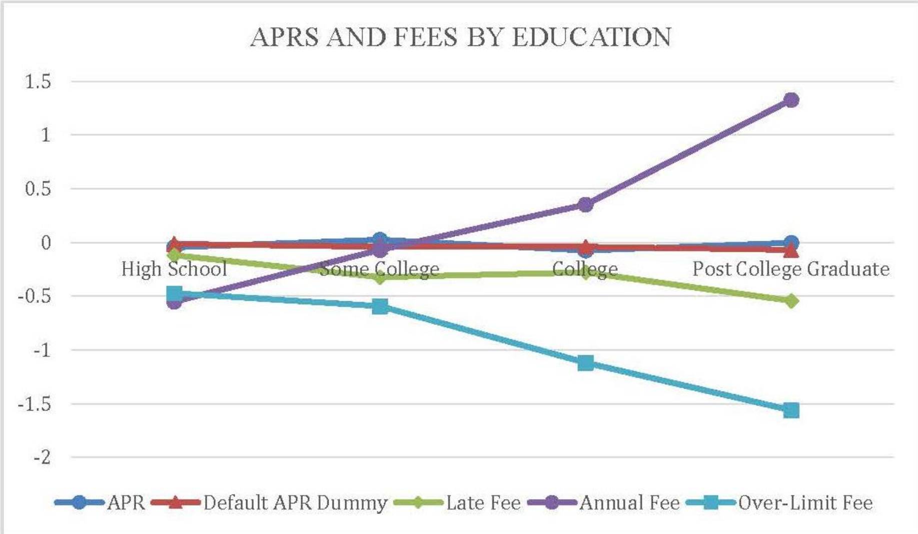
This paper looks into the supply side of the US credit card market to study whether and how the card issuing companies take the sophistication of their customers into account in their pricing and marketing strategies. Looking at the observable characteristics of households, the authors show that less-educated (financially less sophisticated) households are more likely to be offered more back-loaded or hidden fee structures that rely on low introductory rates and no annual fees but high penalty rates, late fees, and over-limit fees. The study also documents the use of shrouding. Offer letters sent to less-educated households are more likely to be shrouded by showing back-loaded terms only on the last pages of the offers.

Moreover, the authors find that card issuers attempt to screen households based on unobservable characteristics by offering a menu of cards with varying degrees of back-loaded fees and different rewards programs. Cards with reward programs (e.g., zero introductory APRs) that appeal to less-sophisticated consumers also have more back-loaded terms. But cards with miles programs that appeal to sophisticated customers have more front-loaded fees.

Importantly, this study documents a trade-off of credit card issuers between borrower sophistication and credit risk that has not been previously explored. A lending strategy that selects for less-sophisticated customers via back-loaded or shrouded attributes can increase rents from them over the short run, but might put the issuers to higher credit risk over the long run. If these card features attract customers who do not understand the true cost of credit, the issuer might end up with an adversely selected pool of borrowers who cannot pay their charges. In other words, by attracting customers who do not understand the credit terms that they are offered, the issuers might ultimately end up with borrowers who have a higher chance of not being able to afford the credit and thus of defaulting. The study finds that banks take this trade-off into consideration as they rely more on back-loaded and hidden terms when the credit risk of consumers is lower. Specifically, using changes in state-level unemployment insurance, which reduces the credit risk of borrowers, the authors show that card issuers rely more heavily on back-loaded terms when borrowers' credit risk is lowered. These findings suggest that card issuers are aware of the above trade-off.

This study highlights an important dimension of the use of naivete-based discrimination in consumer financial market. The authors say that the explicit targeting of less-sophisticated households with back-loaded or shrouded credit terms is important to understand, because earlier studies on the demand side have shown that credit card users pay higher fees and carry higher balances when they chose these contracts. In other words, households do not seem to be able to avoid the higher fees imbedded in these contracts.

Figure 1



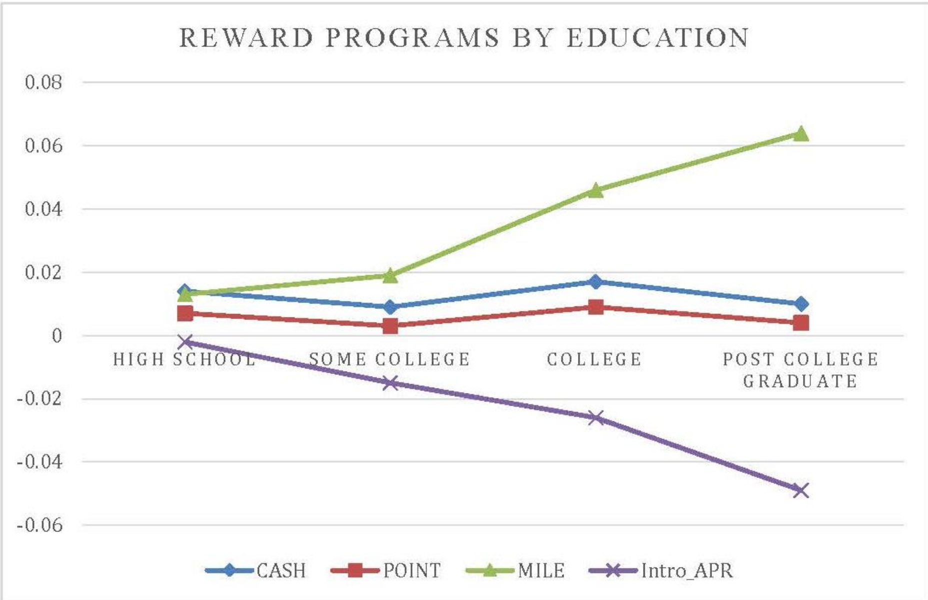


Figure 1 plots the estimated coefficients on education when we regress individual card features on dummies for different education levels (as provided by Mintel). The regression results are reported in Table 3.

Government Employment Guarantee, Labor supply and Firms' Reaction: evidence from the largest Public Workfare Program in the World

Sumit Agarwal *(Georgetown University)*, **Shashwat Alok** *(Indian School of Business)*, **Yakshup Chopra** *(Indian School of Business)* and **Prasanna Tantri** *(Indian School of Business)*

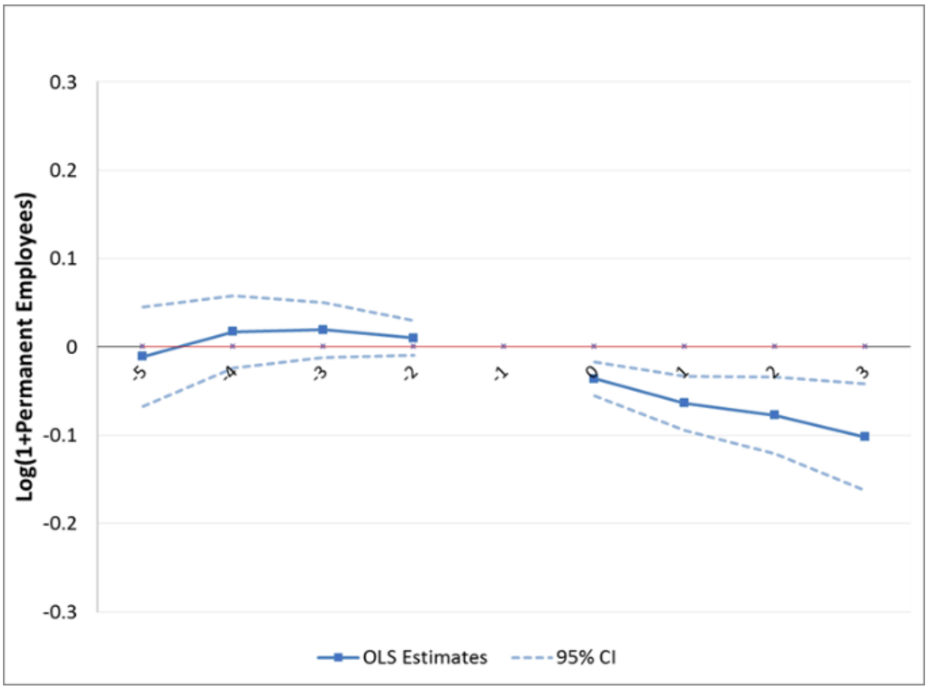
Governments all over the world engage in activist fiscal policies. This study examines the impact of the Indian government's employment guarantee program – the largest public workfare program in the world – on labour and firm behaviour, using establishment-level employment and operating data. The program, Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA), aimed to provide at least 100 days of employment in a financial year to the rural unemployed and underemployed by engaging them in building rural infrastructure. To make the program labour intensive, it was set that at least 70% of the expenditure should be on wages alone.

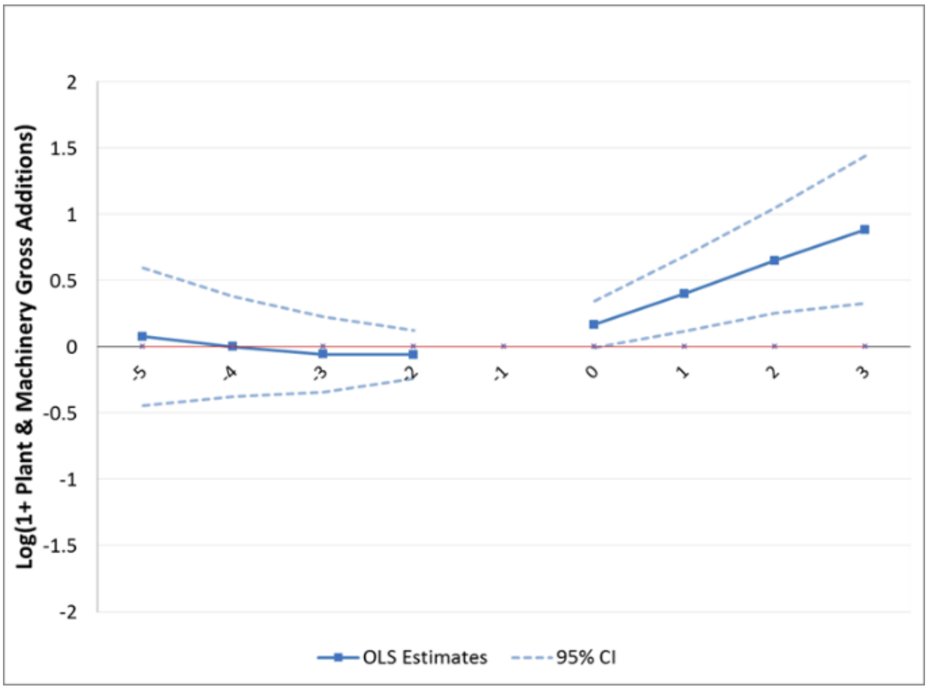
The authors examine how the program impacts the labour supply of both temporary and permanent workforce in the private sector. Second, they look into how does the labour supply shock impact firm's capital spending. Further, they analyze if the impact of MNREGA on firms is a function of firm-specific factors, such as access to finance, ex-ante wages, labour productivity, cash flow volatility as well as the labour laws regime in the state where the firm operates. Third, the authors study how the changes in labour supply and demand for capital impacts firm productivity.

Based on their study, the authors find that MNREGA crowds out labour supply to factories. The number of permanent workers engaged in factories declined by 10 % due to this program. Thus faced with labour shortage, factories resort to mechanization. As a result the firms' operating profitability goes down, consistent with the idea that mechanization was not an optimal solution as it leads to an increase in the cost of production.

The paper shows that the workfare programme may impact the corporate sector by diverting productive workforce and thereby creating a labour shortage. This has the unintended result of hastening technology adoption by firms. While the paper shows the short term consequences of workfare programs on labour and firms, the analysis helps to point to the long run implications of such programs.

By providing relatively less demanding alternative work opportunity, workfare may reduce individuals' incentives to make effort towards skill accumulation thereby making them dependent on state-sponsored jobs forever. The authors say that this may adversely impact people's long-term welfare by hampering their ability to avoid poverty. Moreover, firms respond to the labour shortage created by such programs by investing in machinery which may further reduce the labour force's ability to get formal jobs. The sudden move towards mechanization results in a decline in firm productivity and earnings in the short-run. To the extent that mechanization leads to greater operational efficiency in the long-run, it may prove to be beneficial.





Overall, the study informs the policy debate on the impact of public workfare programs and highlights that such schemes may have unintended spill over effects on private establishments.

Is the Chinese Anti-Corruption Campaign Effective?

John Griffin *(University of Texas)*, **Clark Liu** *(Tsinghua University)*
and **Tao Shu** *(University of Georgia)*

Corruption is widely known to be costly for an economy, and it is generally agreed that China has a problem with corruption. To maintain the rapid growth of the Chinese economy, it is essential to reduce corruption. China's leadership has recognized the issue and taken action in the form of China's anti-corruption campaign that started with the "Eight-point Regulation" introduced in December 2012, and has led to investigations of over 200,000 people. The campaign has spread to the corporate world, investigated the top executives of over 150 Chinese firms accounting for over 18% of stock market capitalization. This paper looks at three issues: Whether the corporate campaign is targeting more corrupt firms? Whether the campaign contain political favouritism? And, does the campaign reduce overall corporate corruption?

After searching a broad set of sources, the authors constructed a sample of Chinese listed firms where the CEOs or other top executives were investigated during the anti-corruption campaign. Of the sample of 150 listed firms, 130 (or 87%) are state-owned.

The paper finds that investigated firms indeed have higher values of corruption indicators. Specifically, investigated firms, compared to similar non-investigated firms, have worse corporate governance, more misaligned CEO incentives, more related-party transactions, greater inefficiencies, and more corruption-related postings on a large online investor forum. These results suggest that the anti-corruption campaign is indeed targeting more corrupt firms.

The study finds that firms with general government connections, as identified by managers' past government working experience, are more likely to be investigated. This result is consistent with the campaign targeting firms benefiting from their political connections. There is also some evidence that firms connected to non-investigated political leaders are less likely to be investigated, while firms connected to investigated political leaders are more likely to be investigated. These results suggest that the targeting could involve political favouritism.

For Chinese firms as a whole, there is a large decrease in the highly visible business entertainment spending in 2013-15, but there is not much evidence that less conspicuous but important indicators of self-dealing show significant improvement. Additionally, like the pre-campaign-era, earnings management in 2013-15 is rampant with an abnormally large number of firms exhibiting small positive earnings, but abnormally few firms having negative earnings. The paper finds this lack of improvement is seen for both state-owned enterprises and private firms, and after alternative benchmarking for Hong Kong firms.

The paper concludes by noting that the reforms may be a step in the right direction but may not achieve the broader reduction in corruption or improvement in corporate culture. Given the historical experience from other anti-corruption campaigns it seems that an extensive commitment to reform of the legal, institutional, and media environment in China may be necessary to achieve a significant reduction in corruption in the country.

Looking under the hood: Quantitative vs qualitative inputs to analyst forecasts of fundamental risk

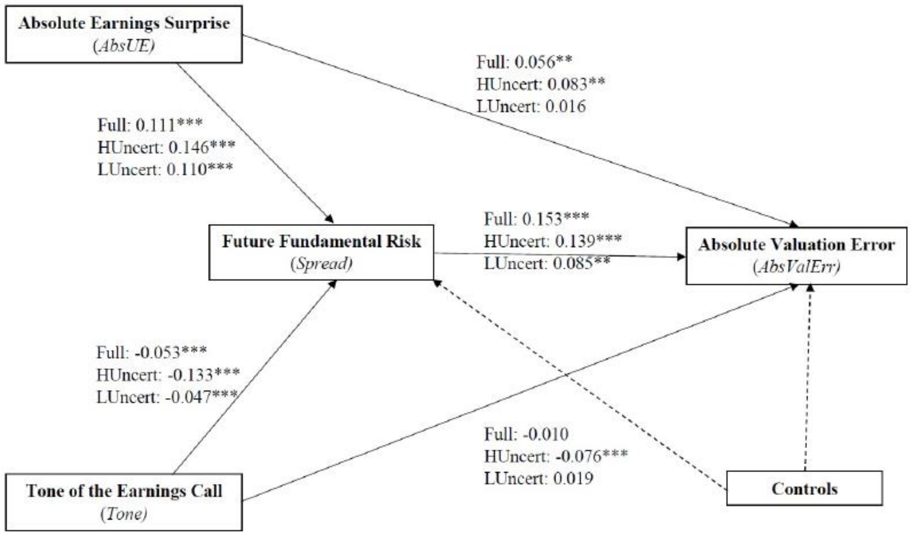
Khrystyna Bochkay *(University of Miami)* and **Peter Joos** *(INSEAD)*

Analysts are a critical source of information in financial markets for investors. Understanding how analysts process information about publicly listed companies to produce forecasts of firm fundamentals is therefore important to assess the role of analysts in financial markets.

In their paper **Looking under the hood: Quantitative vs qualitative inputs to analyst forecasts of fundamental risk,** *Khrystyna Bochkay and Peter Joos* study how sell-side analysts use both quantitative and qualitative information from earnings conference calls to forecast firm fundamental risk. The paper expands the literature on the complementary role of quantitative and qualitative information in capital markets by asking two questions on the forecasting process of sell-side analysts. First, they ask if both quantitative and qualitative information jointly matter for analyst forecasts of firm fundamental risk. Second, they ask how conditions of increased macro-uncertainty influence the relative roles of quantitative vs qualitative information for the analysts' process of risk forecasting.

To address these questions, they merge two datasets to construct a unique research setting. The first dataset consists of investment reports that contain scenario-based valuation forecasts, allowing the authors to compute analyst forecasts of firm fundamental risk. The second dataset is a comprehensive sample of earnings conference call transcripts.

Figure 2: Quantitative and Qualitative Information in Earnings Conference Calls, Fundamental Risk, and Valuation Error. Path Analysis.



This figure shows the standardized coefficients of the direct, indirect, and total effects between quantitative (*AbsUE*) and qualitative (*Tone*) variables in the earnings conference call and analysts' perceived valuation risk (*Spread*) and subsequent valuation error (*AbsValErr*). The analysis is performed using a structural equation model for the full sample (Full) and high and low macroeconomic uncertainty sub-samples (HUncert and LUncert). All variables are defined in Table A1. ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively, using the Sobel test (Sobel (1987)). Number of observations: 4,286.

The paper focuses on earnings conference calls since the active analyst participation in these calls and the follow-up forecast revisions suggest that analysts find information in conference calls useful: earnings conference calls are a major form of communication that firms use to supplement their regulatory filings, providing market participants with both quantitative and qualitative information about the firm's performance and financial position.

The authors' measure of the quantitative information component of calls gauges shocks to expected earnings, while their measure of the qualitative information component captures the tone of language in the conference call. Using these measures, they establish two main results. First, they find that both quantitative and qualitative information map into analyst forecasts of fundamental firm risk: analysts' perceptions of firm risk are lower (higher) when conference calls are more positive (negative) and absolute earnings surprise is small (large).

Second, the relative importance of qualitative information increases during periods of high macro-uncertainty and this increase improves the calibration of the risk forecasts. While the main results rely on a general measure of the *Tone* of the language during the earnings conference call, additional analyses find that both positive and negative language affects risk forecasts and that extreme language rather than moderate language results in differential risk perceptions.

Overall, the results of the study are robust to alternative empirical specifications and increase the understanding of the mysterious "black box" that is the analyst forecasting process.

The Role of Big 4 Auditors in the Global Primary Market: Does audit Quality Matter Most When Investors Are Protected Least?

Inder Khurana *(University of Missouri)*, **Chenkai Ni** *(Fudan University)*, and **Charles Shi** *(National University of Singapore)*

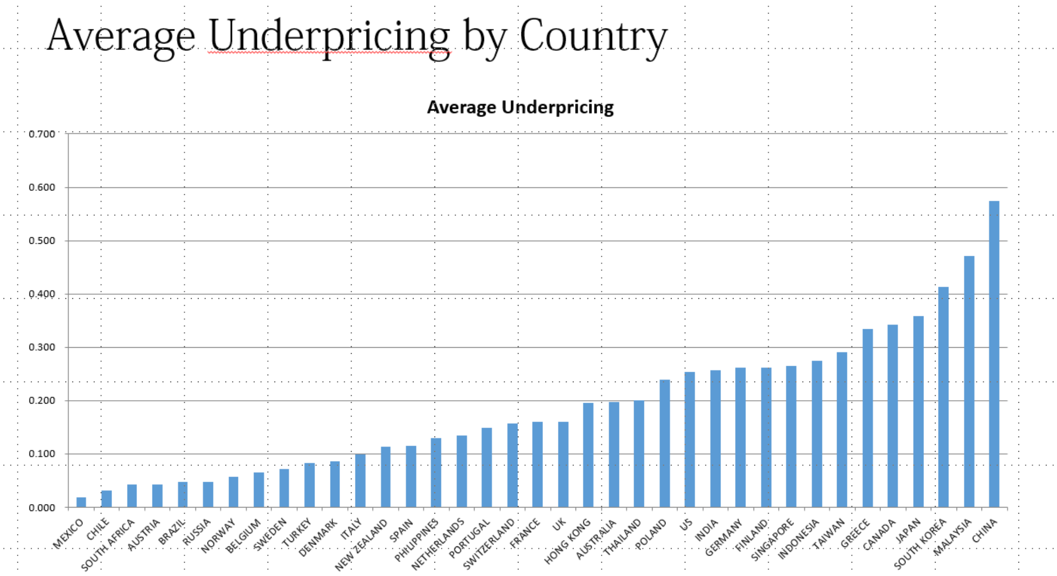
This study examines the effect of the certification role of the Big 4 auditors on initial public offering (IPO) with regard to underpricing in the global primary market. The authors investigate whether IPOs audited by more reputable global auditors (Big 4) show a lower level of underpricing than those audited by local auditors. They further look into how the local investor protection milieu impacts the IPO investors' assessments of Big 4 audit quality in different countries and how such perceived audit quality affects IPO pricing worldwide.

The authors argue that they focus on the global IPO market for several reasons. Firstly, the so called "underpricing" phenomenon of IPO firms suggests that a huge amount of money is left on the table, resulting in significant costs of capital issuance for the IPO firm worldwide. Secondly, investor protection laws are generally much weaker in many parts of the world than in the US. If weak legal institutions increase managers' incentives to manipulate earnings, then information environment becomes worse in these countries, resulting in a greater effect of reputable auditors to reduce IPO underpricing.

Drawing on a comprehensive sample of over 14,000 IPOs in 37 countries from 1995 to 2014, the study finds that hiring a Big 4 auditor as opposed to a local auditor, on average, results in 4.2 % lower IPO underpricing after controlling for other determinants of underpricing. By distinguishing cross-country variation in legal institutions, the authors show that the Big 4 effect on IPO underpricing is concentrated in countries with weak investor protection regimes.

Overall, the authors' findings support the argument that global reputation concerns drive Big 4 auditors to provide a higher level of audit quality, and the differential audit quality matters most in the IPO markets where investors are protected least. One implication of the study's findings is that hiring a reputable auditor may offer a viable mechanism for entrepreneurs to privately compensate for institutional constraints, thereby lowering the cost of going public.

This study contributes to the IPO research on the role of information intermediaries. A common view derived from earlier research based mostly on the US market is that financial statements audited by the Big 4 firms are of higher quality and thereby reduce IPO underpricing. The authors extend the results to a broader setting through their study covering IPOs in 37 countries and further show that such an effect varies with institutions.



Importantly, the results of this study are also relevant to policy makers around the world with an interest in enforcement and government mechanism. The findings from the authors' research indicate that information quality is driven, at least in part, by auditor concerns for reputation protection as well as local institutional characteristics such as the investor protection environment.

This study suggest that the Big 4 firms' global networks can contribute to greater consistency in cross-border information quality, and therefore attempts by national regulators to hinder, limit, or at the extreme to dismantle these networks have the potential to harm the development of audit expertise as well as to impair information quality and efficiency of capital resource allocation.

The Financing of Local Government in China: Stimulus Loan Wanes and Shadow Banking Waxes

Zhuo Chen *(Tsinghua University)*, **Zhiguo He** *(University of Chicago Booth)*, and **Chun Liu** *(Tsinghua University)*

When the 2007/08 global financial crisis hit China's export-driven economy heavily, it announced an unprecedented four-trillion yuan fiscal plan, mainly on infrastructure projects, to stimulate the economy so that it can keep its usual above 9% annual growth rate. This paper links China's recent fast growing shadow banking activities after 2012 to this stimulus package in 2009, as local governments had to refinance their maturing stimulus loans several years later.

The local governments in China financed the stimulus plan in 2009 mainly through bank loans. When facing mounting rollover pressure from bank debt coming due after 2012, they resorted to non-bank debt financing. The paper shows that provinces with abnormally greater bank loan growth in 2009 are those that experienced more municipal corporate bonds issuance during 2012-1015, together with more evidence that links the stimulus loan rollovers of local governments to shadow banking activities (e.g., entrusted loans and wealth management products).

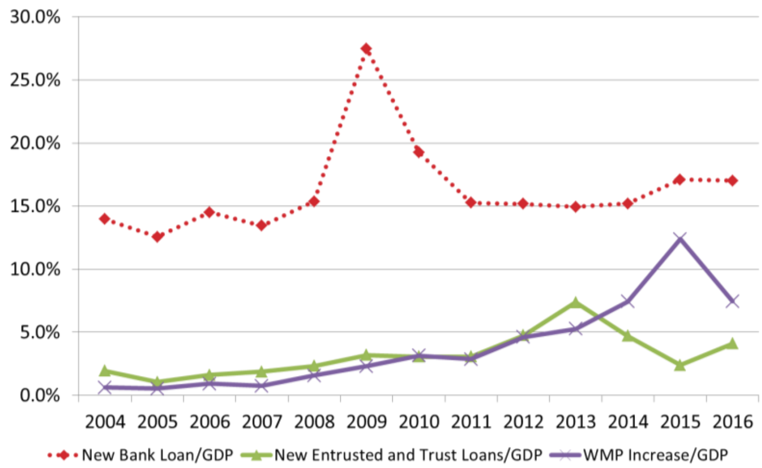


***Figure 1**: New Bank Loans and Shadow Banking Activities in China. Data source: PBOC and China Banking Wealth Management Registration System.*

Although both wealth management products and trust loans existed in China's financial markets before 2008, and increased slightly during the period of the 2009 stimulus plan, the authors' perspective helps understand why these shadow banking activities saw "barbarous growth" after 2012. As shown in the Figure 1, the new bank loan peaked at 2009 due to the four-trillion stimulus plan, but the growing speed of new Trust loans and WMPs dramatically picked up in 2012-2013. The average shadow banking activity (both Entrust/Trust loans and WMP) is about 12.2% of GDP, which more than doubles the corresponding shadow banking activities during 2009-2011 (about 5.9% of GDP). The mounting rollover pressure of local government finance vehicles (LGFVs) at that time to repay maturing bank loans taken in 2009 plays an important role in the surging shadow banking activities during 2012-2015.

China's local government debt exhibits systemic risk to the Chinese economy. It is more than the simple default risk as these debts are directly or indirectly backed by governments at different authority levels, and the majority of them are still held by banks which play a preponderant role in China's economy. The market participants all have "bailout" expectations, implying that either banks or local governments are bearing the loss ultimately.

Since 2015, the Ministry of Finance has started the "swap program," which allows provincial governments to issue Muni-bonds to replace their maturing "qualified" debt. The implicit understanding is that these Muni-bonds are ultimately backed by the central government, which seems to have plenty of resources to absorb the losses. This greatly reduces the uncertainty of the local governments' repayment ability and the default risk of municipal corporate bonds (MCB). However, the default risk of those "unqualified debt" still remains high.

The authors of this paper also argue that the four-trillion yuan package had the perhaps unintended consequence of modernizing China's financial market after 2012 (e.g., interest rate liberalization), and highlight the market forces behind the regulation changes in China in that period. This offers a fresh view on why regulators successfully suppressed MCB growth around 2010 but failed to do so after 2013. This is because LGFVs had to rollover their bank loans due around 2013 and 2014, a market force that demanded full respect and had to be released one way or another. Beijing was likely pondering the trade-off between putting these maturing bank loans back to the balance sheet of commercial banks, or finding support from non-bank (or even shadow banking) financing sources; and from the outcome it seems that the central government picked the latter.

Tracking Retail Investor Activity

Ekkehart Boehmer *(Singapore Management University)*,
Charles M. Jones *(Columbia Business School)* and **Xiaoyan Zhang** *(Purdue University)*

This interesting study seeks to find out whether retail investors are well informed or whether they make systematic, costly mistakes in their trading decisions. In another word, the authors are interested in knowing whether retail investors can predict future returns and whether they trade in the wrong direction. The answers are important to other market participants looking for useful signals about future price moves, to behavioural finance researchers, and to policy makers who need to decide if these investors need to be protected from themselves.

The authors say that many researchers have concluded that retail equity investors are generally uninformed and make systematic mistakes. However, some more recent evidence suggests otherwise. Unfortunately, most studies of retail order flow are based on proprietary datasets with relatively small subsets of overall retail order flow.

This paper provides an easy way to use recent, publicly available U.S. equity transactions data to identify retail purchases and sales. It exploits the fact that most retail order flow in U.S. equity markets is internalized or sold to wholesalers. As part of this routing process, retail orders are typically given a small fraction of a penny per share of price improvement relative to the national best bid or offer price, and this price improvement can be seen when the trade is reported to the consolidated tape.

The authors say that institutional orders almost never get this kind of price improvement, so it becomes possible to use sub-penny trade prices to identify a broad swath of marketable retail order flow. It is also easy to identify if the retail trader is buying or selling stock: transactions at prices that are just above a round penny are classified as retail sales, while those that are just below a round penny are retail buys. This methodology is used to characterize the trading behaviour and the information content of retail orders.

Panel A. Size groups

Oib measure Size groups	oibvol coef.	t-stat	interquartile	weekly return diff	oibtrd coef.	t-stat	interquartile	weekly return diff
small	0.0013	13.90	1.662	0.219%	0.0012	11.58	1.736	0.207%
medium	0.0007	9.18	1.323	0.087%	0.0004	5.63	1.346	0.059%
big	0.0003	3.68	0.892	0.026%	0.0002	2.52	0.929	0.019%

The authors analyze retail order flow for six years between January 2010 and December 2015. They find that retail investors are contrarian on average, and that they are informed. The cross-section of retail order imbalances in a given week predicts the cross-section returns over the next several weeks. The authors also examine whether aggregate retail order imbalance predicts future market returns, and fail to find any predictive relation. Thus, it appears that the identified retail investors have some stock-picking ability but no market timing skills.

The study finds that stocks with net buying by retail investors outperform stocks with negative imbalances; the magnitude is approximately 20 basis points over the following week, or 10% per year annualized for the smallest third of firms, or about half of that for the largest firms. This predictability extends out to about 12 weeks before dying off.

About ABFER

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- to connect globally prominent academic researchers, practitioners and public policy decision-makers on Asia-Pacific related financial and economic issues;
- to enhance the research capabilities and development of strong clusters of finance and economic research groups in academic institutions and other institutions in Singapore and Asia-Pacific.

This Digest summarizes selected papers presented in the ABFER's 5th Annual Conference which was held in May 2017 at Shangri-La Hotel, Singapore. More information on the conference can be found here.

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