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An Unintended Consequence of Historical Land Ceiling Legislation: Impact on Land Acquisition and Corporate Investment in India

Sarmistha Pal *(University of Surrey)* and **Zoya Saher** *(University of Surrey)*

Land acquisition for new factories and infrastructure has become a major economic and political issue in many densely populated countries seeking economic growth through industrialisation. India is among them. In India the tussle between farmers and industrialist/governments often becomes a politically explosive issue, sometimes leading to political unrest and violence.

The authors' conjecture is that India's land reforms legislations ultimately increased the transaction costs of buying land and the price premium firms pay when acquiring land. In reaction to higher land costs, firms find it optimal to invest less in land and capital. Transaction costs increase after India's land reforms because, by imposing land ceilings, the reforms redistribute land from a few large land owners to many small owners. A firm looking to acquire a plot of a given size has to negotiate and buy land from a larger number of owners after the reform than before. Each of these acquisitions is costly, and the larger their number, the larger are the transaction costs.

Pointing out that the land ceiling size is exogenous because it is based on the choice of crops produced before 1971 and then on soil fertility after that year, the authors assess the impact of land ceiling size on most fertile land and also average land ceilings size on corporate investment in fixed and total capital shares both at the state level (1960-85) and also at the firm level (1996-2012). Results provide support to their conjecture that restricted land ceiling size tends to significantly lower investment in fixed and total capital shares at the state-level, after controlling for various observable and unobservable factors helping to minimise the omitted variable bias of the estimates. These results seem to persist over the long run 1996-2012 in their firm-level panel data too, especially for the investment in total capital.

The authors check the robustness of their estimates and rule out that these results do not reflect the effects of labour militancy, lack of complementary physical infrastructure or the lack of implementation of the land ceiling legislations. Further analysis highlights that the adverse ceiling effect on capital investment, especially for fixed capital, tends to be more pertinent when firms are more land intensive.

The study also finds direct evidence supporting the mechanism behind its central result. In particular, the authors show that the size of household land holdings is smaller in states with more restrictive ceilings, thus leading to higher transaction costs of acquiring land for industries in these states. While the government commitment to land reforms in general or land ceilings in particular arises from the consideration of social justice, these results highlight an unintended consequence of land ceilings on corporate investment in the study's sample.

Ultimately, lower investment leads to lower economic growth. The authors say that while it is not possible to reverse the adverse effects of historical land reform in a land scarce economy, options for future policy development necessitate closer scrutiny at the local rather than at the national level.

Behavioral Bias in Haze: Evidence from Air Pollution and the Disposition Effect in China

Hong Zhang *(Tsinghua University)*, **Massimo Massa** *(INSEAD)*, **Jennifer Jie Li** *(INSEAD)* and **Jian Zhang** *(Hong Kong Baptist University)*

Environmental issues are important in a modern economy and air pollution is a serious challenge. While industrialisation and economic activities are often associated with severe pollution in developing countries, pollution is known to affect human health which could potentially reduce the well being and effectiveness of people participating in economic activities and thus the pace of economic development itself. The understanding of the relationship between the environment and economic activities is therefore crucial for policy makers and academic researchers to fully know the mutual influence between the two.

The authors say that inspired by the recent findings that air pollution is a major environmental risk to health and could significantly damage the function of the brain and reduce human cognitive skills, they examine if air pollution can intensify the cognitive bias observed in the financial markets.

Based on a proprietary dataset from a large mutual fund family in China, which has the complete trading information of over three-quarter million accounts covering more than 200 cities from 2007 to 2015, the study finds that air pollution significantly increases the disposition effect of investors.

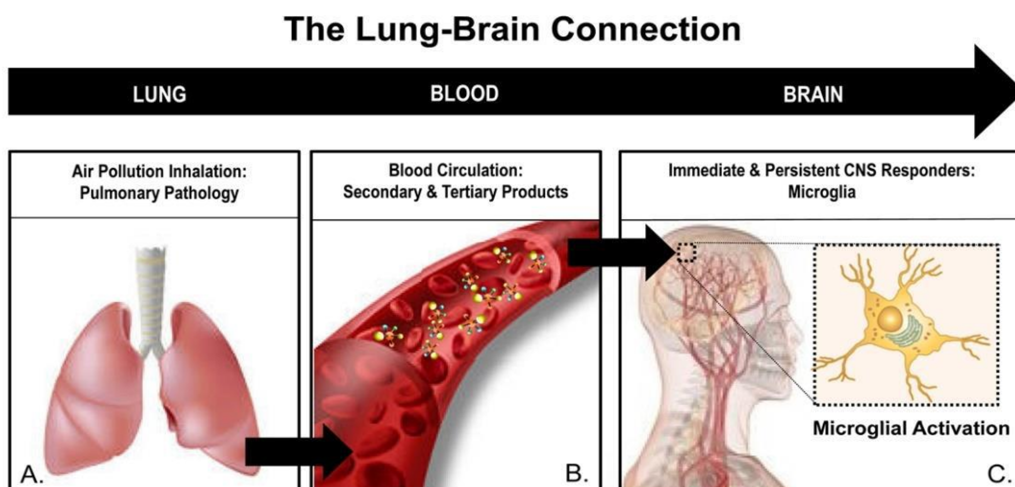
After collecting data on air quality index (AQI), the authors link it to one of the most important and robust cognitive bias reposted in finance literature – the disposition effect, or the tendency to sell winning assets while holding onto losers. Although its causes and consequences are still subject to debate, the effect is typically interpreted as one of the most prominent trading mistakes of investors originating from cognitive bias.

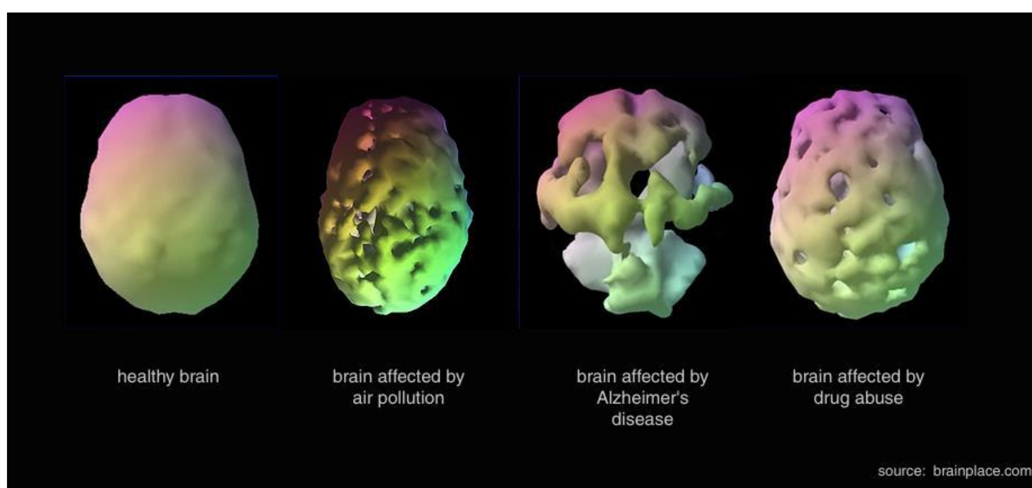
This paper examines two plausible exogenous variations in air quality. In the first quasi-experiment, the policy of the Chinese central government to provide free heating north of the Huai River in the winter months by burning coal which causes air pollution is found to have led to an increase in AQI across the river. The authors find that the behavioural bias jumps north of the river as an unintended consequence of the free heating policy. Further, this result is seen only in the heating season. In the second test, strong winds lead to vast dissipations of air pollution. In both tests, the authors find that exogenous variations in air quality lead to changes in behaviour bias. They say that these tests suggest that air pollution has a causal influence on the cognitive bias seen in the financial markets.

The authors say that the results of their study have important normative implications regarding the role the environment plays in developing countries like China. This study shows that air pollution may have severe indirect social costs associated with increased cognitive biases in financial markets. Hence the cost of air pollution could be much higher than recognised so far. This study thus calls for more attention and actions from the regulators and researchers to better protect the environment in the present day modern society.

Figure 1. Illustrations of Brain Damages from Science Blogs

The figure cites two blogs and their posted figures to demonstrate the influence of air pollution on human brains. The first blog (top figure), "Urban air pollution exposure may trigger toxic responses in brain cells and impact neurodegenerative disease pathways" (February 18, 2014)[1], explains the pivotal role microglia plays through which air pollution can immediately affect human brains: "Under normal conditions, microglia primarily serve as the defenders of the central nervous system…But microglia can be dangerous when they are exceptionally 'angry' and are known to leave behind significant bystander damage to neighboring cells. This adverse behavior may lead to the development of any number of neurodegenerative diseases, including Parkinson's disease, Alzheimer's disease, or Gulf War Illness." The second blog (with the figure below), "Can air pollution cause permanent brain damage?" (June 3, 2016)[2], compares the SPECT scan of a brain of a person exposed to air pollution to those of Alzheimer's disease or drug abuse.





1 https://medicalxpress.com/news/2014-02-urban-air-pollution-exposure-trigger.html
2 https://u-earthblog.com/2016/06/03/can-air-pollution-cause-permanent-brain-damage/

Disaggregate Sales and Stock Returns

Sumit Agarwal *(Georgetown University)*, **Wenlan Qian** *(National University of Singapore)*
and **Xin Zou** *(Hong Kong Baptist University)*

In this paper, the authors study whether disaggregated consumer spending bears return predictability implications. Investors have long recognized the importance of disaggregated sales information in understanding stock returns and recently began to exploit such information in their trading strategy. However, little research has investigated the return predictability implications of such information due to data limitations. The study exploits a unique panel dataset of account level credit card transactions in 2003 obtained from a large U.S. bank, and directly measure consumer demand by confirmed credit card purchases by end customers.

The authors propose two novel economic reasons why disaggregated consumer spending contains value-relevant information that is incremental to publicly released accounting information. First, direct customer spending is a precise measure of customer demand. Consider the following example. By the end of February 2013, Leap Wireless International Inc., a prepaid carrier contracted to purchase iPhones from Apple, warned its investors that customer demand for iPhones fell significantly short of its pre-committed level, leading to an expected loss. In this instance, the recorded revenue on Apple's book, which includes the committed iPhone purchase from Leap, fails to reflect the weak sales at Leap and thus exaggerates the true customer interest.

Second the customer composition and characteristics is relevant in understanding the customer demand sustainability. Specifically, conditioning on the same level of aggregate sales, these

firms shall expect a more persistent revenue growth relative to the ones with weaker purchase-capacity customers or a concentrated clientele. The aggregate sales from the firm's financial report contain no information on their customer clientele and characteristics.

The study first shows that the aggregated credit card spending during a given fiscal quarter strongly correlates with a firm's cash flows (sales and net income) in the same period, which provides a validation of the authors' spending measure. More important, the authors find a significantly positive relation between the adjusted credit card spending within a fiscal quarter and the firm's subsequent cumulative abnormal returns (CARs), after controlling for earnings and sales surprises. Specifically, the authors find that one inter-quintile increase in the adjusted spending generates more than 1 percentage point increase in the 60-day post-announcement CAR, and around 0.3 percentage point increase in the 3-day announcement CAR.

Consistent with the authors' hypothesis, investigation into customer characteristics shows that the effect of the adjusted spending concentrates among firms with more purchase from high spending capacity customers, or firms with a more diversified consumer base. The study further shows that the return predictability of adjusted credit card spending is driven by consumer oriented firms, to whom such direct purchase is more relevant. The ability of spending surprise to predict future earnings and sales surprises further supports the idea that direct customer purchase conveys value-relevant information (regarding the firm's future cash flows).

Taken together, findings in the study provide novel evidence that direct customer spending serves as a valuable source of information to extract a firm's overall consumer demand. The authors highlight the additional predictive power of customer adjusted spending, above and beyond the accounting performance measure. Investors and analysts could exert effort to discover and utilize such information (either on actual spending or on consumer composition), which could be helpful in investment decision making.

Drivers of Effort: Evidence from Employee Absenteeism

Morten Bennedsen *(INSEAD)*, **Margarita Tsoutsoura** *(University of Chicago)*
and **Daniel Wolfenzon** *(Columbia University)*

Based on data from Denmark, this study analyzes the determinants of employee effort. The authors use detailed information on absent spells of all employees in 4,140 firms in Denmark as a proxy for effort in specifications in which they control for important determinants of absenteeism like age, gender and health status. The authors say that this measure has the advantage that it can be consistently computed for employees in all firms. In addition to being a proxy for effort, workplace absenteeism is important in its own right since it is the single most influential determinant of labour supply.

The study first looks at the role played by two broad set of explanations. On the one hand, firms can affect the effort of its existing labour force with its compensation, promotion, and dismissal policies and by the type of environment that it offers its workers. On the other hand, firms can pursue policies that seek to attract employees who are intrinsically highly motivated.

Using movers, the authors decompose absent days into an individual component (e.g., motivation, work ethic) and a firm component (e.g., incentives, corporate culture). They find the firm component to be significant in explaining difference in absenteeism across firms. Moreover, they find the firm component to be correlated with family firm status with family firms having a decrease in absenteeism.

The study finds that family firms have a more negative firm fixed effect than non-family firms, suggesting that they provide incentives and / or an environment that promotes less worker absenteeism. Consistent with the role of incentives, the authors also find that firms with more aggressive incentives exhibits more negative firm fixed effects. Also, consistent with the role of monitoring, the authors find that single-owned firms have more negative firm fixed effects.

Interestingly, the study does not find any effect of product market competition for the average employee. However, when the authors estimated the firm fixed effects using subsamples of employees by seniority, they found a strong disciplining role of compensation for managers but not for lower level workers. In addition, the sensitivity of wage increases and promotion continue to be important for lower level employees but not for managers. Importantly, the effect of family control is concentrated in lower level employees. This paper contributes to the literature by showing the positive impact of family ownership on employee effort provision.

Overall, this study contributes both to the academic literature and policy debate on how to reduce absenteeism in the workplace. Absenteeism is an economically important factor on its own.

The European Commission estimated that work related ill health can cost European Union member states anything from 2.6% to 3.8% of their GDP. This has lead to research on how to cut absenteeism in firms where the focus has been on incentives and specifically how to design and distribute the burden of sick leave pay on employees, employers and governments.

Habits and Leverage

Tano Santos *(Columbia University)* and **Pietro Veronesi** *(University of Chicago)*

The global financial crisis has led to much research into the understanding of the dynamics of aggregate leverage and its impact on asset prices and economic growth. Recent empirical and theoretical research has produced a variety of results that should lead to a reconsideration of existing frictionless models.

In this paper the authors posit an economy populated with agents whose preferences feature external habits. Specifically, agents' utilities are determined by the distance between their own level of consumption and the level of aggregate endowment, appropriately scaled; roughly agents care about consumption inequality. How much agents care about this distance varies across agents and over the business cycle.

The authors' general equilibrium model with heterogeneous agents, habits, and countercyclical uncertainty, is able to tie together several stylized facts related to leverage, consumption, and asset prices. For instance, the model predicts that aggregate leverage should be procyclical, it should correlate with high valuation ratios, low volatility, and with a "consumption boom" of levered agents. Agents actively trade in risky assets, moreover, and de-lever in bad times by "fire selling" their risky positions as their wealth decline and debt to wealth increase.

An important message of the paper is to re-emphasize the perhaps obvious point that leverage is an endogenous quantity and thus that some caution must be taken when making causal statements about the impact of leverage on other economic quantities. For instance, in the authors' model agents who increased leverage during good times will suffer low consumption growth in bad times. There is nothing inefficient in this allocation: Those agents who decide to take on higher leverage are implicitly providing insurance to the other agents who instead would like to buy safe assets.

Similarly, the increase in leverage in good times is the result of an optimal, efficient risk-sharing allocation, and should predict low future asset pricing returns. Once again, it is not high leverage that implies that future return are low (because it increases the chance of a financial crisis, for instance),

but rather the fact that lower risk premia due to subsided discount rate shocks induce agents with higher risk bearing capacity to take higher leverage to achieve their optimal consumption profile.

The authors say that admittedly their model is simple in that it only has one state variable and all quantities are driven by only one shock. Their simplifying assumptions thus imply that all quantities move in lock-step and there is a likely unrealistic perfect (positive or negative) correlation between leverage, prices, volatility, expected return, consumption, and so on. These simplifying assumptions allow the authors to obtain closed form solutions for all quantities in the model, and thus obtain a better understanding of the various economic forces that affect leverage and asset prices. The authors say that future research may attempt to generalize their simple setting to obtain more realistic dynamics.

Modelling Yields at the Lower Bound through Regime Shifts

Peter Hördahl *(Bank for International Settlements)* and **Oreste Tristani** *(European Central Bank)*

Since the global financial crisis of 2008-09, short-term nominal interest rates have reached levels close to their lower bound (LB) in many advanced economies. Over time, some lessons have been learned from this experience. One is that once the short rate reaches the LB, it is very likely that it will remain at the LB for a prolonged period of time. In other words, LB episodes are much more persistent than regular low-rate episodes that follow normal recessions. Moreover, the experience from the only major economy to have exited the LB – the United States – suggests that the pace of policy rate normalization is very slow, and that longer term yields therefore tend to remain low for long.

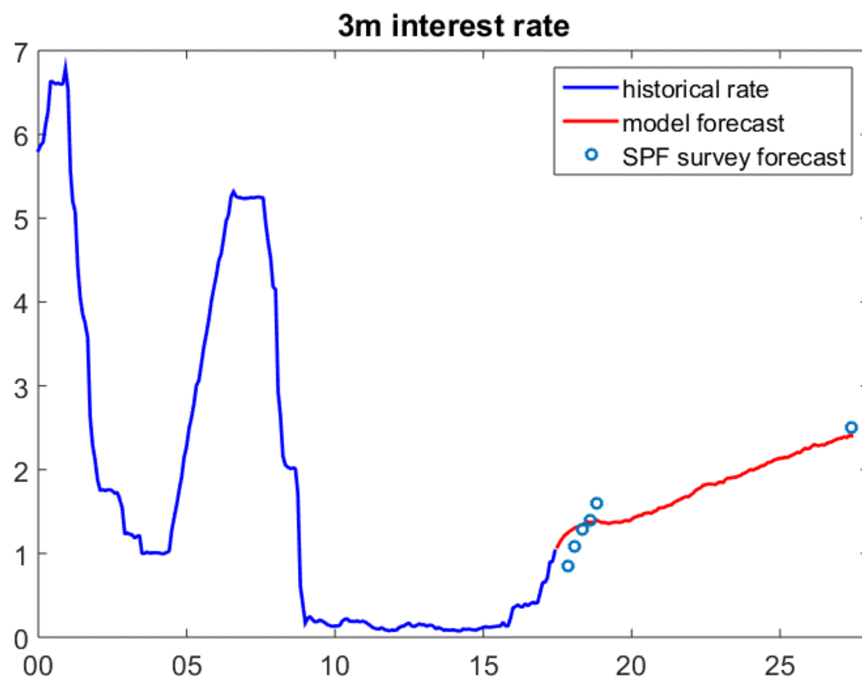
The authors show that these features of interest rate and bond yield data at, and away from, the lower bound can be captured well by a regime-switching term structure model. Yield dynamics are explicitly described as a function of two possible policy regimes: a normal regime and a LB regime. Switches from one regime to the other can occur stochastically and their probabilities are state-dependent. Specifically, the probability to switch to the LB regime is higher the lower the short term rate is.

Applying the model to the US term structure using yield factors suggests that the US economy was in the LB regime with a high probability from October 2008 to late 2015, and started moving back towards the normal regime thereafter. At the end of the estimation sample in April 2017, the probability of being in the normal regime had returned to close to 100%. The authors show that nonetheless, forecasts beyond April 2017 indicate that the LB regime continues exerting influence, pulling expected future yields downwards.

The study shows that regime-switching probabilities also have an effect on the decomposition of yields into expectations and risk premia components. At any point in time, risk premia do not only compensate investors for state risk, but also regime-switch risk. Moreover, the overall level of term premia from the regime switching model are typically higher than in standard models, suggesting that the expected average level of future short-term interest rates is correspondingly lower.

The authors also compare their results to those of a shadow rate model. The key difference between the two approaches emerges at the end of the sample.

The regime-switching model forecasts a markedly slower pace of normalization of interest rates than the shadow rate model. Expected short-term interest rates are forecasted to reach around 3.7% in late 2018 in the authors' version of the shadow rate model, while in the regime-switching model they remain well below 2% during this period. This feature of the regime switching model also helps capture persistently lower long-term yields. In particular, the possibility that the economy might switch back to the lower bound regime keeps current and future expected interest rates low. Low interest rates, in turn, imply that the probability to switch from the normal to the lower bound remains elevated, thereby contributing to keeping the level of interest rates and yields low.



Politicizing Consumer Credit

Pat Akey *(University of Toronto)*, **Rawley Z. Heimer** *(Cleveland Fed)*
and **Stefan Lewellen** *(London Business School)*

This paper uses shocks to the political standing of U.S. Senators and a proprietary database of Americans' credit histories to examine the relationship between political power and consumer access to credit in the United States. The authors say that unlike the existing literature, they find that increases in political power are associated with reductions in consumer credit access in a politician's home state relative to other, unaffected states.

These reductions in credit supply are also more pronounced in areas with few politically active citizens and many politically connected banks. In contrast, the authors do not find any significant relationships between political power and household credit demand. Collectively, these results challenge the conventional wisdom that political influence is used to expand consumer credit supply.

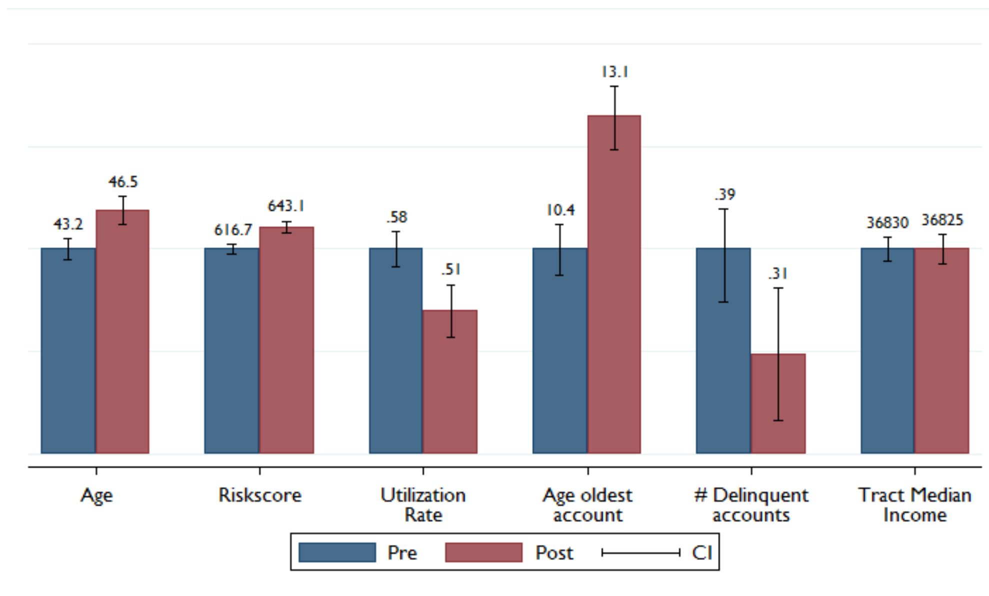
The authors' primary tests examine three aspects of consumer credit: access to credit (as measured by the ratio of new accounts to new applications), the demand for credit (as measured by new credit applications), and total credit provision (the number of new credit accounts opened by a consumer). Most of the tests also focus on "disadvantaged" borrowers, since these borrowers are more likely to be affected by any material change in consumer credit markets, whether politically motivated or otherwise.

This study finds that increases in political power decreases the supply of consumer credit in the politician's home state by an average of 4.5 to 8 percent relative to credit supply in unaffected states. Moreover, these effects are primarily concentrated within segments of borrowers that tend to be credit constrained. The authors say that these results are robust to increasingly stringent geographic fixed effects as well as individual fixed effects, which account for unobserved heterogeneity in borrower quality across political constituencies. These results also hold after controlling for consumers' credit scores at the time of their applications.

The authors say that their results are consistent with a political protection hypothesis whereby banks tighten screening standards on disadvantaged borrowers once they are protected by a powerful home-state Senator. Consistent with this explanation, the authors say that they find that the largest reductions in credit supply occur in Census tracts that are most likely to having lending caused by regulatory guidelines in the Community Reinvestment Act.

The study also finds that the largest contractions in credit to disadvantaged borrowers occur in areas that are politically unengaged, while the effects are amplified in regions with a large proportion of politically connected banks. Additionally, the study finds that the applicants who get credit

following political power shocks tend to be of higher observable credit quality than the applicants who get credit prior to political power shocks.



Finally, the authors find that banks become more profitable following these shocks. Collectively, these results suggest that increased political power causes lenders to tighten screening standards in a manner that reduces credit provision to disadvantaged borrowers.

Why do Publicly Listed Firms Evade Taxes? Evidence from China

Travis Chow *(SMU)*, **Bin Ke** *(NUS)*, **Hongqi Yuan** *(FUDAN)* and **Yao Zhang** *(TONGJI)*

We know that tax avoidance is a worldwide phenomenon – it is prevalent in both poor and rich countries. This paper seeks to find out that why do Chinese publicly companies evade taxes. The authors focus on China because publicly listed Chinese firms have been mandated to disclose all detected tax evasions via tax adjustments in their annual reports since 2002.

Unlike earlier research which focuses on corporate income tax avoidance only, the authors consider both income tax and non-income tax evasion together. Considering non-income tax evasion is important because in many countries such as China, non-income taxes are a significant portion of the total corporate tax paid. The study shows that about 60% of the detected corporate tax evasions in China are non-income tax related. Hence, omitting non-income tax evasions would significantly underestimate the degree of corporate tax evasion in the country.

To deal with the problem of being able to observe corporate tax evasion only partially, the authors use a bivariate probit model to simultaneously model the determinants of corporate tax evasion and the determinants of corporate tax evasion detection conditional on the occurrence of a tax evasion.

This study presents some interesting results. A finding is that SOEs are more likely to evade taxes than non-SOEs. Also, the presence of a big audit firm is associated with a lower likelihood of corporate tax evasion. At the same time, SOEs are less likely to be detected for tax evasion than non-SOEs. Also corporate tax evasion is more likely to be detected when a firm employs a big audit firm. The authors also find that even if caught for tax evasion, SOEs are subject to smaller penalties than non-SOEs.

While it appears that the results of this study are inconsistent with two earlier studies which found SOEs to be less likely to avoid taxes than non-SOEs, the authors note that it is important to recognize the key difference: the definition of tax avoidance. Specifically, the authors focus on tax evasion, an illegal and the most aggressive form of tax avoidance, but the two previous studies use the effective tax rate (ETR) as a proxy for general, illegal tax avoidance. While ETR can capture legal tax avoidance, it is less clear from prior research whether it can capture most egregious forms of tax avoidance. The authors find that, after restricting to income tax evasion, their tax evasion measure is not negatively correlated with ETR, suggesting that the conventional ETR may not be a reliable proxy for corporate tax evasion.

Panel B. Distribution of detected tax evasions by tax type

Tax type	Percent of tax evasion firm-years*
Enterprise Income Tax	41.41
Value Added Tax	18.35
Business Tax	13.65
Housing Property Tax	12.00
Urban Land Use Tax	10.59
Tax for Maintaining and Building Cities	6.82
Stamp Tax	6.82
Education Supplementary Tax	6.12
Land Value Added Tax	3.76
Vehicle Usage Tax	1.41
Tariff	1.18
Tax Rebate	0.47
Consumption Tax	0.23
Others	22.59

*Do not add up to 100% because a tax evasion firm year may involves more than one type of taxes evaded.

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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