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CONTENTS

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Corruption, taxes and compliance

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Abstract

capacity to raise revenue, building on the existing empirical literature using new and more disaggregated data. We use a comprehensive dataset for 147 countries spanning 1995-2014, compiled by the International Monetary Fund. The study finds that consistent with the existing literature corruption is negatively associated with overall tax revenue, and most of its components. This relationship is predominantly influenced by the way corruption interacts with tax compliance. The establishment of large taxpayer offices within revenue administrations

Herzfeld, 2005); Second, corruption fosters the development of the informal sector, and therefore erodes the potential tax base (Schneider, 2005; Schneider & Denste, 2000).

Many papers have studied the direct influence of corruption on revenue performance (see Table 1), and most find a negative relationship between corruption and tax revenue. Sen Gupta (2007) finds that, among other factors (such as per capita GDP, the ratio of agriculture to GDP, trade openness and foreign aid), corruption is a . More recently, Besley and Persson (2014) discuss why developing countries tax so little, examining considerations such as the economic structure of these economies, political factors (including strength of institutions, fragmented politics, and a lack of transparency due to weak news media), and sociological and cultural influences (such as a weak sense of national identity and a poor norm for compliance). The authors find a strong negative correlation between corruption and the tax revenue-to-GDP ratio. They attribute this correlation to corrupt systems of government that face resistance to increasing taxes.

However, due to data limitations, few empirical studies have considered the effect of corruption on different tax types. These studies suggest that indirect taxes requiring frequent interactions betwee

Table 1: Literature Summary of Panel Estimation Techniques for the Impact of Corruption on Public Revenue

	Period	Countries	Corruption Indices	Estimation method	Dependent Variables*	Corruption Impact	Control Variables	Instruments for Corruption
Ghura (2002)	1985 1996	39 SSA countries	International Country Risk Guide (ICRG)	Feasible instrumental				

Much of the negative correlation between tax revenue and corruption comes from the effect corruption has on tax compliance, which constitutes the second focus of this article. A revenue administration reform that aims at compliance improvements is the establishment of specialised taxpayer offices, focusing on taxpayers with different characteristics and different risks to revenue. Such segmentation, primarily but not only by size, enables the distinct compliance risks various types of taxpayers pose to be addressed most effectively. For example, IMF (2015) lists effective monitoring of large taxpayers as one way to address compliance deficits. This specialisation may be reinforced by segmentation into economic sector to improve knowledge of personnel on sector-specific issues (e.g., for extractive industries, financial institutions, or telecommunications companies). By building specialised tax offices with the specialist skills to service distinct taxpayer segments, compliance and service can be enhanced, perceptions of corruption reduced and tax yield raised. Focusing on the largest taxpayers can be an important signal to the taxpaying public of the

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Administration Gap Program (RA-GAP) and the Revenue Administration Fiscal Information Tool (RA-FIT).[8] The RA-GAP program has been applied to 23 countries to evaluate the difference between potential and actual collection of VAT between 2003 and 2013. RA-FIT is a web-based data gathering tool used to establish

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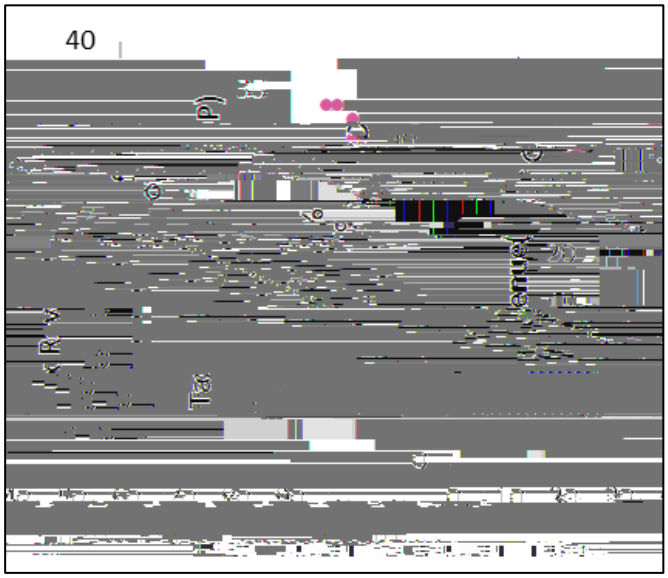
Transparency International Corruption index (Figure 1),[9] which implies that increased corruption is associated with lower levels of the tax-to-GDP ratio.

A disaggregation of data into individual income and corporate income taxes shows that the former is more strongly negatively correlated with corruption (Figure 2, Panels A and B). Large corporate enterprises often fall under the supervision of LTOs and are part of the formal sector, in contrast to smaller enterprises, which could partly explain this result. Furthermore, the scope for discretion tends to be more pronounced in the case of personal income tax (Besley & Persson, 2014). For individual income tax, the perception of corruption lowers the willingness of individual taxpayers to comply fully with tax laws because of the perception that their taxes will be misused by the authorities.

Figure 1: Total Tax Revenue (1995-2014, period average)



Sources: Transparency International, IMF WoRLD Database.

Panel C in Figure 2 shows a negative correlation between corruption and social security contributions. This is likely attributable to a characteristic of the informal sector in many countries, leading individuals and small and medium-sized enterprises to not meet

of the development level, the size of the tax base, the degree of openness, and the macroeconomic environment. and

negative and significant. The estimated coefficients are significant at least at the 5 per cent level, indicating that an increase of one standard deviation (SD) in corruption which corresponds to

Table 2: The Effect of Corruption on Tax Revenue

VARIABLES	IV (All Countries)		IV Advanced Economies (AEs)	
TI Corruption Perception Index (CPI)	**-0.1246*** (0.000)**		**-0.2175*** (0.023)**	
World Bank Control of Corruption Index (CCI)		**-0.1218*** (0.009)**		**-0.1664*** (0.022)**
CPI*AEs Dummy			**-0.7051*** (-0.203)**	
CCI*AEs Dummy				**-0.1921*** (0.072)**
AE Dummy			**1.2848*** (0.411)**	**0.2395** (0.109)**
Trade Openness	-0.0010	0.0014	0.0257**	0.0144**
	(0.005)	(0.005)	(0.010)	(0.007)
Inflation	0.0163***	0.0156***	0.0054	0.0084**
	(0.003)	(0.003)	(0.006)	(0.004)
Share of Agriculture	-0.1548***	-0.1035***	0.2041*	0.1021
	(0.034)	(0.033)	(0.107)	(0.076)
PPPPC	0.3398***	0.3589***	-0.0009	0.1733*
	(0.033)	(0.032)	(0.141)	(0.089)
PPPPC^2	-0.0220***	-0.0226***	-0.0007	-0.0108*
	(0.002)	(0.002)	(0.009)	(0.006)
Constant	-0.7247***	-1.1921***	0.8267	-0.4796
	(0.121)	(0.134)	(0.544)	(0.350)
Observations	1,934	1,934	1,934	1,934
Cragg-Donald	94.50	106.3	3.877	2.536

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

5.2.3 Tax components

Next, we turn to the relationship between corruption and the components of tax revenue. We split overall tax revenue into personal and corporate income tax, social security, property tax, taxes on domestic goods and services, and international trade taxes.

The impact of an institution on the dependent variable is then compared across countries with similar propensity scores.

Propensity scores are estimated with a Probit model, using a set of independent variables that are close to those in the previous section 5.1 model a dummy variable for the state of development, the share of agriculture, real per capita GDP, openness, and population as well as a variable for time. Both the general income category (AE, EM or LIDC), as well as the income level within these groups impacts the likelihood of establishment of institutions, specifically LTOs and ACAs. For example, many of the poorest LIDCs share the characteristic of below-average LIDC tax ratios and higher levels of perceived corruption. All controls, except for population, are significant in explaining the likelihood of establishment of these institutions. In an expanded baseline, we add CPI inflation, latitude, a dummy variable for oil exporters, total tax revenue as a share to GDP, and the ratio of external debt to GDP. The latter two controls in particular are likely to influence decisions to increase efforts to mobilise revenue or reduce corruption for economic and fiscal stabilisation purposes.

Once the propensity scores are estimated, the observations are matched with three different matching estimators Stratification, Kernel, and local linear regression matching. We enforce common support for the estimation, i.e., treatment observations with propensity scores higher *r* than the highest *t* propensity score in the non-treated pool are left unmatched.[13]

The average treatment effect (ATE) the impact from the establishment of the units on variables of interest, compared to countries without the units is analysed based on the identified matches. We use a difference-in-difference approach specified as follows:

$$ATE = E(\Delta_{t+x} - \Delta_{t-x} \mid T=1) = E((Y_{t+x}^{T=1} - Y_{t+x}^{T=0}) - (Y_{t-x}^{T=1} - Y_{t-x}^{T=0}) \mid T=1$$
$$= E(Y_{t+x}^{T=1} - Y_{t-x}^{T=1} \mid T=1) - (Y_{t+x}^{T=0} - Y_{t-x}^{T=0} \mid T=1) \quad (2)$$

where $T = 1$ if an institution is established, and $T = 0$ otherwise. The first term on the lower right hand side refers to the differences in outcomes before (or at) and after the treatment for the treated group. The second term uses the differences in outcomes for the control group to eliminate the bias. This specification eliminates the bias arising from common es the

6.2 Results

The PSM baseline results are shown in Table 4, with the dependent variables specified as follows: (i) for corruption we use the change in the Corruption Perception Index three years after and one year before establishment of an institution; (ii) for revenue the difference between tax revenue two years after and the year of establishment is used.[14] In the baseline, treatment (establishment) is noted as one occurrence only, and all years after the establishment year are dropped. All years before establishment are kept, except for three (for corruption) or two (for revenue) years before the year of establishment to avoid an overlap in the dependent variable.

Column 1 of Table 4 shows that LTOs have a statistically significant impact on the perception of corruption (significance levels are based on the bootstrap *T*-statistics).[15] This impact is negative, with an average treatment effect (ATE) of about -3; i.e., the perception of corruption significantly declines (or increases significantly less) during the three years after the establishment of the LTO compared to other countries. On the

Table 5: Impact of LTOs on Tax Revenue – Robustness

Notes: IMF estimates, *** significance at the 1 per

7. POLICY CONCLUSIONS

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