IGC 10 years
International Growth Centre

Taxation: A summary of IGC research

Highlights of the IGC's research over the past 10 years

Moussa Saab

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Effective taxation systems are essential for enabling governments, at all levels, to generate the revenues needed to finance the services, infrastructure, and investment necessary to drive economic growth. Despite their importance, however, tax systems are often a neglected element of economic development policy. Developing countries typically have low tax-to-GDP ratios of 10% to 15%, compared to ratios around 40% in more developed countries. **IGC evidence** also suggests that lower-middle income countries - due to several economic, administrative and political characteristics – collect, on average, less of their tax potential when compared to upper-middle and high income countries.

In many developing countries, the tax base is narrow, there is a large informal sector that is hard to monitor and tax, and widespread tax evasion limits the ability of the public sector to finance its activities. In these settings, improving tax compliance and enhancing long-run fiscal capacity are critical to improving governance and public services, and ultimately will contribute to a stronger social contract

The IGC works closely with its partner governments to promote effective tax policies and systems and increase revenue generation and compliance. Historically, research and analysis on these important policy issues has been surprisingly limited, due in part to the sensitivity of tax reform and low availability of data. The IGC's established relationships at the highest levels of government has made it possible to develop strong partnerships with revenue authorities, enabling it to develop collaborative strategies and gain access or generate the needed data to tackle pressing challenges in tax policy and administration. Our work focuses in particular on five areas: Tax design, tax enforcement, tax morale, tax administration and local taxation.

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1. Tax design

IGC work on tax design aims to identify optimal tax policies and instruments for developing country contexts where revenue authorities face significant enforcement challenges and weak tax administration capacity, constraints that have too often been overlooked in tax advice to developing countries. We are rigorously testing and questioning many of the assumptions behind the standard theory and practice that has guided tax policy decisions in developing countries over the past couple decades. Our focus is on understanding how tax policies actually work in practice - including the effects on tax evasion, avoidance, and informality - to inform their optimal design in these contexts.

IGC project examples

- **A role for 'distortionary' taxes? (Henrik Kleven, Adnan Khan, Upaasna Kaul).** Developing countries, which have traditionally relied heavily on tax revenue from economically distortionary sources, such as border taxes, selective taxes on commodities and firms, and turnover taxes, have come under pressure from the International Monetary Fund (IMF) and others to shift to 'modern', broad-based taxes on personal income and value-added. IGC research has shown that such a shift may be inappropriate where tax enforcement capacity is limited. A properly conceived **'third best' approach to tax policy** recognises that countries may face a trade-off between production efficiency and revenue efficiency, with the implication that 'traditional' tax policies, such as taxing firms' turnover rather than profits, may, in some contexts, be more efficient overall due to their **superior revenue generation**.

- **Setting commercial tax targets (Monica Singhal).** In India, the IGC advised the Government of Bihar on setting **commercial tax targets**, which have helped to increase tax revenues. During the period when IGC's recommendations were implemented, the state tax to state GDP ratio increased from 5% to 6%, with an additional £437m in tax revenue from the previous year.

- **Reforming personal income tax (Henrik Kleven, Mazhar Waseem, Irfan Ul Haq).** In Pakistan, IGC research on **personal income tax** informed and influenced a major tax policy reform. The research found that the use of tax brackets, defined by average tax rates (rather than marginal tax rates), created spikes in marginal tax rates that – to the surprise of policy makers – resulted in strong behavioural responses that undermined efficiency and revenue. The researchers proposed shifting to a schedule based on marginal tax rate brackets. This new approach was adopted by the government, increasing efficiency and generating greater tax revenue.

- **The perils of a flat tax (Lennart Flood, Michele Savini Zangrandi).** In 2012, the Rwandan government was moving forward with a radical new flat tax reform for personal and corporate income tax. **IGC evidence** persuaded the government to reverse this decision as the research showed that the reform would exacerbate income inequality and could lead to drastic drops in revenue. This policy reversal is estimated to have saved the Rwandan government up to £15m of GDP annually.

- **Reforming mining taxation (Robert F. Conrad).** In 2011, the IGC worked closely with the Zambian Government to address the under-collection of taxes from the country's large copper mining industry. This resulted in IGC research recommendations being used by the Ministry of Finance and the Zambia Revenue Authority to re-draft regulations, with the purpose of significantly raising the revenue from the existing mineral tax laws.

- **Value-Added-Tax and firm's behaviour (Lucie Gadenne, Tushar Nandi).** In collaboration with West Bengal tax authorities, the IGC has studied **how tax policy affects firm-to-firm trade** and how a firm's position in a supply chain affects their tax decisions. Results suggested that the tax system leads to partial segmentation of supply chains were value added tax (VAT) -paying firms sell and buy more from each other. These results imply that a compliance shock, causing some firms to start paying VAT, will have multiplier compliance effects on the firm's supply chains.

2. Tax enforcement

Effective tax enforcement requires governments to have the capacity to monitor and verify taxable transactions. This is a particular challenge for developing countries where a significant proportion of the labour force is engaged in informal employment or self-employed, there is limited access to third-party verifiable transaction data, and tax administration capacity is often weak. Through its collaborations with revenue authorities in South Asia and Africa, the IGC is working to strengthen traditional approaches, like tax audits, while also exploring innovative strategies for strengthening third-party reporting and expanding information trails to improve tax compliance.

IGC project examples

- **Introducing Electronic Billing Machines (EBMs), (Andrew Zeitlin, Nada Eissa, Francois Gerard, Joana Naritomi, Andrew Zeitlin, Anders Jensen)**
  - In Rwanda, the IGC evaluated the impacts of introducing **electronic billing machines** on the effectiveness of tax administration and found that EBM usage increased VAT receipts by 5.4% on average. The study uncovered that there remains variance in the level of EBM compliance. As a result, the IGC has continued to work alongside the Rwanda Revenue Authority (RRA) to consider innovative approaches for improved compliance and the policy options needed to enable these. These approaches include **consumer-based initiatives** to strengthen their participation in EBM VAT compliance.
  - One of the main key massage in IGC's **Growth Brief on VAT** in developing countries is that information and communication technologies like EBMs present enforcement opportunities to strengthen tax enforcement.
- **Using administrative data to strengthen enforcement (Miguel Almunia, Francois Gerard, Jonas Hjort).** In partnership with the **Uganda Revenue Authority** (URA), IGC research investigated the effect of improving the use of information, and human capital, on tax revenues. The researchers identified VAT discrepancies in seller/buyer transactions. As a result of the ongoing engagement, improvements have been made to data processing and analysis workflows, such that the URA are now able to cross-check seller/buyer transactions at a more granular level.
- **Using survey data to strengthen enforcement.** In conjunction with Pakistan's Federal Board of Revenue (FBR), an IGC Pakistan study analysed the detriments of tax non-compliance. IGC research developed a technical model leveraging consumption data that identified over 300,000 of the largest tax-evaders. The results suggested that over a four-year period, £1.2 billion to £2 billion of income tax remained unpaid. Recent pressure in Pakistan has brought this identification method to the fore, with official notices reportedly being sent to tax-evaders in August 2016. The method has promising potential to increase revenues.
- **Tax compliance in the informal economy (Danielle Resnick).** In Zambia, an IGC study examined when and why informal workers **pay taxes to municipal and national authorities**. Findings suggest that where informal workers have

access to services within markets, such as clean water, and garbage collection, they are more likely to pay taxes and fees to the relevant authorities. On the basis of this work, the Zambia Revenue Authority requested IGC's support on enhancing compliance through mobile phone solutions.

- **Assessing personal income tax reforms (Anders Jensen, Enrico Di Gregorio).** IGC research helped the Zambian Revenue Authority to learn about non-compliance on **individual income tax** by studying the tax-filing behaviour of the same individual firms in the turnover tax base. In particular, the study uncovered a large number of firms in the turnover tax base that are eligible to pay individual income tax, but do not. This work has led to the comprehensive merging of different tax data to understand compliance gaps.
- **Using VAT data to increase compliance (Aprajit Mahajan).** In collaboration with the central tax authorities of the state of Delhi, India, researchers **used a large-scale dataset** – the universe of VAT statements in the state – to evaluate how to increase VAT compliance by increasing the obligatory paper trails that firms had to keep for reporting to the tax authority. This policy was adopted in Delhi and has led to an increase in tax collected from large wholesale firms who tend to trade with other tax registered firms. In addition to this, the research team used machine learning techniques to develop a predictive algorithm that could identify 'bogus' firms based on a training data set, which identified fraudulent firms. These firms were flagged for potential audit by tax authorities. Researchers trained local tax officials in using these machine learning techniques to further develop this approach.

3. Tax morale

Tax morale and social pressures have potential to be effective mechanisms for increasing tax compliance in developing countries where enforcement is low. Tax morale is based on the idea that psychological factors, such as intrinsic motivation or an individual's civic mindedness, social norms, reciprocity, and cultural values of trust and belief in the government, all play a significant role in encouraging citizens to pay their taxes. IGC research is breaking new ground by exploring how to increase intrinsic motivation to improve tax compliance through approaches such as social recognition schemes and social compacts.

IGC project examples

- **Using peer-recognition to boost compliance (Nasiruddin Ahmed, Raj Chetty, Ghulam Hossain, Ahmed Mushfiq Mobarak, Aminur Rahman, Monica Singhal).** IGC researchers partnered with Bangladesh's National Board of Revenue in a large scale field experiment that publicised information about which businesses were paying their taxes, in an effort to increase voluntary VAT **tax compliance** by exploiting social incentives and peer-recognition among firms (Chetty, Mobarak, and Singhal, 2014). The results suggest that in neighbourhoods where some firms were already complying with tax policies, the threat of exposing all firms' tax payment behaviour encouraged other non-complying firms to start paying their taxes. The research was incorporated in the Seventh Five Year Plan, with the government aiming to enhance tax compliance through a social recognition programme, an approach directly informed by the research findings.

- **Improving tax education.** IGC researchers have worked closely with the Federal Board of Revenue (FBR) in Pakistan to assist in generating and mobilising effective public support for domestic resource mobilisation through the design of a tax education initiative. The report, intended for a public audience, outlines the importance of taxation in promoting national socio-economic health and has seen success in shaping tax-evasion behaviours.

- **Rebuilding the social compact: Urban service delivery and property taxes in Pakistan (Asim Khwaja, Benjamin Olken, Adnan Khan).** New IGC research in Pakistan on the **social compact** is exploring how strengthening the link between local tax collection and urban service provision can increase citizens' willingness to pay taxes and trust in the state. The work is based on a request by the Punjab Local Government and Community Development (LG&CD) Department and the Punjab Excise and Taxation (E&T) Department. The government of Punjab, in collaboration with researchers, undertook a taxpayer survey to determine preferences on public spending. In-line with the project design, the state has agreed to implement taxpayer preferences. In 2018, public service providers, like the Lahore Waste Management Company, began delivering services to neighbourhoods based on service mapping and citizen preferences.

4. Tax administration

IGC work addresses tax administration issues, including how to recruit, motivate, and monitor tax administrators to reduce corruption and improve their performance in countries where tax morale and enforcement are weak.

- **Improving local tax collection capacity (David Lagakos, Anders Jensen).** In collaboration the Ministry of Finance and the Ministry of Local Government and Rural development, IGC research investigated **the root causes of low tax collection among local governments** in Ghana. The study found a strong correlation between the use of electronic databases and high revenue collection. The recommendations suggested that all local governments should adopt appropriate revenue management software and geo-located property databases for local tax mobilisation. The success of this study has led to a new project that looks at the impact of implementing the suggested technology based on recommendations across 65 local governments in Ghana.

- **Improving tax administration (Samuel Jibao, Michael Alexeev).** Recent IGC research has supported the Zambia Revenue Authority to consider various options for **re-defining VAT**, **Capital Gains Tax (CGT) and property taxation policy design**. In combination, this research informed reforms to VAT administrative practices.

- **Improving incentives for tax collection (Benjamin Olken, Adnan Khan, Asim Khwaja).** A research programme developed by IGC researchers in close collaboration with tax authorities in Punjab, Pakistan, has used randomised experiments – involving all the tax collectors in the province – to assess the potential role for monetary and non-monetary incentives for tax collectors.

- The researchers found that offering monetary **incentives for property tax collectors** to improve their job performance produced substantial increases in revenue collection without reducing taxpayer satisfaction (Khan, Khwaja, Olken, 2015 and 2017; see the corresponding **video**). Treatment areas where the incentives were introduced outperformed control areas by a margin of over 12 percentage points in total revenue collections over the two-year period of the study, with the increased revenue significantly exceeding the cost of the incentive reward scheme. The study also found that most effective schemes are more transparent and simpler, where pay incentives are explicitly linked to clearly defined measures of performance that leave limited room for subjectivity.
- A subsequent study considered non-financial incentives and found that **performance-based postings** have tremendous potential for incentivising tax collectors – they generate two-thirds of the effect of a maximally effective performance-pay scheme while incurring no financial cost to the government.

5. Local taxation

The IGC's work with country governments has found that improving local taxation and municipal finance issues are often a high policy priority. As such, we are beginning to engage more on topics such as fiscal decentralisation, intergovernmental fiscal transfers, increasing the tax capacity of subnational governments, and equity considerations. Our focus also includes issues of particular relevance to developing cities, such as land tax and building tax.

IGC project examples

- **Taxing land value (Mihaly Kopanyi).** Through various associated research projects, the IGC has provided advice to the Government of Rwanda on different **building tax policy** options based on lessons from property tax regimes around the world. The government's original land tax reform had aimed to improve land use efficiency, but the IGC study showed that it would have severely undertaxed valuable plots, leading to negligible impacts on land use efficiency. Study findings led to the adoption of the IGC's proposed land value tax, with the IGC persuading the government to change the proposed law initially taken to Cabinet. The new regime was forecasted to increase annual tax revenues from RWF 3.8 billion to RWF 5.5 billion (a difference of RWF 1.7 billion, or around £1.7 million, annually) and to redistribute the land tax burden substantially from poorer to richer property owners.
- **Property tax policy administration (Mihaly Kopanyi).** **The IGC and Tanzania Revenue Authority (TRA)** are partnering to address key policy and tax administration issues in Tanzania pertaining to the legal and institutional framework, realised practices, levels of compliance, and heterogeneity in enforcement across municipalities. In April 2018, IGC researchers met with

policymakers to share the primary issue identified, which relates to the current valuation methodology, which fails to accurately capture the true value of properties.

- **Fiscal decentralisation (Lucie Gadenne, Andrea Smurra).** The IGC's recently-published **'Local resource mobilisation: Key principles and options for reform'**, developed for the Government of Myanmar, synthesises research and policy lessons on fiscal decentralisation, which is likely to be a crucial element for a peaceful and sustainable political settlement.

- **Local revenue reform (Mihaly Kopanyi).** In partnership with Kampala Capital City Authority's (KCCA) Department of Revenue Collection (DRC), **IGC research** has been instrumental in driving forward the Government's revenue collection policies and processes. IGC Uganda has continued to work on follow-up research to ensure study findings continue to effectively and appropriately inform policy decision-making. Notably, study findings were being used to inform KCCA's revenue collection procedures and influence proposed amendments to local revenue collection legislation.

6. Ongoing tax research and engagement

The IGC's work covers many important questions on taxation and the fact that it is conducted in close collaboration with the tax authorities enhances the prospects for policy impact. There are many important questions in this area that IGC is looking forward to addressing in close collaboration with tax authorities in developing countries. These include questions on better enforcement, increasing voluntary compliance of taxpayers, building third-party information systems and tying these to audit and tax reports, and expanding the tax base by bringing the informal sector into the tax net.

The IGC continues to solidify relationships with key government counterparts in partner countries, specifically those focused on tax policy and administration. These close relationships across government have enabled ongoing project development, with the IGC often being a go-to partner for research questions relating to tax policy.

Some highlights of ongoing projects include:

- **VAT compliance for small forms and taxation of real estate rental income.** A collaboration with the Kenya Revenue Authority will evaluate two policy interventions, one around the timing of VAT payments and another around the cost-effectiveness of different notification strategies for collecting real estate rental income.

- **Cross-country data on tax administration practices.** The IGC has commissioned a research project, which will build a comprehensive cross-country database on tax practices across different levels of economic development. The research will look at statutory tax structures and enforcement-policies.

- **Taxing multinational firms.** The IGC has commissioned research aimed at understanding the effects of policy reforms to tax multinational firms. This research project will investigate the determinants of taxes paid by multinational corporations in developing countries. It will involve estimating the extent to which such firms shift profits out of developing countries and exploring the determinants of these profit-shifting activities.

- **Understanding special tax treatments in VAT systems (Francois Gerard, Joana Naritomi).** Another IGC research project assess whether the attractive properties of VAT systems are weakened once governments grant special tax treatments. The research is expected to support policymakers in evaluating the costs and benefits associated with various exemptions in VAT systems.
- **Fiscal decentralisation through better tax collection.** IGC work in Jordan is considering ways to increase fiscal decentralisation among municipalities and governorates through clarifying the rules around property taxation, raising own source revenues, and user fees.
- **Local taxation and land value capture.** In collaboration with the Greater Amman Municipality in Jordan, the IGC is considering ways of how to choose the appropriate taxes to capture the rising value in land, refine methods for calculating investment costs and link to land value, and better communicate the link between quality infrastructure and taxation to the public.

Photo: Melanie Stetson Freeman

7. The way forward

The IGC's work on taxation over the past decade has proven to be an innovative and cost-effective way for governments to enhance their evidence based approach towards enhancing a key revenue source. In this pursuit, we will continue leveraging rapid changes in technology to eradicate some of the constraints that governments are still facing around designing their tax policies and detecting ways for them to be improved. Moreover, more work can be done on better linking taxation to public and urban service delivery, which can have large implications for the relationship between the state and its citizens.

We will also continue exploring how intrinsic and social motivations can reduce tax evasion and enhance compliance. In addition to this, the IGC is keen on exploring how states' can use their tax system to increase their financial capacity to deliver better social welfare programmes. Over the next years, IGC will continue to work in close collaboration with government and researchers with the aim of providing answers to these and many other emerging questions.

The International Growth Centre (IGC) aims to promote sustainable growth in developing countries by providing demand-led policy advice based on frontier research. The IGC directs a global network of world-leading researchers and in-country teams in Africa and South Asia and works closely with partner governments to generate high quality research and policy advice on key growth challenges. Based at LSE and in partnership with the University of Oxford, the IGC is majority funded by the UK Department for International Development (DFID).