Institution: London School of Economics and Political Science

Unit of Assessment: 18: Economics and Econometrics

Title of case study: Improving tax design

1. Summary of the impact (indicative maximum 100 words)

Research at LSE by Henrik Kleven and colleagues has significantly improved the design of tax policy and tax enforcement in countries as different as Pakistan and Denmark. These policy impacts can be summarised as follows:

1. A project by Kleven and Waseem (2013, *Quarterly Journal of Economics*) became the blueprint for a major income tax reform in Pakistan in July 2012.

2. A project by Kleven and colleagues (2009, *Econometrica*) led to reform of the tax treatment of married couples in Denmark in 2010.

3. A project by Kleven and colleagues (2011, *Econometrica*) led to a significant change in the enforcement of capital gains taxation in Denmark in 2010.

2. Underpinning research (indicative maximum 500 words)

RESEARCH INSIGHTS AND OUTPUTS:

PAKISTAN: Until recently, the Pakistan income tax system featured discrete jumps in tax liability – so-called 'notches' – at threshold income levels. Tax liability was calculated as a proportional tax rate multiplied by taxable income, with different tax rates for different income brackets. This meant that as income crossed a bracket threshold, a higher tax rate would apply to an individual's entire income, not just the portion above the threshold, resulting in a large jump in tax liability. It contrasts with systems featuring discrete jumps in the marginal tax rate – so-called 'kinks' – such as those in the UK and other developed countries. The research on Pakistan provides a theoretical and empirical analysis of notches (1).

Two findings were particularly central to the impact. First, the responses of earnings to tax notches were extremely large – up to 10-15% of earnings in the long run – and the implied efficiency loss from those responses was therefore also large. Second, using notches to estimate the underlying structural parameters that govern behavioural responses to alternative tax structures, the study showed that tax schedules without notches would be associated with relatively small adverse effects on behaviour and efficiency. These two findings together demonstrated that Pakistan's notched schedule worked badly and that a more standard kinked schedule would work better.

DENMARK: The Danish impacts were based on two separate projects. The first (2) analysed the optimal tax-transfer design for married couples. Because of technical problems, previous research had made relatively little progress on this question. This study resolved those difficulties and showed that redistributive systems for families should feature 'negative jointness' – a situation in which the effective income tax rate (including the impact of both taxes and transfers) on a married individual is declining in the income of the spouse. In other words, someone with a high-income spouse should face a lower tax rate than someone with a low-income spouse. The paper also showed that negative jointness could be approximated by combining means-tested transfers based on family income with income taxes based on individual incomes – as in the UK system. Such a system strikes the best balance between equity goals (redistribution across families) and efficiency goals (family labour supply).

The second project (3) studied the relationship between tax compliance and tax enforcement based on a randomised field experiment conducted in collaboration with the Danish tax authorities. This study finds that the key determinant of income tax evasion is whether the income is subject to pure self-reporting or to third-party reporting by employers, banks, investment funds, etc. Evasion is always very high under self-reporting and always very low under third-party reporting. For example, the paper showed that tax evasion was relatively high for capital gains from shares because of the absence of third-party reporting on the sales prices of shares by financial institutions.

KEY RESEARCHERS*:* The Pakistan project was undertaken by Henrik Kleven (who has been in the LSE Economics Department since June 2007) and Mazhar Waseem (an LSE PhD student, on leave from a senior position at Pakistan's tax authority, the Federal Board of Revenue). The two Danish projects were undertaken by Kleven with Claus Kreiner (University of Copenhagen), Emmanuel Saez (University of California, Berkeley) and, in one of the projects, staff researchers in the Danish tax administration.

3. References to the research (indicative maximum of six references)

1. Kleven, Henrik and Mazhar Waseem (2013) 'Using Notches to Uncover Optimization Frictions and Structural Elasticities: Theory and Evidence from Pakistan', *Quarterly Journal of Economics* 128: 669-723. (http://qje.oxfordjournals.org/content/128/2/669.full.pdf+html Note: subscription required to access full article) DOI: 10.1093/qje/qjt004

2. Kleven, Henrik, Claus Kreiner and Emmanuel Saez (2009) 'The Optimal Income Taxation of Couples', *Econometrica* 77: 537-60. (Use: http://personal.lse.ac.uk/kleven/Downloads/MyPapers/WorkingPapers/best-kleven_careers_feb2013.pdf DOI: 10.3982/ECTA7343

3. Kleven, Henrik, Martin Knudsen, Claus Kreiner, Søren Pedersen and Emmanuel Saez (2011) 'Unwilling or Unable to Cheat? Evidence from a Tax Audit Experiment in Denmark', *Econometrica* 79: 651-92. (http://personal.lse.ac.uk/kleven/Downloads/MyPapers/Publications/KlevenEtAl_ECTA_May2011.pdf) DOI: 10.3982/ECTA9113

EVIDENCE OF QUALITY: papers 1, 2 and 3 are in top-ranked peer-reviewed journals in Economics. Kleven's research and impact in Pakistan benefitted from his active involvement in the International Growth Centre (IGC), a joint venture of LSE and Oxford University, which is funded annually at a level of around £13 million by the Department for International Development.

4. Details of the impact (indicative maximum 750 words)

THE NATURE OF THE IMPACT IN PAKISTAN: The impact was a major income tax reform that was passed by Pakistan's parliament in June 2012 and took effect from the fiscal year starting in July 2012. The reform followed the key policy implications of the 2013 paper by Kleven and Waseem. A first draft of this paper had had been available since 2011, and its policy implications had been described in an International Growth Centre (IGC) Policy Brief (2012) circulated immediately prior to the debate about tax reform in Pakistan.

There were two central elements of the tax reform. First, the notched tax schedule (featuring discrete jumps in tax liability) was abolished in favour of a kinked tax schedule (featuring discrete jumps in marginal tax rates): the research had shown that the notched schedule was hugely distortionary, while an alternative kinked schedule would be efficient. Second, there was a significant reduction in the degree to which self-employed individuals and wage earners would be taxed differently: the research had shown that the differential tax treatment was responsible for inefficient income shifting between the two groups.

Following the successful impact of the work on personal income taxation, a more formal framework has been developed between LSE/IGC researchers (led by Henrik Kleven) and Pakistan's Federal Board of Revenue (FBR), which is intended to provide research-based foundations for transforming the country's tax system. This framework supports research projects of direct interest to Pakistani policy-makers (who provide unprecedented access to administrative data and institutional know-how), and includes conference calls between LSE researchers and the FBR leadership (including the Chairman) to discuss tax design and reforms that can increase revenue, efficiency and growth in Pakistan.

The agreement between LSE researchers and the FBR that underlies this framework is described by Best (2013) (Source A). Such close collaboration between independent researchers and policy-makers is probably unique. It has huge potential for Pakistan and possibly for other developing countries.

LINKS BETWEEN RESEARCH AND IMPACT IN PAKISTAN: The link between research and policy impact was unique and direct. First, this was the only existing study of the distortionary effects of the Pakistan's tax system, so there was no other source of research-based information to which policy-makers could turn when considering reform.

Second, the FBR policy-makers who were given the task of proposing a new income tax structure were well aware of the study. They had provided the unique dataset on which the study is based, and one of the authors – Mazhar Waseem, a senior official at FBR on leave to pursue his PhD at LSE – had travelled to Pakistan on several occasions to discuss the research findings with his colleagues, including the Tax Policy Secretary. Furthermore, at a pivotal meeting of the Economic Advisory Council to the Prime Minister of Pakistan, where it was decided that the FBR should look into a reform of the income tax structure, Kleven and Waseem's paper was explicitly discussed and formed part of the decision to pursue reform. Testimony by Ijaz Nabi (2013), a member of the Economic Advisory Council, describes these events in detail (B).

Third, the reform that was passed and implemented by the parliament follows Kleven and Waseem's policy recommendations very closely. This process is described in the IGC Policy Brief (2012), the IGC Annual Report (2011-12) and the IGC Newsletter (2012), which provide greater detail on the policy recommendations, how those recommendations affected tax reform deliberations within the FBR, and the ultimate policy impact (C-E)).

THE NATURE OF THE IMPACT IN DENMARK: As in Pakistan, the Danish impacts consist of changes to tax policy. The two studies led to two different policy changes, both introduced as part of a major income tax reform in Denmark passed in parliament in 2009 and implemented in 2010. The first change was the abolition of a particular income tax (the so-called 'middle tax') that was based on family income rather than individual income. This implied that the income tax system became fully individual-based, while means-tested transfers remained fully family-based, creating a redistributive system featuring negative jointness. This reform corresponds exactly to the policy conclusion in the 2009 paper by Kleven et al.

The second change was an improvement of tax enforcement by expanding third-party information reporting. This included the introduction of third-party reporting on capital gains by requiring financial institutions to report the sales prices of financial assets to tax authorities. It also included an expansion of third-party reporting on perquisites. These changes were precisely in line with the recommendations in the 2011 paper by Kleven et al., which was based on an experiment conducted with the Danish tax authorities in 2007 and 2008. A first draft of this paper had been available since late 2008, prior to political decisions about tax reform.

LINKS BETWEEN RESEARCH AND IMPACT IN DENMARK: The links between research and policy reform are again very direct. The design of the 2010 tax reform was based on the recommendations of a government-appointed Tax Commission (Skattekommissionen), which consisted of 10 local tax experts and included one of the researchers (Claus Kreiner) on the Danish projects. Both policy changes originate directly from the official reform proposals of the Tax Commission (Skattekommissionen, 2009) (F).

In particular, the Skattekommissionen recommended the change in the tax treatment of married couples that was ultimately passed in parliament, citing the findings of Kleven et al. (2009) as the key economic justification. This was the only academic paper cited in the context of the policy change and one of the only academic studies cited in the entire report.

The Skattekommissionen also recommended the expansions of third-party reporting that were ultimately implemented. These recommendations followed the policy conclusions of Kleven et al. (2011, first draft 2008) extremely closely. Since this is the only existing study that provides direct evidence on the desirability of third-party reporting for tax compliance, it represented the only research-based source of knowledge that could inform those policy changes.

WHY DOES THE IMPACT MATTER? All of the policy impacts of this research encourage desirable economic behaviour (including increased hours worked, increased labour force participation and improved tax compliance), all of which are beneficial for both government revenue and economic efficiency. The impact is perhaps most impressive in the case of Pakistan, a country rife with inefficiencies and with severe difficulties in collecting tax revenue for the provision of public goods – such as education, health and infrastructure – that are vital to economic growth. The income tax reform that has been implemented and future policy changes that may be implemented as a result of the unique collaboration between LSE researchers and Pakistani policy-makers have the potential to make a significant positive impact on economic growth in the country.

5. Sources to corroborate the impact (indicative maximum of 10 references)

All sources listed below can also be seen at https://apps.lse.ac.uk/impact/case-study/view/15

A. Best, Michael (2013) *Strategy Note on Engagement between the International Growth Centre and the Federal Board of Revenue, Pakistan*, February.
Source files: https://apps.lse.ac.uk/impact/download/file/1488

B. Testimony, EAC member, on Policy Impacts in Pakistan, January. This source is confidential.

C. IGC Policy Brief (2012) *Estimating Behavioural Responses and Improving Efficiency of Income Tax in Pakistan*, March.
Source files: https://apps.lse.ac.uk/impact/download/file/1489

D. IGC Annual Report (2011-12) *Main Report*, 2 May 2012: 137-38.
Source files: https://apps.lse.ac.uk/impact/download/file/1490

E. IGC Policy Summary (2012) http://www.theigc.org/publications/working-paper/igc-research-supports-simplification-pakistani-tax-system
Source files: https://apps.lse.ac.uk/impact/download/file/1588

F. Skattekommissionen (2009) Skattekommissionens forslag til skattereform (Tax Reform Proposal of the Tax Commission), February. http://www.skattekommissionen.dk/.
Source files: https://apps.lse.ac.uk/impact/download/file/1491