

ON THE THRESHOLD: SMALLNESS AND THE VALUE-ADDED TAX

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Abstract

Three-quarters of the world's population live in a country in which a value-added tax (VAT) is collected on sales of goods and services. The registration threshold determines which businesses—typically as measured by their annual revenues—remain exempt from the obligation to register for and collect VAT on their sales. Among VAT economists, there is broad consensus that setting thresholds higher rather than lower (such that more rather than fewer businesses are exempt) increases the economic efficiency of a VAT. Despite these high stakes and the longstanding expert consensus in favor of high thresholds, real-world thresholds vary widely and skew low, even within OECD and European countries. This article leverages the insights of the economic model to address an issue that lies outside of it but is central to lawyers and policymakers: fairness. Numerous studies show that smaller businesses' costs of complying with the VAT are disproportionately higher than those of larger businesses. To the extent that lower-income entrepreneurs internalize those costs or pass them on to lower-income consumers, there is a vertical equity rationale for raising thresholds. Moreover, in the (typical) context in which small firms are more common than large firms, setting thresholds higher rather than lower—while also offering small suppliers an election to voluntarily register—can reduce the competitive unfairness of drawing an arbitrary line among similarly-situated firms. Under such conditions, higher registration thresholds can improve both the fairness and the efficiency of a VAT.

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I. INTRODUCTION

Value-added taxation (“VAT”) has taken the world by storm.¹ It has been adopted by over 150 countries that comprise about three-quarters of the world’s population, and accounts for more than twenty percent of worldwide tax revenue raised.² In some regards, the VAT can be seen as a more modern cousin of the retail sales taxes used by many U.S. states.³ The U.S. stands out as the only jurisdiction among OECD countries without a VAT, despite recurring calls for adding it as an overdue complement to the income tax.⁴ In contrast, in many developing and transitional economies, the adoption of VAT systems as part of austerity measures and fiscal reforms reflects the inexorable pressures of globalization.⁵

¹See RICHARD BIRD & PIERRE-PASCAL GENDRON, *THE VAT IN DEVELOPING AND TRANSITIONAL COUNTRIES* 17 (2007) (noting that “[o]ver the last few decades, VAT has swept the world. With the notable exception of the United States most countries around the world now have a VAT...VAT has been an enormous success. It has swept away other contending general sales taxes in most of the world. Only five countries have ever repealed a VAT, and all either have since reintroduced one or reportedly plan to do so soon. In many countries VAT has come to rival and even dominate the income tax as the mainstay of national finances. No fiscal innovation has ever spread so widely so rapidly or been so successfully adopted in such a wide variety of countries”). Indeed, 140 countries had a VAT of some sort as of 2006. *Id.* at 15 (“[VAT] is now the single most important source of tax revenue in some countries and one of the most important sources in many more”). See also Sukumar Mukhopadhyay, *Value Added Tax: How Implementation Is Going Wrong*, 37 *ECON. & POL. WKLY.* 3700, 3700 (2002) (noting that, as of 2001, nearly three-quarters of the earth’s population lives in a jurisdiction that has a VAT).

² See KATHRYN JAMES, *THE RISE OF THE VALUE-ADDED TAX* 1-3 (2015).

³See ALAN SCHENK, VICTOR THURONYI, & WEI CUI, *VALUE ADDED TAX: A COMPARATIVE APPROACH* 22-23 (2015) (contrasting a single-stage tax such as retail sales taxes in many US states to a VAT, describing it as “[t]he modern sales tax imposed at all levels of production and distribution”). See also Walter Hellerstein, *Hitchhiker’s Guide to the OECD’s International VAT/GST Guidelines*, 18 *FLA. TAX REV.* 590, 591 (2015) (“...even if one takes the liberty of describing the American subnational retail sales tax (RST) as a consumption tax, there are significant structural differences between the American single-stage RST and the multiple-stage collection process that defines the VAT”).

⁴ See Reuven Avi-Yonah, *The Rise and Fall of the Consumption Tax* (Univ. of Mich., Law & Econ. Research Paper No. 14-0245, 2014), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2523941 [perma.cc/Q69Z-XVLQ]. See also William Gale, *No, Value-Added Taxes are Not Bad for Small Business*, TAX POL’Y CENTER: TAXVOX BLOG (Apr. 27, 2016), <http://www.taxpolicycenter.org/taxvox/no-value-added-taxes-are-not-bad-small-business> [perma.cc/M2UT-VBTA] (discussing renewed interest in a US VAT and noting that Ted Cruz’s VAT proposal stands in good company with other recent proposals, many claims of which are supported by nonpartisan academic research). Others disagree that the prospect of a US VAT is realistic. The current debate on the House Republicans’ plan for replacing the corporate income tax with a destination-based cash flow tax is motivated by concerns about how US companies fare in a world where all its major trading partners have a VAT. See Richard Ainsworth, *Trump & VAT: NAFTA, Trade Barriers & Retaliatory Tariffs* (Boston Univ. Sch. of Law, Law & Econ. Working Paper No. 17-16, 2016), https://papers.ssrn.com/sol3/papers2.cfm?abstract_id=2919058 [perma.cc/A64S-7TKM].

⁵ As a matter of political ideology, the VAT is associated with globalization, and neoliberalism’s normative emphasis on free-market small-government policies. See Miranda Stewart, *Global Trajectories of Tax Reform: The Discourse of Tax Reform in Developing and Transition Countries*, 44 *HARV. INT’L L.J.* 139, 177 (2003) (“[i]n many respects, economic globalization can be understood as involving an attack on the taxing powers of the state, leading to the restriction of the state’s ability to raise tax revenues, and hence a limit on its existence and capacity to act”). In the context of debt crises in developing countries in the 1980s, implementation of a VAT was often a condition of receiving aid and loans from international institutions such as the IMF and the World Bank. *Id.* at 169 (describing centrality of VAT to structural adjustment programs and the contemporary tax reform “‘package[s]’... which includes a single-rate, broad-based VAT to replace older-style sales taxes; a low-rate, broad-based corporate and personal income tax; the goal of tax ‘neutrality’ with respect to different investments and activities; and the gradual reduction and eventual elimination of import and export tariffs. This reform package is now espoused by international institutions

Notwithstanding the huge range of country-level experiences with the VAT, its importance is far from waning.⁶ The six member states of the Gulf Cooperation Council (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates) are in the process of adopting a community-wide VAT scheduled to take effect in 2018.⁷ In early August of 2016, India accomplished what had long been thought to be politically impossible and passed legislation authorizing a national VAT.⁸ New Zealand and Australia have recently undertaken a series of VAT reforms to improve their existing VAT systems.⁹ Canada's VAT recently celebrated its twenty-fifth birthday.¹⁰

At the same time that the VAT has gained global traction, policymakers have shown increased enthusiasm for measures to support small businesses and entrepreneurship. One of the current channels for such support stands in contrast to traditional proposals for tax rate reductions and targeted subsidies, focusing instead on reducing the level of tax complexity facing small businesses.¹¹ Small business tax simplification seeks to spur the growth of emerging firms and microenterprises and increase tax compliance.¹² In light of the global ascendance of the VAT alongside

and most tax experts") (notes omitted). See also WILSON PRICHARD, *TAXATION, RESPONSIVENESS AND ACCOUNTABILITY IN SUB-SAHARAN AFRICA: THE DYNAMICS OF TAX BARGAINING* 2, 91-92 (2015) (discussing VAT generally and the specific case of Ghana).

⁶ As a general matter, VAT scholars and commentators have observed that VAT regimes often need to be updated after a sufficient amount of time has passed since their adoption. See BIRD & GENDRON, *supra* note 1, at 17, 26 ("Not all is sunshine in 'VATland,' however. Increasingly, clouds of varying sizes and shapes seem to be looming on the horizon—some in all VAT countries, but some more particularly in the developing and transitional economies that have become particularly dependent on VAT and are hence most vulnerable to looming or emerging problems with VAT... Even in the EU, VAT is showing signs of age and may need rejuvenation if it is to continue to serve as well as it has in the past" (citation omitted)).

⁷ See Richard T. Ainsworth & Musaad Alwohaibi, *GCC VAT: The Intra-Gulf Trade Problem* (Boston Univ. Sch. of Law, Law & Econ. Working Paper No. 17-03, 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2916252 [perma.cc/GTSU-R2F2].

⁸ See Gaurav Choudhury, *GST Bill Passed in Parliament: What Happens Next?* HINDUSTAN TIMES (Aug. 4, 2016), <https://www.hindustantimes.com/india-news/gst-what-happens-after-the-bill-passes-in-parliament/story-rVSQkf41hrf0iCD7qWORDN.html> [perma.cc/6RCJ-493A]. See also *Goods and Services Tax (GST) Bill, Explained*, EXPRESS NEWS SERVICE (Aug. 5, 2016), <http://indianexpress.com/article/explained/gst-bill-parliament-what-is-goods-services-tax-economy-explained-2950335/> [perma.cc/T65N-ZK7W].

⁹ See Jessica Irvin, *What Australia can learn from New Zealand's GST reform*, GAA ACCT.: J. GLOBAL ACCT. ALLIANCE (Nov. 6, 2015), <http://www.gaaaccounting.com/what-australia-can-learn-from-new-zealands-gst-reform/> [perma.cc/6RAS-EUKS]. Both Australia and New Zealand have been in the process of reforming their VAT treatment of online purchases of goods from abroad. See Holly Ryan, *Online GST jump looms for NZ shoppers*, N. Z. HERALD (July 31, 2015), http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11490026 [perma.cc/J5DY-VW7D].

¹⁰ See Richard M. Bird & Pierre-Pascal Gendron, *Sales Taxes in Canada: The GST-HST-QST-RST 'System'*, 63 TAX L. REV. 518, 520-22 (2010), (discussing the strengths of the 1991 Federal Goods and Services Tax in light of various commentators' initial misgivings).

¹¹ See Kathleen DeLaney Thomas, *Taxing the Gig Economy*, 166 U. PA. L. REV. (forthcoming 2018) (offering a number of variants on a business standard deduction for independent contractors as one of two measures to address high tax compliance costs facing gig economy workers). This idea also arose in the context of the 2016 presidential campaign. Hillary Clinton proposed a "standard deduction" for small business to make their tax filing obligations simpler. See Amanda Becker, *Clinton details plans to boost small businesses*, REUTERS (Aug. 23, 2016), <http://www.reuters.com/article/us-usa-election-clinton-idUSKCN10Y08X> [perma.cc/28LB-EB8B].

¹² The persistently low levels of tax compliance in the small business/self-employed sector are well-documented. In the US context, see Susan Cleary Morse, Stewart Karlinsky & Joseph Bankman, *Cash Businesses and Tax Evasion*, 20 STAN. L. & POL'Y REV. 37 (2009). Because many small business and self-

lawmakers' growing appreciation of small businesses' tax compliance challenges, the specific question of how VAT design affects the small is ripe for consideration by tax law scholars.

This article builds on a large literature in public finance and law on VAT design to give detailed consideration¹³ to a structurally vital component of most national VATs that has enormous relevance for small firms: an exemption for businesses that meet the definition of a "small supplier."¹⁴ Such exemptions stipulate that enterprises (in whatever legal form, including sole proprietor and own-account work¹⁵) under a designated size are not required to register for and charge VAT at the point of sale.¹⁶ Although small suppliers are not legally required to register,¹⁷ many VAT statutes allow for optional registration.¹⁸ The small supplier rules, which are typically operationalized by a

employed taxpayers receive income that is not subject to third-party reporting, it is challenging for tax authorities to effectively enforce compliance among this population. *See* INTERNAL REVENUE SERVICE, TAX GAP ESTIMATES FOR TAX YEARS 2008–2010 (Apr. 2016), <https://www.irs.gov/pub/newsroom/tax%20gap%20estimates%20for%202008%20through%202010.pdf> [perma.cc/A6PS-C4FX] (discussing role of non-information-reported income in constituting the US's net tax gap of \$406 billion).

¹³ The academic tax law literature lacks a dedicated discussion of the registration threshold and the corresponding scope of the small supplier definition in a VAT. However, two older articles, both by Professor William Turnier, ably address many of the issues that intersect with an assessment of the threshold's level, but they do not focus on the threshold *per se*. *See* William Turnier, *Accommodating to the Small Business Problem Under a VAT*, 47 TAX LAW. 963, 978 (1993) [hereinafter Turnier, *Accommodating*] (stating that with respect to a prospective US VAT, "[i]f Congress decides to exempt small businesses, it should consider several issues. Most significant would be the amount of the exemption. Presumably a decision to exempt small businesses would be based on the modest contribution by small businesses to VAT revenue and their large contribution to compliance and administration costs. Evaluation of these factors and their relationship to the exemption ceiling is best left to the Treasury and the Joint Committee on Taxation" (citations omitted)). *See also* William Turnier, *Designing an Efficient Value-Added Tax*, 39 TAX L. REV. 435 (1983) [hereinafter Turnier, *Designing*] (introducing the rules for the introductory UK VAT threshold; concluding on the basis of a qualitative interview study that the registration threshold could be raised without significant loss of revenue and with substantial compliance and administration cost savings; parlaying these observations into a recommendation that the number of taxpayers in a VAT should be minimized and offering suggestions about how to minimize compliance costs for the smallest traders through an exemption or other approaches).

¹⁴ *See* LIAM EBRILL, MICHAEL KEEN, JEAN-PAUL BODIN & VICTORIA SUMMERS, *THE MODERN VAT* 113 (2001) (noting at the outset of their chapter on VAT thresholds that "[e]xperience has taught, sometimes harshly, that a critical decision in designing a VAT is the threshold level of firm size above which registration for the tax is compulsory").

¹⁵ *See* SCHENK ET AL., *supra* note 3, at 59-60.

¹⁶ *See id.* at 60 ("[m]ost VAT systems require persons engaged in regular business activity to register if their taxable sales in a given period (usually a year) exceed a threshold level").

¹⁷ This is generally true, but there are some jurisdictions, such as Israel, that require registration for all firms but exempt the small from collecting and remitting tax. *See VAT Navigator: Israel*, BLOOMBERG BNA (July 2014), http://www.shekel-tax.co.il/he/images/stories/site/VATN0714_israel_corrected_04.09.14.pdf [perma.cc/2JH9-DAWG].

¹⁸ *See* Sharon Smulders & Chris Evans, *Mitigating VAT Compliance Costs – a Developing Country Perspective*, 32 AUSTL. TAX F. 283, 295 (2017) ("virtually all countries with thresholds allow small businesses to register for the VAT if they so choose"). *See also* Turnier, *Accommodating*, *supra* note 13, at 978-80 (noting that "denial of the option to be taxable is probably not politically viable"). Some VATs do deny voluntary registration to suppliers with revenues below a certain threshold (which is sometimes different from—and lower than—the mandatory registration threshold that is the focus of this paper). For example, South African VAT requires registration for suppliers with annual revenues over R1 million; however, voluntary registration is limited to those with revenues in excess of ZAR 50,000. *See* S. AFR. REVENUE SERV., *Small Business and VAT: What you need to know*,

“registration threshold” designating the annual revenue floor, help determine the base of taxation for the VAT.

In the public economics literature, registration thresholds have gained a firm foundation.¹⁹ In 2004, Michael Keen and Jack Mintz published a model for setting an “optimal” (efficiency-maximizing) VAT registration threshold. They generated predictions by simulating the model using a set of parameters drawn from Canadian economic data, and arrived at a counter-intuitive conclusion: the optimal VAT registration threshold should generally be *higher* rather than lower. *More* rather than fewer firms should be classified as small suppliers and freed from the requirement to register for VAT.²⁰

Why were the conclusions of the model counter-intuitive (at least to non-VAT specialists)? In the particular context of a VAT, there are good reasons to be skeptical that exempting a larger rather than a smaller swath of firms is wise.²¹ First, small supplier exemptions create an incentive for firms to “bunch” just below the registration threshold. This can occur when a firm curtails its sales to stay artificially small, splits one business into two, or keeps some revenues out of sight of the tax authorities, all of which are costly from an efficiency perspective.²² Second, a two-tiered system of VAT, in which sales by certain firms are exempt from tax, can affect the prices of goods and services. Such “breaks in the VAT chain” can cause taxes paid on inputs by exempt firms to “cascade” onto the price of outputs, resulting in misallocations of resources for both producers and consumers.²³

Keen and Mintz’s economic model addresses the downsides of exempting small firms while also taking seriously the problem that plagues nearly every real-world VAT:²⁴ compliance and administration costs are stubbornly and disproportionately high for smaller firms.²⁵ Indeed, thinking of the threshold as a “small business exemption”

<http://www.sars.gov.za/ClientSegments/Businesses/SmallBusinesses/Pages/Small-Businesses-and-VAT.aspx> [perma.cc/7L4S-LY6M].

¹⁹ See BIRD & GENDRON, *supra* note 1, at 116 (discussing the Keen & Mintz model).

²⁰ See Michael Keen & Jack Mintz, *The Optimal Threshold for a Value-Added Tax*, 88 J. PUB. ECON. 559 (2004).

²¹ See IAN CRAWFORD, MICHAEL KEEN & STEPHEN SMITH, *Value Added Tax and Excises*, in DIMENSIONS OF TAX DESIGN: THE MIRRLEES REVIEW 275, 305 (J. Mirrlees et al. eds., 2010) (“[a]ny exemption is anathema to the logic of the VAT, since it inherently breaks the chain of credit and refund, leading to an element of production taxation”).

²² See Kazuki Onji, *The Response of Firms to Eligibility Thresholds: Evidence from the Japanese Value-Added Tax*, 93 J. OF PUB. ECON. 766, 767 (2009) (describing “bunching” as relating to the densities of firms around the VAT registration threshold).

²³ See JAMES, *supra* note 2, at 28 (“the reasons for the latter measure [minimizing economic distortions relative to other taxes—e.g., efficiency] derive from the good VAT’s neutrality, as discussed above. The conventional view is that a good VAT that falls only on final consumption and not intermediate business transactions is attractive for its neutrality regarding production decisions, which in turn facilitates greater production efficiency”).

²⁴ The model’s task is to analyze how various configurations of these two cost parameters (compliance and administration) interact with the other incentives embedded in firms’ VAT registration decisions.

²⁵ See JAMES, *supra* note 2, at 81 (in this draft I have adopted a version of James’s language of “real” VATs as adopted in the political rough-and-tumble; part of her project is to document the ways in which real VATs bear sometimes little resemblance to a theoretically pure or “good” VAT). The wide variation in country-level registration thresholds as distinguished from the expert recommendation is in keeping with her account).

obscures its core policy purpose: rather than give a “break” to small businesses, it seeks to eliminate small businesses from the universe of registrants by acknowledging that the additional revenues they generate net of enforcement costs do not justify the compliance costs they would be forced to bear.²⁶ Simulations of the model suggest that, under a set of plausible economic conditions, registration thresholds in the range of about \$110,000 to \$265,000 (in 2017 U.S. dollars) can maximize the efficiency of the VAT by minimizing tax compliance costs and distortions of firm and consumer behavior in response to the discontinuity.²⁷

The intuition behind Keen and Mintz’s high-threshold result is threefold. First, the distribution of businesses by size (where size is measured by annual revenues) is typically skewed towards small businesses as compared to large ones,²⁸ so higher thresholds can quickly reduce aggregate taxpayer compliance and government administration costs.²⁹ The simulations by Keen and Mintz of their model placed approximately 50 percent of firms below the optimal threshold.³⁰ Second, because the largest firms typically are responsible for the vast majority of sales and thus the lions’ share of VAT revenues, the revenue consequences of high thresholds are likely to be modest to negligible.³¹ Third, firm bunching below the threshold compromises production efficiency, a result which has been confirmed by subsequent empirical studies.³²

²⁶ See *id.* at 31 (“[s]implicity is not considered to be the good VAT’s greatest virtue. The VAT’s complexity has caused some to question its appropriateness for developing countries with limited administrative and compliance capacity”). Numerous studies in a variety of country settings have shown that these taxpayer compliance and government administration costs are sizable on average, with a significant “fixed” component (e.g., that is independent of the size of the business). See *infra* Section IV.B.2 and accompanying notes.

²⁷ See Keen & Mintz, *supra* note 20, at 572.

²⁸ *Id.* at 572 (discussing the “non-uniform” distribution of productivities case “that captures the greater frequency of small firms...”).

²⁹ *Id.* at 573 (because the non-uniform case “implies a denser lower tail of small firms from which relatively little revenue can be gained”).

³⁰ *Id.* at 573-74 (“[i]t is also striking that the threshold is in all cases so high as to exclude a very large number of firms from charging the VAT: rather less than half in the uniform case, more than half in the non-uniform case”).

³¹ See EBRILL ET AL., *supra* note 14, at 115, 117-18 (“[i]n most countries, a surprisingly small number of VAT registrants, sometimes less than a few dozen, account for 80% or 90% of VAT collections...[d]espite significant variation, a useful rule of thumb is that the largest 10 percent of all firms commonly account for 90 percent or more of all turnover... This seemingly universal feature has important implications for the relationship between the threshold and the tax base: starting from a low level, a \$1 increase in the threshold is initially very cheap in terms of revenue foregone, but becomes much more expensive at higher levels of turnover;” noting, however, that there is “significant variation” across jurisdictions in the concentration of revenue across the distribution of firms... [but] at least 88 percent of turnover occurs in the largest 10 percent of firms”). See also BIRD & GENDRON, *supra* note 1, at 115 (“[i]n most [developing and transitional] countries, a surprisingly small number of VAT registrants, sometimes less than a few dozen, account for 80% of 90% of VAT collections”); Keen & Mintz, *supra* note 20, at 573-74 (noting that “in practice, the concentration of activity amongst a relatively few enterprises is such that it is indeed often the case that even a relatively high threshold catches an extremely large proportion of the potential base”).

³² See Onji, *supra* note 22, at 771-73 (finding bunching of firms below the eligibility threshold in Japan in a manner consistent with large firms “masquerading” as smaller firms through changes in organizational structures); see also Li Liu & Ben Lockwood, *VAT Notches* (CESifo Working Paper No. 5371, Sept. 1, 2016), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2615702 [<https://perma.cc/RS73-WELQ>] (documenting bunching in the context of the UK VAT); Jarkko Harju, Tuomas Matikka & Timo Rauhanen,

In the time period since the model's publication, Keen and Mintz's recommendation to "aim high" when setting registration thresholds has quietly taken its place among VAT design best practices.³³ Despite this expert consensus, however, annual surveys of registration thresholds, particularly across developing countries, confirm that there is striking heterogeneity, with many thresholds falling far below recommended levels.³⁴ In 2001, Liam Ebrillet et al. characterized small supplier policy as "an area in which FAD [Fiscal Affairs Department of the International Monetary Fund] has clearly been at odds with practice."³⁵ In 2007, Richard Bird and Pierre-Pascal Gendron put it more bluntly: the "conventional wisdom" that registration thresholds should be set high is "generally ignored" on the ground.³⁶ Recent contributions suggest that, over the intervening decade, particularly in developing and transitional countries, there has been movement towards higher thresholds. According to a recent paper by Sharon Smulders and Chris Evans, "[i]t appears that the case for a higher threshold has been made and many developing countries are increasing, or considering increasing their thresholds."³⁷ However, Gendron emphasizes that, still, "thresholds in developing countries are set too low for the capacity of their tax administrations."³⁸

In light of these empirical facts and the well-travelled theoretical terrain, this article makes two contributions. First, for VAT novices, it walks through the necessary background for and the economic theory of VAT threshold-setting in non-technical terms. Second, building on this background, it engages with a dimension of threshold-setting that the economic model expressly sidesteps: distributional equity concerns. Keen and Mintz are careful to note that they restrict their analysis of the optimal threshold to

The Effects of Size-Based Regulation on Small Firms: Evidence from VAT Threshold 1, 3 (CESifo Working Paper No. 6115, Sept. 2016), https://www.econstor.eu/bitstream/10419/147369/1/cesifo1_wp6115.pdf [<https://perma.cc/47CP-KJN44CBC-9K72>] (using data on the VAT in Finland to show that "the VAT threshold causes a large and significant overall behavioral response. We find large excess mass of firms in the sales distribution just below the threshold, implying that small firms actively avoid VAT liability... Surprisingly, we find that even considerable reductions in the VAT rate do not affect the extent of the bunching response. We do not find any changes in the observed behavior after the drastic drop in the VAT rate at the threshold in 2004, nor between similar industries that faced different changes in VAT rates over time. In contrast, the excess mass below the threshold decreased sharply when compliance costs were reduced in 2010. Our results strongly indicate that compliance costs are the key factor in explaining the observed behavior").

³³ See BIRD & GENDRON, *supra* note 1, at 115 ("the ideal VAT threshold was [thought to be] zero. As time went on, however, and more experience with the difficulties of imposing general sales taxes in fragmented economies with large informal sectors was accumulated, conventional wisdom changed. It now suggests that a threshold should be set considerably higher in most countries—say, at a level of U.S. \$100,000").

³⁴ See *infra* Section III.A, Table 1 and accompanying text.

³⁵ See EBRILLET ET AL., *supra* note 14, at 113. The volume includes a table that compares thresholds recommended by the IMF with those ultimately adopted by legislatures (using 2001 figures, which have moved but not significantly) and shows that "[o]n average, those adopted are less than 80 percent of what the IMF recommended."

³⁶ See BIRD & GENDRON, *supra* note 1, at 25.

³⁷ See Smulders & Evans, *supra* note 18, at 296.

³⁸ See Pierre-Pascal Gendron, *Real VATs vs. the Good VAT: Reflections From a Decade of Technical Assistance*, 32 AUSTL. TAX F. 257, 265, 267 (2017) (emphasizing that the correct threshold for a particular country is an empirical (rather than an administrative) matter with, "[g]overnments [setting] thresholds at a level which is too low for several reasons").

efficiency alone,³⁹ where efficiency entails minimizing the costs of tax-induced behavioral distortions.⁴⁰ They recommend high thresholds entirely independently of concerns about how the VAT's compliance costs are experienced by or passed along to individuals with different available resources and abilities to comply. As well, they briefly consider issues of competitive fairness among stakeholders of larger versus smaller firms but do not draw this out. This paper takes a closer look at both dimensions and argues that norms of vertical equity and competitive fairness also point in favor of higher rather than lower thresholds.

For those countries considering raising their registration thresholds but not yet sold on the proposition, this article argues that there may be room to supplement the economic efficiency rationale for higher thresholds with a pair of equity rationales. Proponents of higher thresholds may benefit from publicizing the proposition that high thresholds can better match VAT compliance costs with available resources to comply (vertical equity) and, at the same time, minimize the competitive inequities that necessarily arise when a cutoff is introduced. In countries in which higher thresholds have been recommended by economists but have not been implemented, reframing the conversation in terms of tax fairness has the potential to resonate with important constituencies.

The paper proceeds as follows. Part I provides an overview of VAT mechanics aimed at a general U.S. law audience (those familiar with the VAT are advised to proceed directly to Part II). Part II walks through the intuition behind Keen and Mintz's model using non-technical language. Part III reviews registration thresholds currently in effect in VAT jurisdictions, showing that they are often lower than the rule-of-thumb recommendation of the economic model. Part IV addresses the vertical equity and competitive fairness implications of threshold-setting. The last Part concludes.

II. PART I: VAT, DEMYSTIFIED

Across much of the world, the VAT registration threshold represents the crossroads at which businesses on the margins of formality meet the tax system. However, to understand the importance of registration thresholds, basic VAT literacy is required. This Part offers such a primer by posing the question, “[w]hat is a VAT?”⁴¹ It

³⁹ See Keen & Mintz, *supra* note 20, at 564 (asking at what level “the threshold [should] be set such that the social value of the revenue gained from each firm brought into tax by slightly lowering the threshold is exactly equal to the additional administrative and compliance costs incurred”). See also *id.* at 574 (“the focus here has been on efficiency aspect of the threshold choice. In practice, distributional effects are naturally a major concern. Much emphasis is often given, in particular, to the regressive nature of the compliance costs associated with the VAT”).

⁴⁰ See JAMES, *supra* note 2, at 28 (“[t]he good VAT is said to raise revenue with the least cost and the least economic distortions relative to other comparable taxes”) (under heading labeled “Efficiency”).

⁴¹ Every VAT novice must tackle this deceptively simple question, and I have benefited from numerous good answers in both the technical and layperson-oriented literature. See, e.g., BIRD & GENDRON, *supra* note 1, at 10. See also *The Value Added Tax: Experiences and Issues*, in International Tax Dialogue 14 (Alan Carter ed., 2005), <https://www.oecd.org/tax/tax-global/ITD-publication-decade-sharing-experiences.pdf> [<https://perma.cc/6EEA-JQJU>] (“a broad-based tax levied at multiple stages of production [and distribution] with—crucially—taxes on inputs credited against taxes on output. That is, while sellers are required to charge the tax on all their sales, they can also claim a credit for taxes that they have been charged on their inputs. The advantage is that revenue is secured by being collected throughout the process of production (unlike a retail sales tax) but without distorting production decisions (as a turnover tax does);”

then takes a step back to briefly identify the key strengths and weaknesses of a VAT, to set the stage for discussing in Part II how registration thresholds and surrounding small supplier rule details interact with these strengths and weaknesses. Readers already well-versed in the input-credit structure of modern VATs should skip ahead to Part II.

A. What Is a VAT?

The best way to introduce the nuts and bolts of the VAT is the following simple definition: value added tax (VAT) is a tax that is levied on all sales by registered businesses.

The three underlined portions of the definition above highlight the distinct components fundamental to most modern VATs.⁴²

1. A VAT Taxes Sales

Colloquially speaking,⁴³ a VAT is levied on sales, and it is collected from consumers at the point of sale. This feature highlights that the VAT is a member of the larger family of “indirect taxes.”⁴⁴ Indirect taxes include a wide variety of commodity taxes, excise taxes, and other consumption taxes levied on sales. The VAT’s closest relatives in the indirect tax family are “general sales taxes” and “retail sales taxes.” The former appears most commonly as a “turnover” or “gross receipts” tax under which are all sales at every stage of production (manufacturer, wholesale, intermediate, retail) are taxed. By contrast, the latter is a “single-stage” tax that is collected only by retailers at the stage of the final sale to consumers. As will be discussed further below, each of these has significant drawbacks as compared to a VAT.

What makes a tax “direct” versus “indirect”? Direct taxes generally refer to income taxes on earnings from various sources, like wages, active business income, investment income, or gains on dispositions of capital property.⁴⁵ Direct taxes are direct

noting however that this definition is not the last word: “[i]t should be noted that the list of ‘VAT countries’ found in Annex Table A.1 differs in some respects from the similar information contained in other recent sources... which also differ from one another. Such differences are inevitable, given the fast-changing nature of the VAT universe and some fuzziness around its definitional edges...[Some differences arose] because Bird (1970) considered a tax that used the invoice-credit method as a VAT even when it was applied only at one stage of production, whereas according to ITD (2005) the tax must be applied at multiple stages to be a VAT. Since to some extent the answers to such questions lie in the eyes (and purpose) of the beholder, lists may differ” (full citations omitted).

⁴² This is true of Canada’s Goods and Services Tax, on which I frequently draw for illustration. Canada’s Excise Tax Act was amended in 1990 to add Part IX, entitled “Goods and Services Tax,” *see also* Amending Act 1993, ch. 27 § 23; 1997, ch. 10 § 9 [hereinafter GST]. Note, however, that input credit-style VATs are most common but not the only type of VAT on offer. Itai Grinberg, *Where Credit is Due: Advantages of the Credit-Invoice Method for a Partial Replacement VAT*, 63 TAX L. REV. 309, 358 (2010).

⁴³ Technically, VATs apply to transactions using the broader concept of a “supply,” which goes beyond legal sales.

⁴⁴ *See* SCHENK ET AL., *supra* note 3, at 20.

⁴⁵ For those familiar with the Canadian context, it is worth noting that courts have sanctioned a very wide definition of “direct taxes” for constitutional validity purposes. This definition includes taxes that would normally go in the category of “indirect” taxes, such as the Canadian VAT, retail sales taxes and even excise taxes. The explanation can be found in section 92 of the Constitution Act, which restricts provincial taxes to “direct” taxes only. However, provinces bear the lions’ share of spending responsibilities, so courts have stretched the meaning of “direct” taxes to facilitate revenue-raising. *See* Gerald LaForest, *The Allocation of*

in that they accrue at the point of resource creation or realization by the taxpayer.⁴⁶ Indirect taxes, by contrast, accrue not at the point of resource creation but at the time at which the taxpayer (buyer) converts those resources into consumption (e.g., at the level of the transaction).

2. *A VAT Is a Multi-Stage Tax*

Second, a VAT applies to all sales (or, less colloquially, it is assessed on the “supply” of all goods or services). In contrast to a single-stage tax like a retail sales tax, a standard VAT does not heed where a particular sale lies in the supply chain. VAT is charged and collected by sellers at each and every stage.

However, the VAT feature of taxing all sales comes with a crucial caveat that lies at the center of the standard VAT architecture: the “input credit” mechanism that distinguishes a VAT from a general sales tax. This avoids the devastating “tax cascade” that would otherwise hobble a tax that is assessed at each stage of production without adjustment via input credits. What is the “tax cascade”?⁴⁷ When each sale is subject to tax with no adjustment for prior sales taxes paid, such as is the case with a general sales tax, a transaction’s position in the supply chain will affect the price of the sale. Put differently, where a commodity has a downstream position in the supply chain, each prior transaction causes tax to be passed downstream. It cascades at each stage of the supply chain in two ways: as a tax layered on tax and as a tax layered on value-added.⁴⁸

To navigate around this tax cascade, nearly every VAT in existence employs a feature called “input crediting” or “invoice-crediting.”⁴⁹ Input crediting allows sellers to offset the VAT that they have paid on their inputs against the VAT that they must charge,

Taxing Power Under the Canadian Constitution 96-97 (Can. Tax Paper No. 65, May 1981) (stating that “[s]ales taxes may probably be classified as a type of excise tax, but apart from certain remarks [case citation omitted] . . . , the courts have not so classified them in dealing with questions of direct taxation”).

⁴⁶ See SCHENK ET AL., *supra* note 3, at 5 (“[t]axes customarily have been classified either as direct or indirect taxes. ‘A direct tax is one that is assessed upon the property, business or income of the individual who is to pay the tax. Conversely indirect taxes are taxes that are levied upon commodities before they reach the consumer who ultimately pay[s] the taxes as part of the market price of the commodity (citation omitted). This distinction, based on the incidence of the tax, has been criticized because ‘modern economic theory’ points out that income taxes (considered a direct tax) may be shifted.” (citation omitted)).

⁴⁷ See ALAN SCHENK & OLIVER OLDMAN, *VALUE ADDED TAX: A COMPARATIVE APPROACH IN THEORY AND PRACTICE* 4-5 (2001).

⁴⁸ See SCHENK ET AL., *supra* note 3, at 23 (“[a] VAT can be described on the basis of the mechanical method used to calculate net tax liability for each tax period”). In a sense, “value-added” is concept determined not by the underlying economics of production, e.g., the value of the untaxed inputs required in creating a given good or service, but rather by the tax itself.

⁴⁹ See CRAWFORD, KEEN & SMITH, *supra* note 21, at 291 (observing that all national VATs are of the invoice-credit form except for the VAT adopted by Japan); BIRD & GENDRON, *supra* note 1, at 15 (“[i]n principle, many types of VAT may exist with variations in the breadth of the tax base (gross product, net income, consumption); the treatment of foreign trade—origin, destination; and the method of collection—addition, subtraction, invoice-credit. In practice, however, almost every VAT in the world today follows the EU model in several important respects: it is in principle intended to tax consumption on a destination basis (imports taxed, exports zero-rated), and it is applied on a transaction basis using the invoice-credit (output tax less input tax) method” (citations omitted); noting however that a major exception is the origin-based income-type VAT that exists in various forms in Italy, Japan and several American states).

and remit to the government, on their outputs.⁵⁰ The input-credit mechanism explains where the VAT gets its name, because it refers to the underlying basis on which tax is assessed. Due to the input credit feature, VAT taxes only the “value added” as measured by the excess of sales over inputs at each stage of production.

Sometimes abstract explanations of tax concepts can miss their mark, so what follows is a concrete example to illustrate how a cascading “turnover tax” on all sales (e.g., a tax that has no input-credit mechanism) contrasts with an input-credit VAT.

Suppose Robin produces cuckoo clocks. Robin makes the clocks herself, but she needs a number of inputs to do so. The wooden carved cuckoo bird that pops out of the clock is a crucial input, and Robin sources the birds through Morgan, whose business locates remote sellers who carve birds using unusual woods. Morgan sources Robin’s carved birds through Lee, a wood carver who carves birds from self-scavenged wood.

Suppose the competitive environment for cuckoo clocks is such that Lee sells a particular carved bird to Morgan for the (pretax) price of \$100. Morgan, in turn, sells the bird to Robin for the (pretax) price of \$200. Robin, in the final stage, sells the cuckoo clock to a final consumer for the (pretax) price of \$400. Suppose further that a 20 percent turnover tax—without any input credits, e.g., equivalent to the general sales tax on gross receipts described above—is in effect. As a result, Lee charges the 20 percent tax and Morgan pays a tax-inclusive price of \$120. Morgan cannot claim any credits for the tax she pays, so suppose she passes along the full amount of the tax to Robin. Thus, instead of selling the cuckoo bird for \$200, Morgan sells it for a (pretax) price of \$220. Accounting for the 20 percent tax (on \$220) of \$44, the tax-inclusive price paid by Robin for the bird is \$264.

To see how the tax has “cascaded” at each stage in the supply chain, we can first observe that the tax component of Morgan’s sale to Robin is \$64. This is the portion of the total price of \$264 that will be claimed by the government. To calculate the effective tax rate created by the cascade, the tax component is divided by the non-tax component. The effective tax rate on the carved bird at this (intermediate) stage of the cuckoo clock’s production is approximately 29 percent (\$64 divided by \$200). By contrast, a sale by Lee directly to Robin (again supposing that the seller, Lee, is able to pass along the entire amount of the tax to her customer) would carry only a 20 percent tax.

It gets even worse at the next stage: to earn a pre-tax profit of \$200, Robin would need to charge the end consumer of the cuckoo clock a pretax price of \$464. With tax, the price would be \$556.80. The tax paid (e.g., cascading at each stage of the supply chain) totals \$156.80. Relative to a good with an underlying tax-free price of \$400, the effective tax rate is a whopping 39.2 percent.

Why is this result—a 20 percent tax on a direct sale versus a 39.2 percent tax through a middle-person—undesirable? Two reasons stand out. First, the tax rate is determined not by a reasoned decision of a legislator or by voters, but by something else: a transaction’s arbitrary position in the supply chain. This arbitrariness is facially suspect: there is no obvious reason we would want Robin to bear a higher effective tax rate than Morgan or Lee. Nor is there a reason to expect that a party’s transactional position in the

⁵⁰ Interestingly, the cascading sales tax incentive in favor of self-supply was cited by Coase as a *raison d’être* for the existence of a firm. See RONALD H. COASE, *The Nature of the Firm*, 4 *ECONOMICA* 386, 393 (Nov. 1937).

supply chain would be related to any commonly accepted basis for differential taxation (e.g., ability to pay, economic need, etc.). As such, the distributional impacts on different groups in society of a cascading tax are notoriously hard to assess.⁵¹ Second, in terms of a tax's behavioral impact, the differential in prices created by the tax cascade gives Robin a strong incentive to "self-supply" her carved-bird input (for instance, by scavenging for wood, taking a bird-carving class, and making the birds herself) or alternatively through "vertically integrating" her business (for instance, by asking Lee to become her employee rather than her arms-length supplier). By avoiding the taxable transaction at the intermediate stage, either of these strategies would allow Robin to capture a portion of the 19.2 percentage point tax differential that otherwise would have been claimed by the government.

The overarching objective of optimal tax design is to minimize the extent to which taxes induce people like Robin and Lee to change ("distort") their behavior in response to a tax.⁵² The costs and effort of pursuing these tax-motivated changes ("distortions") in decision-making and resource-allocation are unintended consequences of the turnover tax. Usually, turnover taxes are intended simply to raise revenue for use by the government. What if there was a similar tax that raised the same amount of revenue but induced fewer tax-motivated changes by individuals?

Enter the input-credit mechanism. To see how it can remedy the tax cascade, suppose now that the same transactions take place, but the 20 percent turnover tax has been replaced by a 20 percent input-credit VAT. Suppose further that Robin, Morgan, and Lee's businesses are all VAT-registered (that is, there are no small supplier exemption considerations in this example). The transactions play out as follows:

1. When Morgan buys the carved bird from Lee for \$100 plus \$20 tax, Lee issues Morgan an invoice that lists these amounts along with both of their VAT registration numbers. Depending on the technological capacity of the tax authority, invoices may or may not be remitted electronically to the government.
2. The VAT outcome for Lee is that she owes \$20 to the government. This is because no input tax credits were available to her: her only input, aside from her own labor and creativity, was the scavenged wood.

⁵¹ See BIRD & GENDRON, *supra* note 1, at 30 (noting that general sales taxes, e.g., turnover taxes, are conceptually simple but have the effect of discouraging investment and exports while creating uncertain distributional and price effects because the tax burden borne by a particular exchange depends on "how many prior taxed transactions are embodied in its sales price"). Assessing the distributional effects of a turnover tax would require knowing the extent to which those who are less well-off consume commodities at a "later" (more downstream) stage in the supply chain; consuming at a more downstream stage would cause the poor to face higher after-tax prices and a higher effective tax burden. Similarly, one might think that better-off consumers could "negotiate around" the tax cascade in a Coasian fashion (e.g., by forming a firm) whereas this would be hard for those with fewer resources. However, speculation would need to be backed up by data to accurately assess who was being hurt (or helped) by a cascading tax.

⁵² This is true unless behavioral change is the stated goal of the tax. In this regard, excise taxes such as alcohol or tobacco "sin taxes" or fuel taxes are fundamentally different than, and have diametrically opposed objectives from, an indirect tax on consumption designed to raise revenue (e.g., like a VAT). See James A. Mirrlees, *An Exploration in the Theory of Optimum Income Taxation*, 38 REV. ECON. STUDS. 175 (1971).

3. Next, Morgan sells the cuckoo bird to Robin for \$200 plus \$40 tax; Morgan issues Robin a receipt listing these amounts and both of their VAT registration numbers.
4. The VAT outcome for Morgan is that the \$20 input tax credit can be used to offset the \$40 tax that she collected on her sale of the \$200 bird to Robin. Morgan's net VAT liability is \$20.
5. Last, Robin sells her finished cuckoo clock to a customer for \$400 plus \$80 tax, Robin doesn't issue a receipt because (by assumption) the final retail customer is not a VAT-registered business.
6. The VAT outcome for Robin is that the \$40 input tax credit can be used to offset the \$80 in tax that she collected from her customer on the sale. Robin's net VAT liability is \$40.

The VAT's solution to the tax cascade problem takes place in the third and fifth steps above. Because of the availability of input tax credits, Morgan does not need to pass the input tax that she paid to Lee along to Robin, and Robin does not need to pass the input tax that she paid to Morgan along to the final consumer, so tax is not layered on tax. Similarly, tax on the value-added (the difference between taxed inputs and taxed outputs) at each stage of the transaction does not cascade on itself. The effective tax rate at each stage in the supply chain holds steady at the rate intended by the VAT legislation: 20 percent of value-added at each stage. The government thus raises \$80 of revenue on a pre-tax good with a value of \$400.

3. *A VAT Requires Registration*

The third and final definitional element of input-credit VAT systems may seem obvious on its face: notwithstanding that unregistered businesses pay (non-refunded) VAT on their inputs, VAT collection is required only of registered businesses. Successful administration and enforcement of such VATs relies fundamentally on firm-level compliance with registration rules. Non-registration is one of the main channels through which VAT evasion occurs.⁵³

The centrality of the registration requirement to the basic functioning of a VAT implies that the design choices surrounding which firms must register are of first-order importance. As detailed in Part II, setting the registration threshold is arguably the most fundamental VAT design choice aside from the rate.

B. What Makes a VAT work?

Laying out the basic elements of a VAT lays the necessary foundation for understanding the centrality of VAT small supplier provisions. However, the question of defining the VAT's base with respect to small-firm sales is intimately bound up with buttressing the strengths of the VAT while mitigating its weaknesses. Most generally, an emerging literature building on the insights of optimal tax theory provides a rationale for using a combination of multiple tax instruments from both families of taxation—direct and indirect, income and VAT—to raise the politically-determined amount of

⁵³ See CRAWFORD, KEEN & SMITH, *supra* note 21, at 310 (although note contrast with a subtraction method VAT such as that in Japan).

government revenue.⁵⁴ The specialist VAT literature can be summarized as identifying three key strengths of the VAT: production efficiency, fractionalism, and deterring evasion.⁵⁵

1. *Production Efficiency*

Production efficiency is the idea that any indirect tax should burden consumers rather than producers. This means that final consumption should be taxed, but business inputs exempted. Concentrating indirect taxes on consumers may strike one as unfair. However, a key theoretical result in public economics is the production efficiency theorem of Peter Diamond and James Mirrlees, which can be summarized as follows: taxing business inputs to address distributive concerns is shortsighted.⁵⁶ Such taxes distort production, which reduces aggregate output, which means there are fewer resources in the economy to tax and redistribute. Put differently, taxing business inputs reduces the size of the public revenue pie even before the pie's slices can be distributed.⁵⁷ The VAT accomplishes this, whereas other indirect taxes, such as the retail sales tax, do not.⁵⁸

2. *Fractionalism*

The second advantage of a VAT is that its input-credit structure makes it “fractional.” This sounds like a bad thing: does the VAT collect only a fraction of what it should? It is just the opposite. When all businesses in the economy are registered and compliant, the VAT can be viewed as collecting tax at each stage in the supply chain on just the “fraction” of the value of the transaction that is the “value-added” at that particular stage (e.g., the difference between taxed output and taxable inputs, as measured

⁵⁴ See David Gamage, *The Case for Taxing (All of) Labor Income, Consumption, Capital Income, and Wealth*, 68 TAX L. REV. 355 (2015).

⁵⁵ Typically, these strengths are discussed in comparison to cascading turnover taxes rather than a single-stage retail sales tax because the VAT is economically equivalent to the latter. See BIRD & GENDRON, *supra* note 1, at 31 (“Firstly, VAT imposes what is economically equivalent to a single-stage retail sales tax through a multistage process that in effect ‘withholds’ tax at each stage of the chain of production and distribution preceding the final sale to households. By doing so, it ultimately achieves the (presumed) goal of taxing only consumption. Moreover, even if evasion occurs at the final retail stage, only that part of the potential tax base consisting of the retail margin escapes tax. Secondly, by crediting taxes on inputs including capital goods, VAT avoids distorting economic choices with respect to production technology. It also eliminates taxes on exports by crediting taxes paid on inputs at prior stages”).

⁵⁶ See Peter Diamond & James A. Mirrlees, *Optimal Taxation and Public Production I: Production Efficiency*, 61 AM. ECON. REV. 8 (1971).

⁵⁷ See CRAWFORD, KEEN & SMITH, *supra* note 21, at 281. Assuming that there are no restrictions on the government’s ability to make transfers “any distortions of production decisions reduce aggregate output, which cannot be wise so long as there is some useful purpose to which that output could be put”).

⁵⁸ See BIRD & GENDRON, *supra* note 1, at 37 (“[t]he extent of the multifaceted distortions resulting from the RST approach to sales taxation is difficult to assess, but the VAT approach should be less distorting simply because it substantially reduces the taxation of business inputs. Paradoxically, precisely because most inputs pay VAT, no additional tax element is included in the VAT levied on the sale to the final consumer. Sellers deduct VAT previously paid on inputs (including purchases of capital goods) before remitting VAT due on sales (assuming VAT takes the conventional income-credit form). From an economic perspective, this ability of VAT to ‘untax’ business is one of its most attractive features: VAT is the form of consumption tax that approaches most closely taxing consumption at the explicit tax rate stated in the law”).

by the tax-inclusive price paid by the buyer in the transaction). This is the mechanical result of the creditability of taxable inputs.

The strength of fractionalism, however, can be seen best in the *absence* of full registration or compliance, particularly at the end of the supply chain.⁵⁹ It allows for a “catching-up” on tax owing where the VAT applies or operates imperfectly: “[t]his means that tax is recaptured at the next stage of the supply chain if there is evasion at a prior one, thus providing a check on possible evasion.”⁶⁰ Whereas a retail sales tax would collect zero revenue if the last supplier in the supply chain (e.g., the retailer) was not registered or was non-compliant, a VAT raises revenue incrementally along the way to the retail stage. Tax on value added at each stage is collected, so the loss from a break in the chain at the final stage can be mitigated.

3. *Deterring Evasion*

The third advantage relates to enforcement. There are two central channels through which the VAT is thought to be a particularly enforceable tax if not fully “self-enforcing” as some commentators have claimed.

a. Paper Trail

As noted by Ian Crawford, Michael Keen, and Stephen Smith in the landmark Mirrlees Report on tax design, “[t]he appropriate mix between direct and indirect taxes is one of the oldest issues in public finance.”⁶¹ This controversy is driven by a basic insight: a uniform tax on consumption—that is, a tax on all commodities at the same rate—has an identical effect as a uniform tax on wage and profit income.⁶² This theoretical equivalence of direct and indirect taxes raises the obvious question: why would a government desire an indirect tax like the VAT if it already has an income tax?

Enter the practical realities of enforcement and tax administration.⁶³ Two aspects loom large under the general “paper trail” heading: VAT compliance and income tax

⁵⁹ See Michael Keen & Stephen Smith, *VAT Fraud and Evasion: What Do We Know and What Can Be Done?*, 59 NAT'L TAX J. 861, 865 (Dec. 2006) (“if the final seller is not taxed, all revenue is lost under an RST, but the fractional nature of the VAT means that tax would then be lost on the value added at that final stage (so long as VAT has been properly collected throughout the preceding production chain)”).

⁶⁰ See CRAWFORD, KEEN & SMITH, *supra* note 21, at 311 (but noting that abuse of input crediting provides one of a number of “distinctive opportunities for evasion”).

⁶¹ See *id.* at 281.

⁶² *Id.* (“[m]ore recent and formal theory has brought relatively few additional insights. The most important, perhaps, is a recognition that, in principle at least, the balance is to some degree arbitrary, there being a close similarity in terms of their impact on individuals’ budget constraints—and hence, in the absence of some form of fiscal illusion, on their behavior—between a uniform tax on consumption and a uniform tax on wage and profit income. This is immediately clear for a consumer who lives only one period and receives income only from these sources: for them, a tax of 20% on all the income they receive is equivalent to a 25% tax on everything they spend. In such a world, the balance between commodity and wage taxation would be immaterial”). To see why this last statement is true, note that the divergence in the headline rate of tax is a (somewhat confusing) result of how we speak about, and calculate, tax rates as percentages of a given base. Where the government needs to collect \$20 in sales taxes from a total resource base of \$100 (a straightforward 20 percent income tax), the individual will be left with \$80 to spend. This results in the equivalence of a 25 percent (tax-exclusive) sales tax to a 20 percent (tax-inclusive) income tax.

⁶³ The practicalities of multi-period earning and savings decisions are also crucial, but here the focus is on compliance and government administration/enforcement.

compliance are more likely to be complements than substitutes.⁶⁴ Second, registration for and compliance with a VAT has the salutary consequence of yielding a detailed record of the transactions not only of the registered business but also of the trading partners of the registered business.

Suppose that both parties to a transaction are VAT-registered. To complete the transaction, they must agree on a price, but an evader might seek to record and invoice a price for given transaction that is different than the actual price (e.g., cooking the books for VAT purposes per one of the two evasion strategies discussed below under “self-enforcement”). However, because both parties are VAT-registered, the invoice can be cross-checked. Invoices typically contain both buyer and seller’s registration numbers, and any inconsistency between the price on the invoice as between the buyer and the seller would be an easy tip-off for tax investigators.⁶⁵ Important recent research has found empirical support for the efficacy of a paper trail as a deterrent to evasion.⁶⁶ And, at least theoretically, this paper trail can be used to discipline cheating across tax instruments: a VAT paper trail allows auditors to gain information about an entrepreneur’s income tax liability also.

However, these paper trail-based mechanisms likely work in both directions, to the detriment of the fisc in the context of the cash economy. An entrepreneur who underreports her business’s sales or over-reports her input tax credits to evade VAT runs the risk of exposure if she honestly self-assesses her income on her annual tax return, so she is unlikely to do so. Similarly, an entrepreneur who cheats on her income taxes is unlikely to report honestly for VAT purposes.

b. Self-enforcement

The input-credit mechanism has the potential to provide a check—through the process of what VAT scholars have called “self-enforcement”—on the two primary means by which VAT-registered sellers could evade VAT: (1) by underreporting sales or (2) by over-reporting taxable purchases.⁶⁷ Separate from (but reinforced by) the paper trail channel mentioned above, this occurs because the input credit mechanism discourages collusion: the two parties have opposing economic interests. The seller’s VAT liability—the amount owing on the sale—is precisely the same amount as the buyer’s input tax credit.

To come back to the example of Robin the cuckoo clock maker: if Robin is bargaining with Morgan about the price of a carved bird, Robin could benefit from reporting a price for VAT purposes that is higher than the actual price she paid, because

⁶⁴ See discussion of Robin Boadway et al., *Towards a theory of the direct-indirect tax mix*, 55 J. PUB. ECON. 71 (Sept. 1994) in CRAWFORD, KEEN & SMITH, *supra* note 21, at 282 (“when some income escapes tax it may be helpful to deploy a uniform commodity tax even when there would be no other reason to do so”).

⁶⁵ See BIRD & GENDRON, *supra* note 1, at 31 (“since the two sides of the transaction are (for inter-business trade) in principle recorded in two sets of books, the task of the administration in detecting evasion should be easier with VAT”).

⁶⁶ See Dina Pomerantz, *No Taxation Without Information: Deterrence and Self-Enforcement in the Value Added Tax*, 105 AM. ECON. REV. 2539, 2540 (2015) (“investigat[ing] the role of third-party reported paper trails for tax enforcement...through two randomized field experiments with over 445,000 firms in Chile”).

⁶⁷ See BIRD & GENDRON, *supra* note 1, at 31.

she will be able to use the VAT she paid on this input to offset the tax she must charge and remit on her sales of clocks to her customers. However, this ploy would work to the detriment of Morgan: Morgan would owe more VAT because of the higher invoiced price on the sale. Where neither party succeeds in manipulating the invoice price, the VAT lives up to its “self-enforcing” potential, although many VAT experts view the strength of this potential as being low.⁶⁸ And even in a case where a firm escapes registering for VAT altogether, inputs will still be taxed.

* * * * *

Due to these advantages, in spite of its weaknesses on some dimensions with respect to evasion and fraud, the consensus in the literature is clear: “if you have a VAT, keep it.”⁶⁹

III. PART II: THE REGISTRATION THRESHOLD IN THEORY: KEEN AND MINTZ’S MODEL

The claim that the registration threshold and accompanying small supplier provisions play a central role in a well-designed VAT is neither new nor controversial.⁷⁰ Nearly all VATs feature a positive (e.g., non-zero) registration threshold for firm registration.⁷¹ As a general matter, the cutoff typically refers to total revenues of a business in a given period. However, there are often exclusions, including any foreign sales (e.g., exports), exempt supplies, sales of capital assets, and provisions relating to

⁶⁸ *Id.* at 32 (pointing out that “it is easier to get away with this dodge when the alleged supplier [of the “input”] is in another country, as in the case of the so-called carousel frauds in the EU. But when the tax administration is as weak as it is in many developing and transitional countries, it is not hard to create and register fictitious firms domestically in order to operate such frauds”).

⁶⁹ *See id.* (“[r]egardless of the competence of the administration and the honesty of both officials and taxpayers, both in principle and in practice it remains simpler to enforce a sales tax applied in an incremental ‘value-added’ form to a chain of transactions than to have a system in which all stands or falls on honest reporting of a single transaction (the final sale”). They also point out that a VAT has two key economic strengths unlikely to be found under a real-world RST: business inputs are not taxed (which is good because the tax is intended to burden consumption—by final consumers—not production or investment, and it avoids “cascading” taxes at each stage of production/transaction).

⁷⁰ *See id.* at 3 (“[t]he critical issue in VAT design relates not to the stage at which the tax is imposed but to the size of the registered firms...In 1991 for example, after a careful examination of Egypt’s fiscal position, its existing tax structure and its administrative capacity, as well as close consideration of then-recent experiences with adopting VAT in other North African countries (Morocco, Algeria, Tunisia), Egypt introduced its first general sales tax...a VAT limited to importers and manufacturers...In 2001, when Egypt finally did extend its VAT to include wholesale and retail trade, the immediate result was to triple the number of registrants (firms registered as VAT taxpayers) with no concomitant gain in revenue. The need to deal with so many new, and mostly very small, taxpayers inevitably resulted in some loss in administrative efficiency. What had seemed a decade earlier to be a good design decision based on experience elsewhere as well as Egypt’s own prior experience with manufacturer’s level consumption taxes turned out to have been mistaken...further experience has made it much clearer than it was 15 years ago that one of the most critical VAT design decisions is the level of the threshold above which firms must register. For most developing and transitional countries, we now know that it is likely wiser to set that threshold too high than too low”).

⁷¹ *See* CRAWFORD, KEEN & SMITH, *supra* note 21, at 299 (showing that as of the date of publication, Korea, Mexico, Spain, and Sweden had a threshold of zero); Smulders & Evans, *supra* note 18, at 293-94 (noting that “[o]f the 34 OECD countries with a VAT, 28 have set a threshold under which small businesses do not register for the tax”); ALFONS J. WEICHENRIEDER, SURVEY ON THE TAXATION OF SMALL AND MEDIUM-SIZED ENTERPRISES 13-23, OECD (Sept. 25, 2007).

divisional registration (e.g., whether separate businesses with common ownership are required to be grouped together for VAT registration purposes).⁷²

Having a registration threshold is not a forgone conclusion. Some VATs require each and every business to register.⁷³ Indeed, in the early days of the VAT, the “usual expert advice was to set the entry point [threshold]...as low as possible.”⁷⁴ However, this early advice relied on the implicit assumption that it was costless for taxpayers to comply with and for the government to administer the VAT. In the absence of such costs, there are a number of reasons that the ideal registration threshold would be zero.

Most straightforwardly, not offering an exemption to small suppliers would avoid the inefficiencies that result from having a tax discontinuity: competition between firms of different sizes would not be affected by differential tax treatment.⁷⁵ As the upcoming detailed description of the Keen and Mintz model illustrates, the incentives to remain small or to underreport revenues so as to report revenues below the threshold are strong and salient. Third, exempting small firms “breaks the VAT chain” thereby creating a tax cascade—the key bugaboo of general sales and turnover taxes that the VAT was carefully designed to avoid.⁷⁶ The cascade induces price distortions that can themselves exacerbate production inefficiencies. Moreover, if exempted small businesses sell mostly to consumers (rather than VAT-registered businesses) then the revenue effects of exemption can be negative rather than positive. Fourth, the self-enforcement advantages of a VAT are undercut: a registered firm supplier trading with an exempt customer does not provide an invoice for VAT input tax credit purposes.⁷⁷ The registered firm is therefore not “held to account” in stating accurately for VAT purposes the price of the sale (because the

⁷² See EBRILL ET AL., *supra* note 14, at 115 (“in most cases there is a single threshold, specified as a monetary amount of turnover,” but noting departures); Smulders & Evans, *supra* note 18, at 295 (“[i]n order to mitigate this [firm-splitting], developing countries such as South Africa and Ethiopia have introduced legislation that permits divisional registration but only under exceptional circumstances”).

⁷³ Many jurisdictions apply simplified methods of taxation to firms below the registration threshold, such as “a presumptive tax based on firm characteristics or with reduced reporting requirements.” EBRILL ET AL., *supra* note 14, at 116. See also SCHENK ET AL., *supra* note 3, at 449 (explaining in a case study of China’s VAT the rationale behind the distinction between “regular taxpayers” and “small-scale taxpayers:” “[r]egular taxpayers apply the normal VAT and can both claim input credit and issue creditable VAT invoices to other taxpayers. Small-scale taxpayers, by contrast, pay ‘VAT’ pursuant to a ‘simplified method’—method’ which currently means a turnover tax at 3%—without being able to claim input credit or issue VAT invoices themselves to purchasers. (However, they may request the tax bureau to issue special VAT invoices on their behalf at the 3% rate). For this reason, one may regard the boundary between ‘regular taxpayers’ and ‘small-scale taxpayers’ as the ‘VAT threshold’ in China”); Smulders & Evans, *supra* note 18, at 294 (pointing out that “Chile, Mexico, Turkey, and Spain [and, formerly, Sweden] have not introduced an exemption threshold—resulting in compliance costs for even the smallest businesses”).

⁷⁴ BIRD & GENDRON, *supra* note 1, at 115 (“The idea was essentially to ensure that all potentially taxable transactions were caught in the fiscal net by having the VAT base as wide as possible”). However, this approach was seen as having disastrous consequences with respect to ability to administer a VAT.

⁷⁵ *Id.* at 117. Having a non-zero registration threshold is thought to distort competition between registering and non-registering firms, while (potentially) depriving the government of revenue it could otherwise collect. However, the prediction is not without ambiguity.

⁷⁶ See Keen & Smith, *supra* note 59, at 861, 863.

⁷⁷ *Id.* at 865-66 (noting the “self-enforcing” advantage of the VAT and offering a typology of frauds that can arise under a VAT, including “underreported sales;” however calling into question the strength of the self-enforcement advantage due to its lack of applicability to final sellers to private individuals and lack of incentive to make sure that even with an accurate invoice tax is actually paid and the paper trail can be followed). See also Pomerantz, *supra* note 66, at 2540.

customer does not use that amount to claim an input tax credit). Therefore, under-reporting of sales to intermediate exempt sellers can be expected.⁷⁸

Despite these reasons for requiring universal firm registration via a registration threshold of zero, the real-world experiences of adopting and administering VATs in a wide range of jurisdictions have made it clear that the VAT, for all its advantages, does impose significant compliance costs on registered firms as well as administrative costs for governments. The zero-threshold implications of the early VAT theories thus were brought back for further scrutiny.⁷⁹

A. Model Set-Up

In 2004, economists Michael Keen and Jack Mintz published a model of small firm VAT compliance that sought to take into account the tradeoff between administration and compliance costs on the one hand and raising revenue on the other.⁸⁰ It also modeled the distortions in prices and firm-sizes (through decisions on the part of entrepreneurs to split a firm or to keep it artificially below the threshold) that can result from exempting businesses that qualify as “small.”⁸¹

1. A Simple Model

Keen and Mintz start by deriving an expression for a registration threshold that addresses the tradeoff that exists between raising revenue from a VAT and its imposition of firm-level compliance costs along with government administration costs. In their initial simple model, entrepreneurs’ decisions about how big to grow their firms is made independent of the VAT threshold (e.g., no firm-size distortions). Here, they focus solely on how compliance and administration costs trade off with revenue in a static sense. The objective is to maximize the social value of revenue raised, net of the costs to businesses of complying with the tax and to the government of administering the tax. The simple model has five key parameters.

The first two parameters are measures of average costs: first, the average per-firm cost of registering for and complying with the VAT (“compliance costs”); second, the average per-firm cost to the government of administering and enforcing the VAT (“administration costs”). This implies that freeing a “marginal” firm (e.g., a firm immediately below the threshold) from the obligation to register by slightly raising the

⁷⁸ See Prafula Fernandez & Lynne Oats, *GST and The Small Business* 16 (Curtin Bus. Sch., Working Paper No. 98.01, 1998) (“[s]ince exempt businesses do not need an invoice to claim input credit, the vendors selling to exempt businesses may not issue such an invoice, thereby creating a tendency for VAT avoidance by vendors”).

⁷⁹ See CRAWFORD, KEEN & SMITH, *supra* note 21, at 309 (“the only rationale for excluding smaller businesses from the tax is to save administration costs to the authorities and compliance costs to the taxpayer”).

⁸⁰ See BIRD & GENDRON, *supra* note 1, at 115 (describing the Keen & Mintz model as “elegant,” and summarizing its argument, which simply trades off marginal benefits against marginal costs of registration, as follows: “[e]ven if some revenue is forgone by dropping many small taxpayers, in most countries any revenue loss could likely soon be recouped if the administrative effort freed from processing numerous low-return taxpayer were shifted to the medium and large taxpayers who universally account for most VAT revenue”).

⁸¹ See Keen & Mintz, *supra* note 20, at 574.

threshold yields two fixed cost savings, one from compliance and the other from administration.⁸²

The assumption that each firm bears a fixed compliance cost implies that these costs are regressive with respect to a firm's size (as measured by revenues). As firm size increases, the fixed compliance cost is spread over more revenues.⁸³ However, it is important to note that the issue of *who* bears costs relative to ability to pay or some other measure of resources is, by design, left outside the model.⁸⁴

Similarly, the "fixed cost" assumption in connection with government administration costs implies that the size of the firm makes no difference to how expensive it is for the government to administer and enforce the VAT through audits, investigations, and other means.

Both of these fixed-cost assumptions are likely to be unrealistic when taken to the limit. The compliance costs of VAT for, say, a student who sells refurbished mopeds as a side business are unlikely to be equal to those of a publicly-listed corporation. The same goes for government administration costs: potential VAT noncompliance in a huge organization will be more complicated to investigate and enforce than in the case of a small proprietor. Keen and Mintz relax these assumptions in the more general version of the model discussed below.

In addition to the parameters of average compliance cost and average administrative cost, Keen and Mintz's simple model incorporates three other parameters: a measure of the marginal value of public funds (explained by Keen and Mintz as "the social value...of \$1 in the hands of the government"),⁸⁵ the prevailing rate of VAT

⁸² In particular, the act of registering one's firm to get a VAT number as well as setting up the necessary systems to charge, collect and remit VAT each period as required imposes a cost on firms. Empirical studies of this cost suggest that it is largely fixed: that ongoing compliance itself is not terribly costly but setting up the systems to facilitate compliance is the hurdle that can be daunting for a small operation. In light of these fixed costs, then, concerns about disproportionately burdening small firms become quite understandable. See, e.g., Cedric Sandford, *Minimising the Compliance Costs of a GST*, 14 AUSTL. TAX F. 125, 128 (1997) [hereinafter Sandford, *Minimising*]. It is easy to imagine how an inability to "spread" the initial cost of registration over a sufficient base of revenues could make a crucial difference in the very delicate early stages: it could push some entrepreneurs to not form their businesses in the first place, or for those who do form, it might encourage them to operate informally so as to not comply. If the costs of VAT registration at the outset are high, the returns to remaining informal at the outset are magnified.

⁸³ For example, suppose the annual cost of registering for and complying with the VAT is \$500 per registrant (e.g., it is constant across all firms). For a firm with \$10,000 in annual revenues, VAT compliance costs as a proportion of revenues is 5 percent per year. For a firm with \$1,000,000 of revenues, it is only 0.05 percent. For the small firm, it is as if a \$5 bill is set on fire (or paid over to an accountant) out of every \$100 that comes in, merely to address the issue of VAT compliance. While this extreme situation is highly unrealistic, fixed registration costs (and fixed annual filing costs) are a persistent problem that dogs the VAT. Moreover, presumably Keen & Mintz add the variable cost component of compliance costs to make the set-up of the general model less unrealistic.

⁸⁴ See Keen & Mintz, *supra* note 20, at 564 (noting with respect to the simple model that despite the presence of "vertical equity concerns...In any event, we focus here on the efficiency aspect").

⁸⁵ See *id.* at 562. Ebrill et al. provide another explanation that may be helpful: "[s]uppose that the government values an additional \$1 of revenue at δ . Clearly, one expects that $\delta > 1$, since the only rationale for raising revenue is the belief that resources are more valuable to society in the hands of the government than in those of the taxpayers. Put differently, since taxation involves costs to the private sector additional to those of the resource transfer itself—because it [the tax] distorts economic activity—an additional \$1 of revenue should only be raised if the uses to which it is put are valued by society at more than \$1. Indeed, $\delta > 1$

(which is taken as fixed), and the average ratio of value-added to unit of output represented in each sale.

The last parameter, the proportion of value-added that is embedded in the average sale in the economy, merits explanation. As noted above, value-added is the difference between taxed outputs and taxed inputs. What makes “value-added” a higher proportion of sales in a given economy is the average amount of labor and other untaxed inputs, plus profit, represented in the average sale. For example, suppose an individual works as an independent contractor and the only input she needs to supply is her own labor. Here, the ratio of value added to the total value of the sale will be one (unity), because there are zero taxed outputs. In this case, the VAT functions much like a turnover tax.

A brief summary of the results of the simple model helps motivate the discussion of the more general model. First, holding other parameter values constant, an increase in either average taxpayer compliance costs or average government administration costs should imply a higher threshold. As the aggregate cost savings per firm (from both sources) associated with raising the threshold increase, it makes sense to raise the threshold. Second, an increase in the need for public funds (e.g., a higher marginal value of public funds parameter) implies a lower threshold. This is because incurring compliance and administration costs makes more sense when the social payoff of each additional tax dollar increases. Third, a higher rate of VAT implies a lower registration threshold because more revenue will be sacrificed for each firm that falls below the threshold. Fourth, a higher ratio of value-added to unit of output implies a lower optimal registration threshold.⁸⁶ As noted by International Tax Dialogue, this result “makes a case for setting a reduced threshold for more profitable and/or labor intensive activities.”⁸⁷ Although VAT orthodoxy dictates a single rate across a broad base with no exemptions, this last insight from Keen and Mintz’s model provides some support for a structure observed in a handful of VAT jurisdictions such as France, Ireland and Malta: registration thresholds for firms providing services are lower than those applicable to firms selling goods or manufacturing products.⁸⁸

2. *Model with Firm-Size Effects*

Keen and Mintz then move beyond the simple model, in which firm size is static in response to the threshold, to a general-equilibrium approach. In particular, their general model accounts for a key dynamic in thinking about optimal registration thresholds: entrepreneurs’ decisions about firm size may be influenced by the registration threshold. The sharply discontinuous treatment of firms above and below the threshold

can be thought of as corresponding precisely to the deadweight loss associated with the distortion of economic behavior.” See EBRILL ET AL., *supra* note 14, at 118.

⁸⁶ The intuition for this result is subtle and not covered in the treatment of the simple model in Ebrill et al. See Keen & Mintz, *supra* note 20, at 569-70. But see EBRILL ET AL., *supra* note 14, at 120 (“...[F]irms characterized by a high ratio of value-added to sales and selling to unregistered purchases—small traders providing services directly to final consumers [who will be unregistered, because only businesses are required to register] being the key group here—are likely to find it worthwhile to be exempt from VAT”).

⁸⁷ See *The Value Added Tax: Experiences and Issues*, in International Tax Dialogue, *supra* note 41, at 15.

⁸⁸ See *infra* Section III.A, Table 1.

may influence entrepreneurs' behavior and thus induce a misallocation of resources.⁸⁹ Such behavioral distortions can occur in a variety of ways: restricting growth of a firm, splitting a firm to ensure each firm's revenue is below the threshold, or hiding revenue from the tax authorities.⁹⁰ All can result in firm "bunching" below the threshold, although many real-world VATs are attentive to the tax avoidance dimension of firm-splitting and have rules for "compulsory grouping" of firms with common ownership or provide leeway for the tax administrator to take into account the revenues of related parties (e.g., consolidating for threshold evaluation purposes).⁹¹

Here, they add a number of parameters not present in the simple model. Individuals choose between producing two goods: a taxed good and an untaxed good.⁹² Individuals differ in their productivity with respect to the production of the taxed good,⁹³ but not with respect to production of the untaxed good (here, it's helpful, as Keen and Mintz point out, to think of the untaxed good as leisure).⁹⁴ Production in both sectors is modeled as occurring in the middle of a supply chain: each unit of output requires a fixed amount of a taxed input.⁹⁵ Finally, with respect to firms' costs of compliance, the general model allows for both a fixed component of compliance costs, as in the simple model, and a variable component, in which compliance costs increase as firm revenues increase.⁹⁶ The idea behind this new variable component of compliance cost is that as firms get larger and more complicated (e.g., more input and output transactions), VAT compliance costs will—at least to some extent—increase as well. In other words, VAT

⁸⁹ See Keen & Mintz, *supra* note 20, at 565 ("allowing for both a fixed component to these costs and a part related to scale (each non-negative)").

⁹⁰ Namely, competition between firms is affected to some degree, and incentives to remain artificially small—or even to split to avoid exceeding the threshold—are present.

⁹¹ For instance, Antigua and Barbuda's VAT provides that the tax administrator can take into account the sales of related parties in making the determination of whether a supplier is required to register. See Sales Tax Act of 2006 § 9(3)(c) (Ant. & Barb.) available at <http://laws.gov.ag/acts/2006/a2006-5.pdf> [<https://perma.cc/7TUY-3V28>] ("The Commissioner may require the person to treat the value of supplies made by that person as including the value of supplies made by a related person if he is satisfied that it is appropriate to do so due to the nature of the activities carried out by the related person, the way in which the taxable activities of the taxable person and the related person are carried on, the connections between those persons or between the activities carried on by them, or any other relevant factors").

⁹² See Keen & Mintz, *supra* note 20, at 564 ("[w]e imagine a world in which individuals allocate their time between the production of the taxed good (dedicating to this an amount of labor L) and some untaxed good, (allocating to this labor of $1-L$, the time endowment being unity)". This approach allows the untaxed good to be conceptualized as either "leisure" (which is hard to measure and thus tax) or production in the exempt (unregistered, or informal) sector. Although Keen & Mintz do not discuss optional registration at any point in their article, their general model's micro-foundational approach seems to allow for this dynamic.

⁹³ See *id.* ("Output in this [the taxed] sector is $f(nL)$ [arguments are productivity n and labor supply L], where [the function] is strictly increasing and strictly concave"; this functional form for $f(nL)$ implies diminishing marginal productivity of labor in the taxed sector).

⁹⁴ *Id.* (Here, the intuition is that there is a cap on productivity in the untaxed sector because it cannot grow to scale; or, if the untaxed sector is conceptualized as the production of leisure, the assumption implies that individuals are equally productive in this capacity. While this latter conceptualization implies an interesting philosophical point and perhaps a specific normative commitment, it is incidental to the optimal VAT threshold result).

⁹⁵ *Id.* (noting however that this fixed amount of taxed intermediate input does not account for the endogeneity of input supply decisions: firms below the threshold face an incentive to "self-supply" inputs because of their inability to claim input tax credits).

⁹⁶ *Id.* at 565 ("allowing for both a fixed component to these costs and a part related to scale (each non-negative)").

compliance costs in the (arguably more realistic) general model are *less* regressive with respect to firm revenues than in the simple model.

Keen and Mintz show that, once the optimal allocations of labor across the taxed and the untaxed sectors are determined,⁹⁷ individuals with lower productivity will choose a firm size beneath the VAT registration threshold. For individuals with higher productivity, the optimal firm size will be more than the VAT registration threshold. And for the third possibility—individuals with productivities between these two amounts—production will “hover infinitely close to, but just below, the threshold.”⁹⁸ This translates into one of the key takeaways of Keen and Mintz’s formal analysis: for entrepreneurs of intermediate productivity, bunching will occur just below the threshold and there will be a localized gap in the distribution of firms by size immediately above the threshold.⁹⁹

B. Results and Policy Implications

But what about the optimal choice of threshold?¹⁰⁰ Keen and Mintz summarize the intuition of their expression for the optimal threshold as follows.

The expression has four components that summarize the subtle efficiency effects of a (small) increase in the threshold. First, upon such an increase, revenue may be lost from firms that now fall below the (marginally higher) threshold; noting, however, that due to bunching, there are no firms that are immediately above the threshold, so this effect is likely to be small.¹⁰¹ Second, an increase in the threshold is not unambiguously revenue-decreasing: unregistered firms still contribute to VAT revenues by paying tax on their inputs.¹⁰² Third, the taxing agency saves administrative costs for each firm that now falls below the threshold.¹⁰³ Fourth, an increase in revenue (net of input credits) results from an increase in *production* by the mass of firms that formerly had bunched just below the threshold and now are free to expand.¹⁰⁴

Taking the components together, the intuition behind the general model’s optimal threshold expression is clear: relaxing the constraint that induces firms to remain small has much to recommend it, even in comparison to the simple model.¹⁰⁵

⁹⁷ *Id.* at 568.

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ Keen & Mintz acknowledge that this step is “routine but the details...are messy.” *Id.* at 569 (using the standard approach of specifying an indirect utility function reflecting profits of the individual entrepreneur; maximizing profits under the simplifying assumption that individuals have uniform preferences over the taxed versus untaxed goods). Here, the objective of government policy is maximizing the sum of individual utilities subject to the constraint that labor is allocated optimally. *Id.* at 568-69 (the distribution of labor across the taxed versus untaxed sectors functions as the incentive compatibility constraint subject to which the government’s objective function is maximized).

¹⁰¹ *Id.* (“there are none such” firms producing exactly at the threshold).

¹⁰² *Id.* (“[t]his mitigates the revenue loss in the previous term”).

¹⁰³ *Id.* at 571.

¹⁰⁴ *Id.*

¹⁰⁵ The reference to administration and not compliance costs saved as firms drop out of the tax when the threshold is raised is intentional. Keen & Mintz comment on a notable feature of their expression for the optimal threshold: “the absence of any direct role for compliance costs.” *Id.* at 570. Weirdly, the parameter corresponding to the fixed component of compliance cost drops out in the optimization process. Keen & Mintz maintain that “the reason for this becomes clear on recalling the optimization problem being solved by those who initially just prefer to pay tax rather than stay below the threshold: balancing the

To bring their model to bear on real-world VAT threshold decisions made by legislators, Keen and Mintz use data relating to Canada's VAT in a simulation exercise.¹⁰⁶ They use Canadian estimates (circa 2000) for each of the model's parameters and simulate the implied optimal threshold for a set of VAT rates in two different economic settings: one in which firms are evenly distributed along a continuum of size, and another in which the distribution of firms is skewed towards the small (e.g., number of firms operating at each revenue level is decreasing as revenues rise). For this second and more realistic setting, the optimal thresholds implied by Keen and Mintz's simulations are startlingly high: for a VAT rate of 15 percent, the optimal threshold estimate is \$101,500 (in 2002 dollars).¹⁰⁷

At the threshold levels yielded by Keen and Mintz's simulations, more than half (in the non-uniform case) of firms in the economy fall below the threshold.¹⁰⁸ This may strike one as shocking. After all, what meaning does "small" have if half of businesses are small? However, in all but one of the simulations, the firms above the threshold account for more than 90 percent of the output (turnover as measured by revenues) in the economy. This is instructive: particularly where the firms cluster towards the small, the high-threshold implications of the model are particularly compelling.

It is also worth noting that Keen and Mintz, in their simulations, used \$100 for the fixed component of both compliance and administration costs.¹⁰⁹ Taking into account that this parameter is in nominal terms, the value is surely higher today, although one might speculate that advances in online registration and electronic systems have offset rising consumer prices. Making the very conservative assumption that compliance and administration costs have stayed constant in nominal terms, one clear implication of the simulation results is that the status quo \$30,000 Canadian VAT registration threshold is likely to be far below the efficiency-maximizing level.¹¹⁰ However, Keen and Mintz point out that the model offers the possibility of multiple equilibria, including one where the threshold is very low and the other where it is very high.¹¹¹ These two equilibria have in

discontinuous gain in net profit against the compliance costs incurred... the gain that such a firm reaps by now cutting its output to below the threshold, so saving itself compliance costs, is precisely offset by the loss that it sustains voluntarily through a discontinuous cut in its sales." *Id.* The absence of fixed compliance costs in the final expression for the optimal threshold in some sense can be seen as underscoring the complete separateness of concerns about the regressive distribution of compliance costs from concerns about efficiency. Administration costs factor into the efficiency analysis, but the incentive compatibility constraint faced by entrepreneurs makes compliance costs wash out in equilibrium.

¹⁰⁶ *Id.* at 572 ("[c]alibrating to Canadian data" (citations omitted)).

¹⁰⁷ *Id.* at 573. The theoretical ambiguity of the relationship between the rate of VAT and the optimal threshold in the case of a non-uniform firm-size distribution is a particularly interesting implication of the general model but not particularly relevant to the discussion here.

¹⁰⁸ *Id.* (Table 2, line 2 showing the proportion of firms above threshold in each of the cases.)

¹⁰⁹ *Id.* at 572 ("fixed compliance and administration costs... are both \$100 per registrant").

¹¹⁰ See GST, *supra* note 42 (the threshold was set when the federal Goods and Services Tax was adopted in 1991 has not been changed since that time).

¹¹¹ See Keen & Mintz, *supra* note 20, at 572 ("It seems quite possible that this [the optimal threshold problem] may have more than one solution. The element of increasing returns in the administration and compliance cost functions creates the possibility of one (rather trivial) kind of nonuniqueness, and others would arise with more general functional forms. A more novel possibility seems to arise, however, from the observation (here speaking very loosely) that the production inefficiency associated with a threshold can be mitigated by setting the threshold either very low or very high: in either case the bulk of taxpayers will be treated identically. This suggests that there may be cases in which two local optima arise: one has a low threshold, with high collection costs [are] offset by a relatively low level of production inefficiency and a

common the feature that few firms will be “affected” by the threshold: bunching won’t be realistic for most firms where a threshold is close to zero, nor will it be within reach for most firms where a threshold is very high.

In sum, Keen and Mintz’s expression for the optimal threshold underscores an important insight: firms’ propensities to avoid tax by manipulating their size compromise production efficiency. Under economic conditions similar to those used to simulate the model, a higher threshold rather than a lower threshold is likely to maximize efficiency. This ensures that a majority or near-majority of firms are VAT-exempt. Moreover, Keen and Mintz come to this conclusion independent of any equity or other fairness considerations: exempting the small minimizes economic waste (e.g., inefficiencies), regardless of whether it is desirable to exempt the small on other normative grounds. The next Part turns from theory to practice by asking how firms behave in response to real-world registration thresholds.

IV. PART III: REGISTRATION THRESHOLDS IN PRACTICE

In the years since Keen and Mintz’s model was published, the key conceptual contribution driving its high-threshold policy recommendation—that thresholds impose efficiency costs through distortions to firms’ production decisions—has attracted growing empirical support. Concurrently, however, many countries’ VAT thresholds have remained lower than is likely to be optimal. This Part reviews the evidence for each of those claims.

A. Firm Bunching Below Registration Thresholds

Research on the Japanese and, more recently, the UK and Finnish VATs has shown that VAT thresholds are not neutral with respect to entrepreneurs’ decisions about the size of their firms. Rather, these three studies underscore that registration thresholds can induce bunching immediately below the registration threshold.

First, a 2009 study by Kazuki Onji documented the effects of the introduction of a preferential simplified VAT filing regime for small businesses as part of Japan’s 1989 overhaul of its tax system. This overhaul included a relief provision for small businesses in the form of a presumptive input percentage that could be applied by eligible firms.¹¹² Specifically, firms below the threshold (for the simplified regime) of 500 million yen (\$3.3 million) were permitted to calculate tax owing with a presumptive input percentage of 80 percent, thereby converting the VAT into a turnover tax.¹¹³ Nearly 97 percent of all firms in 1989 were eligible.¹¹⁴

To the extent that an eligible firm had a taxable-input-to-sales ratio of more than 80 percent, electing into the simplified regime would reduce both the overall tax paid (relative to the non-simplified regime) and eliminate the compliance burden of calculating input credits.¹¹⁵ Using two waves of survey data (1988 and 1990, to capture the periods before and after the reform) from all publicly traded companies and a small

relatively high level of revenue; the other has a relatively high threshold, with relatively low revenues offset by relatively low collection costs and production inefficiency”).

¹¹² See BIRD & GENDRON, *supra* note 1, at 531.

¹¹³ Onji, *supra* note 22, at 767-68.

¹¹⁴ *Id.* at 768

¹¹⁵ *Id.*

number of prominent privately held companies in Japan, Onji found that the introduction of the simplified regime induced bunching below the eligibility threshold.¹¹⁶ These results provide “evidence...consistent with the hypothesis that large firms are ‘masquerading’ as many small firms” via the behavioral response of splitting.”¹¹⁷

Second, a working paper by Jarkko Harju, Tuomas Matikka and Timo Rauhanen (2016) evaluates the prevalence of bunching using VAT data from all firms that were operating in Finland from 2000 to 2011.¹¹⁸ Finland has a particularly low registration threshold (8,500 euros, or about \$10,500 US), in contrast Japan’s high threshold for the simplified system.¹¹⁹ As a result, Harju et al.’s study seeks to disentangle the influence on firm size decisions of VAT compliance costs as distinguished from the effect of the tax itself.¹²⁰ To do this, the paper exploits several changes in the rules relating to small supplier registration and compliance thresholds, including a VAT-relief measure in which firms could apply for a lower rate of VAT that gradually increases above the threshold, as well as VAT reductions targeted towards specific industries.¹²¹

Harju et al. find strong evidence of bunching below the threshold but no evidence that bunching decreased with reductions in the VAT rate.¹²² However, bunching did decrease in response to a reform designed to mitigate compliance costs associated with accessing the relief measures.¹²³ On these bases, Harju et al. conclude that high VAT compliance costs at the very low end of the firm-size spectrum may be a key driver of bunching.¹²⁴

Third, a 2016 contribution by Li Liu and Benjamin Lockwood develops a formal model for studying the two key dimensions of behavioral responses to a VAT “notch” (as the discontinuous tax treatment induced by a registration threshold is called in the public economics literature): voluntary registration and bunching.¹²⁵ They show that a firm is more likely to voluntarily register and, conversely, less likely to restrict its sales to allow it to “bunch” beneath the threshold when “either (i) the cost of inputs relative to sales is high, or (ii) when the proportion of B2C sales by the firm is low.”¹²⁶ The intuition for (ii) is “simply that if most customers are VAT-registered, the burden of an increase in VAT

¹¹⁶ *Id.* at 771-72.

¹¹⁷ *Id.* at 772 (applying a semiparametric density decomposition technique to net out confounding influences).

¹¹⁸ See Harju et al., *supra* note 32, at 10.

¹¹⁹ *Id.* at 2.

¹²⁰ *Id.* at 3.

¹²¹ *Id.* at 3-6, 22.

¹²² *Id.* at 1.

¹²³ *Id.* at 30 (“Importantly, there is a significant increase in the take-up rate in 2011. From 2010 onwards, firms could apply for the relief with the same form they use to declare sales and purchases subject to VAT. This seems to have increased the share of firms that applied for the relief. Importantly, the increase in take-up is reflected in the excess bunching estimate. Figure 11 above shows that excess bunching moderately decreased in 2010-2011 compared to previous years. This supports the view that the increase in transparency and the simplification of the relief system affect observed firm behavior at the threshold, at least to some extent.”).

¹²⁴ *Id.* at 36 (“We find that changing the tax system from a VAT notch to a VAT kink did not significantly decrease the bunching effect. This suggests that compliance costs largely explain observed responses. We find no clear traces of tax avoidance or evasion, which suggests that firms respond by reducing output.”).

¹²⁵ Liu & Lockwood, *supra* note 32, at 2-3.

¹²⁶ *Id.* at 3.

can easily be passed on in the form of a higher price, because the customer itself can claim back the increase...[and] for (i), [the intuition] is that when input costs are important, registration allows firm to claim back a considerable amount of input VAT.”¹²⁷

Liu and Lockwood test the predictions of their model on a massive dataset constructed by connecting “the universe of VAT returns to the universe of corporation tax records in the UK” between the time periods April 1, 2004 and March 30, 2010.¹²⁸ They find evidence of voluntary registration and bunching that is strongly consistent with the predictions of their model. With particular respect to bunching, they summarize their findings as being threefold:

First, the VAT notch creates evident bunching below the threshold. Excess bunching ranges from 0.82 to 1.29 times the height of the counterfactual distribution, and is strongly significant in all years during the sample period. Second, excess bunching tracks precisely the annual change in the nominal VAT notch due to adjustment to inflation... Third, in contrast with the large bunching below the threshold, there is a small hole in the distribution above the VAT notch.¹²⁹

In addition, Liu and Lockwood find that a firm’s propensity to bunch below the threshold is consistent with the model: firms are more likely to bunch as their share of sales made to VAT-unregistered consumers rises, and less likely to bunch as their ratio of taxable inputs to sales rises.¹³⁰

How do these three empirical studies of firm bunching in response to a VAT connect with the Keen and Mintz model? Importantly, none of the bunching studies provide estimates of the efficiency losses associated with bunching. Onji is clear that his methodology and data do not allow him to estimate the efficiency effects that the observed level of firm bunching might imply.¹³¹ And although Harju et al. note that bunching is “relatively permanent, which implies that the threshold decreases growth of small businesses,” and conclude that their bunching result “implies notable efficiency implications,” such effects were not (and could not be) estimated.¹³² Liu and Lockwood explicitly discuss the theoretical challenges of estimating the normative impact of thresholds and are clear that they take no position on the welfare effects of bunching.¹³³

¹²⁷ *Id.*

¹²⁸ *Id.* at 20-21.

¹²⁹ *Id.* at 25.

¹³⁰ *Id.* at 26-27, 31.

¹³¹ See Onji, *supra* note 22, at 773 (“...the present approach is not suitable for estimating revenue losses. By understanding the tax gains to firms, we learn about the extent of revenue drains caused by tax avoidance, but we can also gauge the extent of efficiency losses. The efficiency losses can occur by maintaining organizational structures that firms would not have chosen otherwise. But since a rational firm would not incur costs greater than the benefits, the amount of tax benefits provides the upper bound for the efficiency loss”) (citation omitted).

¹³² Liu & Lockwood, *supra* note 32, at 1.

¹³³ See *id.* at 18 (“First, unlike the personal income tax case, the VAT sufficient statistic T does not depend just on the tax code. In particular, [it] also depends on [some] model parameters...[that] are harder to specify. Second, as shown in Lockwood (2016), in the presence of a notch, the elasticity of the tax base (in

Efficiency estimates (or lack thereof) aside, these studies conclusively show that bunching is present in a variety of VAT contexts ranging from a very low threshold (Finland) to high (UK), and very high (Japan) thresholds. Accordingly, they can be seen as validating the key tradeoff (between the threshold and production efficiency) identified by Keen and Mintz's analysis.

In light of the bunching evidence, it is unsurprising that Keen and Mintz's high-threshold recommendation has attained the status of "conventional wisdom" among VAT experts.¹³⁴ Setting thresholds high reduces the concentration of firms that have revenues in the vicinity of the threshold, thus limiting the prevalence (although not necessarily the magnitude) of bunching.

B. Current Registration Thresholds

Outside of the rarefied world of VAT specialists, the wisdom of high thresholds is not a foregone conclusion. Over a decade ago, a report of the International Tax Dialogue (2005) noted the presence of disparate thresholds and offered an observation that remains largely accurate today: "[t]here is considerable variation across countries in the level of the VAT threshold, ranging from a few thousand dollars to over US\$200,000. Even within the European Union, where there is a common legal framework governing the VATs of Member States, the threshold levels vary from zero to approaching US\$100,000."¹³⁵

To get a sense of this variation, Table 1 lists the domestic-business registration thresholds (in 2016 purchasing-power-index-adjusted United States dollars) in effect at the beginning of 2018 for each OECD country (except, of course, the United States, which does not have a VAT).¹³⁶ While this list is neither representative of the average global VAT threshold (it is a rich-country group) nor does it reflect important nuances in how thresholds work on the ground,¹³⁷ it does facilitate blunt comparisons of the magnitude of the registration threshold across this set of countries.

the case of the personal income tax, taxable income), is no longer a sufficient statistic for the marginal deadweight loss of the tax, so elasticity estimates are of less interest from a normative [efficiency] point of view. So, for these reasons, we do not attempt elasticity estimates.").

¹³⁴ See BIRD & GENDRON, *supra* note 1, at 115.

¹³⁵ See *The Value Added Tax: Experiences and Issues*, in International Tax Dialogue, *supra* note 41, at 5.

¹³⁶ As opposed to foreign businesses doing business in the jurisdiction—sometimes these are lower, so I list the domestic thresholds to err on the side of conservatism (e.g., give higher thresholds the benefit of the doubt).

¹³⁷ For instance, it does not take into account different thresholds for different kinds of sales (e.g., goods versus services). It ignores the important role that may be played by simplified schemes such as a turnover tax, a reduced rate of VAT, or a presumptive input credit for all, or a subset of, small firms. See Keen & Mintz, *supra* note 20, at 562 (discussing various approaches to qualifying the threshold through specific rules through a "wide variety of measures"). See also Michael Smart, *Departures from Neutrality in Canada's Goods and Services Tax*, 5 U. CALGARY SCH. PUB. POL'Y RES. PAPERS 1, 20 (2012) (describing the distortions that can result from such approaches, using the example of the Canadian GST's "Quick Method" and the "Simplified Method" by which traders whose taxable sales do not exceed \$200,000 and \$500,000, respectively, can avail themselves of simplified reporting schemes).

Table 1: OECD VAT Threshold Values¹³⁸
 (countries with thresholds Below PPP-adjusted \$50,000 US in **bold**)

<i>Country</i>	<i>US \$, Purchasing Power Parity-Adjusted (based on GDP 2016)</i>
Australia	\$50,336
Austria	\$37,500
Belgium	\$31,250
Canada	\$24,000
Chile	\$0
Czech Rep.	\$76,923
Denmark	\$6,793
Estonia	\$74,074
Finland	\$10,989
France	\$101,841
Germany	\$22,436
Greece	\$16,667
Hungary	\$59,259
Ireland	\$92,593
Israel	\$25,850
Italy	\$41,667
Japan	\$100,000
Korea	\$27,429
Latvia	\$80,00
Luxembourg	\$33,333
Mexico	\$0
Netherlands	\$1,640
New Zealand	\$40,816
Norway	\$4,950
Poland	\$111,732
Portugal	\$16,949
Slovak Rep.	\$101,612
Slovenia	\$83,333
Spain	\$0
Sweden	\$3,304
Switzerland	\$81,301
Turkey	\$0
United Kingdom	\$121,429
<i>Average</i>	<i>\$48,841</i>
<i>Median</i>	<i>\$32,292</i>

¹³⁸ See OECD, *OECD Tax Database*, <http://www.oecd.org/tax/tax-policy/tax-database.htm#VATTables> [<https://perma.cc/R386-4GJH>].

The heterogeneity of the threshold levels is the most immediately striking feature of Table 1. The average threshold is \$48,841 while the median value is approximately \$32,000.

On the one hand, very low or even zero thresholds are not uncommon. 60 percent of the countries listed in Table 1 have a threshold value that is less than (adjusted) \$50,000 US.¹³⁹ On the other hand, a number of countries (France, Japan, Poland, Slovak Republic, UK) are high-threshold outliers, with thresholds in excess of \$100,000. Moreover, between 2016 and 2018 there have been some significant increases in thresholds that have occurred:¹⁴⁰ Estonia from 16,000 EUR to 40,000 EUR, Hungary from 6,000 to 8,000 HUF, Latvia from 40,000 EUR to 50,000, Poland from 150,000 to 200,000 PLN, and Sweden from zero to about \$3,000.¹⁴¹ As an example of increases farther back in time, in 2007, Australia increased its threshold from \$50,000 to \$75,000 AUD.¹⁴²

Looking outside of the OECD, a number of new VATs have been adopted in recent years with low to moderate thresholds, and existing thresholds have been increased.¹⁴³ Tanzania and Zambia increased their thresholds in the early 2000s.¹⁴⁴ Bangladesh's VAT was adopted with a threshold of about \$5,000 US in 1991, but was progressively raised through amending legislation: the current statute has a threshold of approximately \$29,500 for enlistment and \$98,500 for registration.¹⁴⁵ And the planned

¹³⁹ See OECD, *Table 2.A2.3. Annual turnover concessions for VAT/GST registration and collection (domestic businesses)*, <http://www.oecd.org/ctp/consumption/table-2-A2-3-VAT-annual-turnover-concessions-VAT-registration-collection-2018.xlsx> [<https://perma.cc/E5E6-T25J>] (last visited Apr. 7, 2018) (showing the 20 of 33 OECD countries had a US \$PPP-adjusted threshold below \$50,000 as of the beginning of 2018).

¹⁴⁰ See *OECD Tax Database*, *supra* note 138 (comparison of country data on 2018 tab with that of 2016 tab).

¹⁴¹ In 2008, the EU introduced the Small Business Act, entitled “Think Small First”—A Small Business Act for Europe. Commission of the European Communities, “Think Small First”—A Small Business Act for Europe, COM (2008) 394 Final (June 2008). One of its main goals was to simplify the regulatory and policy environment for small and medium sized enterprises in the EU; it invited member states to reduce the administrative burden on SMEs by permitting them to raise their VAT thresholds up to €100,000. *Id.* at § 2.III (“adopt the Commission proposal which would permit Member States to increase the threshold for VAT registration to €100 000”).

¹⁴² See *A New Tax System (Goods and Services Tax) Act 1999*, Compilation No. 68 (2016) (Cth) (Austl.), available at <https://www.legislation.gov.au/Details/C2016C00695> [<https://perma.cc/L4E4-4R79>]. However, Australia's Black Economy Taskforce's interim report asked whether lowering the GST threshold might be warranted due to “technological developments since the tax was introduced.” See BLACK ECONOMY TASKFORCE, *Interim Report* 47 (Mar. 2017), https://consult.treasury.gov.au/tax-framework-division/black-economy-taskforce/supporting_documents/BE_IR.pdf [<https://perma.cc/7Z8Y-LL8J>].

¹⁴³ For instance, Laos adopted a VAT in 2009 with a threshold of \$49,000 US (4 million Laotian Kip). See PRICEWATERHOUSECOOPERS, *Lao PDR: Value-added Tax* (2013), <http://taxsummaries.pwc.com/ID/Lao-PDR-Corporate-Other-taxes> [<https://perma.cc/S6JP-9W8W>] (last updated Dec. 18, 2017). See also thresholds of other recently-adopted countries: Gambia (2013), Saint Kitts and Nevis (2010), Congo (2012), Seychelles (2012), Niue (2009), Grenada (2010), Sierra Leone (2009), in ROYAL MALAYSIAN CUSTOMS DEP'T, *Malaysia Goods & Services Tax (GST)*, (Jan. 24 2014), http://gst.customs.gov.my/en/gst/Pages/gst_ci.aspx [<https://perma.cc/7XW8-ATTF>].

¹⁴⁴ See INT'L MONETARY FUND FISCAL AFFAIRS DEP'T, *REVENUE MOBILIZATION IN DEVELOPING COUNTRIES* 63-64, 70 (2011), <https://www.imf.org/external/np/pp/eng/2011/030811.pdf> [<https://perma.cc/B82E-CTF4>].

¹⁴⁵ See Nahida Faridy et al., *Complexity, Compliance Costs and Non-Compliance with VAT by Small and Medium Enterprises in Bangladesh: Is There a Relationship?*, 29 AUSTRALIAN TAX F. 281, 285 n.15 (2014) (describing trajectory of thresholds).

initial (Phase One) registration threshold for the Gulf Cooperation Council VAT is reported to be quite high.¹⁴⁶

Thus, higher thresholds appear to be gaining traction, albeit unevenly. From a normative (efficiency) standpoint, however, Keen and Mintz's conclusions offer no direct help concerning whether any of the countries in Table 1 have a registration threshold that is "too low." To generate the high-threshold results from simulations of their model, Keen and Mintz used parameter values drawn from late-1990s Canadian macroeconomic estimates. The recommended threshold is thus not a one-size-fits all number.

Reproduced below is a table from Ebrill et al.'s (2001) VAT handbook that makes this point, albeit in a dated fashion (some thresholds, including Bangladesh's, have been modified).

	Actual Threshold [circa 1999]	IMF Recommendation
Albania	\$32,000	\$50,000
Bangladesh	32,609	34,900
Benin	80,000	80,000
Bulgaria	42,000	50,000
Burkina Faso	80,000	80,000
Cameroon	80,000	60,000
Croatia	8,000	40,000
El Salvador	6,000	12,000
Georgia	2,400	12,000
Mauritania	46,000	55,000
Mongolia	18,750	18,750
Pakistan	22,700	70,000
Philippines	14,000	14,000
Sri Lanka	33,000	30,000
Uganda	50,000*	20,000

*\$20,000 at introduction

¹⁴⁶ See Sarah Daa, *UAE Outlines VAT Threshold for Firms in Phase 1*, GULF NEWS (Aug. 15, 2015, 8:36 PM), <http://m.gulfnews.com/business/economy/uae-outlines-vat-threshold-for-firms-in-phase-1-1.1847025> [<https://perma.cc/LQ6U-5SSDC>] (indicating that businesses with turnover in excess of Dh 3.75 million (over US \$1 million) would be required to file, with optional registration for smaller, but not the smallest, firms).

¹⁴⁷ See EBRILL ET AL., *supra* note 14, at 114 (omitting China and Vietnam; these countries' actual thresholds cases were more complicated). The data was gathered from a survey that was conducted in the late 1990s (most surveys were completed in spring/summer 1998). The goal of the survey was to get a sense of the pattern of VATs implemented in developing and transitioning countries and how the actual practice in countries compared to the advice provided by FAD staff.

Here, the recommended threshold level ranges from \$12,000 in El Salvador and Georgia to \$80,000 in Benin and Burkina Faso, underscoring the potential pitfalls of any rule of thumb.

Other than those reproduced in Table 2, estimates of the optimal VAT thresholds and accompanying policy recommendations for different jurisdictions are not publicly available.¹⁴⁸ Such recommendations may be more likely to be the subject of technical assistance rather than academic work, especially to the extent that they are seen as mere applications of the general theoretical framework established by Keen and Mintz.¹⁴⁹ One exception is a stand-alone report released in April 2006 by Kelly Edmiston and Richard Bird, which examined *ex post* the experience of Jamaica in setting its initial threshold upon adoption of a VAT in 1991 and adjusting it periodically to account for high levels of inflation.¹⁵⁰ Even after reforms that substantially raised the threshold to J\$300,000 in 2003, it was only a quarter (in real terms) of the threshold initially imposed in 1991, and barely half of what Edmiston and Bird state is “a very rough estimate of the ‘correct’ threshold...[of] about J\$600,000.”¹⁵¹

In addition, the optimality of higher thresholds has been borne out by the VAT adoption and implementation experiences of a number of different countries.¹⁵² According to the IMF survey reported in Ebrill et al., low registration threshold levels were cited as significant challenges for the VATs that were adopted in Albania, Croatia and Georgia.¹⁵³ The “near failure” of the VAT in Uganda in 1996 “is in large part attributed to a low threshold, which in the event was quickly raised from a level of \$20,000 at the time of introduction to \$50,000 only five months later.”¹⁵⁴ It has also been suggested that the initial failures of the VAT in Malta and in Ghana were the result of an inappropriately low threshold.¹⁵⁵

¹⁴⁸ Even in the most exciting recent work on VAT threshold issues that is in progress by economists, discussion of the implications for (or even speculations about) recommended thresholds seems almost conspicuously absent. See Liu & Lockwood, *supra* note 32, at 30; see also Harju et al., *supra* note 32, at 4.

¹⁴⁹ In Part IV, I return to this issue in suggesting areas for future research that could bolster (or possibly undermine, but, in any event, inform) the case for revisiting low registration thresholds.

¹⁵⁰ See Kelly D. Edmiston & Richard Bird, *Taxing Consumption in Jamaica*, 35 PUB. FIN. REV. 26, 26-27 (2007).

¹⁵¹ In 2006 US dollar terms, this is about \$9,676 (using historical currency conversion tool FXTOP, *Currency Converter* [<https://perma.cc/YQY2-QFFR>] (last visited Mar. 9, 2018)). See Edmiston & Bird, *supra* note 150, at 47.

¹⁵² See BIRD & GENDRON, *supra* note 1, at 114.

¹⁵³ See EBRILL ET AL., *supra* note 14, at 113.

¹⁵⁴ *Id.* at 114.

¹⁵⁵ See *The Value Added Tax: Experiences and Issues*, in *International Tax Dialogue*, *supra* note 41, at 16 (“[i]ndeed, in both Ghana and Malta an initially low threshold was one of the primary reasons for the failure of their first VAT”). With respect to Ghana, the failure of the 1994 VAT was seen as being hastened by its high rate (17.5%, noticeably higher than the former 15% Ghanaian sales tax) and low registration threshold (25 million cedi, or about \$15,000 US). See Miranda Stewart, *Tax Policy Transfer to Developing Countries: Politics, Institutions and Experts*, in *GLOBAL DEBATES ABOUT TAXATION* (Holger Nehring & Florian Schui eds., 2007), 188 n.53 (citing Rimmer, Herbst & Killick) [hereinafter Stewart, *Transfer*]. The subsequent re-introduction of the VAT in 1998 featured a lower rate (ten percent) and registration threshold that was eight times the magnitude of the repealed VAT (200 million cedi, or about \$80,000 US). Whether the connection is causal or merely circumstantial, the new Ghanaian VAT has met with greater success and political durability. See also PRICHARD, *supra* note 5, at 91.

From the other direction, the experience of countries that have adopted *higher* registration thresholds appears to have generally been positive. However, with the exception of Edmiston and Bird's case study of the Jamaica,¹⁵⁶ research is sparse. The UK's threshold is higher than any EU member state and is the second highest (after Japan) among OECD countries (£85,000 from April 1, 2017, or about \$121,000 US).¹⁵⁷ The Mirrlees Report, a comprehensive review of the British tax system, noted that "[t]here is good reason to suppose that the relatively high threshold should be counted as a strength of the UK VAT."¹⁵⁸

What does all this imply about the validity of a rule-of-thumb optimal registration threshold? One appears to have emerged, albeit with caveats. With reference to developing economies, Bird and Gendron note that "[a]s time went on...and more experience with the difficulties of imposing general sales taxes [including VATs] in fragmented economies with large informal sectors was accumulated, conventional wisdom changed...[and] now suggests that the threshold should be set considerably higher in most countries—say, at a level of U.S. \$100,000 [\$119,000 in 2016 dollars]."¹⁵⁹

C. Possible Explanations for the Persistence of Low Thresholds

A number of commentators have cited the persistence of low VAT thresholds as a puzzle.¹⁶⁰ What factors might be responsible for this divergence?

In the VAT literature, two general hypotheses have emerged to explain the disconnect between VAT theory and practice with respect to threshold-setting: fears about revenue losses and concerns about unfairness to large businesses.¹⁶¹ In 2001, Ebrill et al. stated:

¹⁵⁶ See Edmiston & Bird, *supra* note 150, at 26-27.

¹⁵⁷ See HM REVENUES AND CUSTOMS, *Policy Paper: VAT Registration Threshold* (Mar. 8, 2017), <https://www.gov.uk/government/publications/vat-registration-threshold/vat-registration-threshold> [<https://perma.cc/G4FP-TH28>] (noting however that there is a separate "deregistration threshold" that is set 2,000 pounds lower "to avoid businesses trading around the threshold level having to frequently register and deregister.").

¹⁵⁸ See CRAWFORD, KEEN & SMITH, *supra* note 21, at 311.

¹⁵⁹ The basis for this rule of thumb comes from Ebrill et al., who provide plausible parameter values that can yield a rule of thumb threshold for developed (OECD) countries. See EBRILL ET AL., *supra* note 14, at 117-18. Assuming administration costs per registrant on the order of \$100 and compliance costs of about \$500, a marginal value of one additional dollar of tax revenue of approximately \$1.20, a VAT rate of 15%, and a ratio of value-added to output of 40%, the simple optimal threshold rule provided in Ebrill et al. (which broadly corresponds to that generated by the simple model in Keen & Mintz) yields a threshold value of about \$52,000 in 1994 dollars. See BIRD & GENDRON, *supra* note 1, at 115 (explaining why relevant costs are likely to be higher; thus the difference between Bird and Gendron versus Ebrill et al. inflation-adjusted rule-of-thumb thresholds).

¹⁶⁰ See EBRILL ET AL., *supra* note 14, at 117, 123; BIRD & GENDRON, *supra* note 1, at 120 ("[i]t does not make sense for most countries to apply VAT as widely as their laws require [e.g., to the extent of their low threshold requirements for registration], and it is puzzling that so many developing and transitional countries persist in (nominally) attempting to do so"). See also *id.* at 116 (citing International Tax Dialogue's 2005 report and noting that "it is a bit puzzling that most developing countries establish and maintain low thresholds for VAT registration, thus encumbering their already overburdened administrations with a large amount of essentially useless work").

¹⁶¹ Note that these are merely the explanations that I found mentioned in the VAT literature. As one VAT expert suggested to me in conversation, there are a number of other compelling accounts: first, the registration threshold for a VAT's predecessor tax (e.g., a turnover tax, retail sales tax, etc.) may be a strong

Experience indicates that setting too low a threshold can significantly compromise the political and administrative feasibility of a VAT...However, authorities often appear not to have been persuaded of the wisdom of this approach. The reasons for this are not entirely clear: a belief that high thresholds may forego significant revenues, and perceptions of unfair competition, appear to be among the most prominent reasons.¹⁶²

The first concern, worries about losing badly-needed revenue on which governments are depending, is the most common explanation for persistent low thresholds. It has been echoed by other leading commentators, including Bird and Gendron.¹⁶³ As noted above, with the exception of Edminston and Bird's paper, there is little empirical research assessing the revenue implications of VAT threshold-raising.¹⁶⁴ However, establishing a causal connection between threshold changes and revenues is difficult; many macroeconomic variables that can affect VAT revenues are likely to be in flux as the threshold is being adjusted, especially when the impetus for the increase is price volatility. Nonetheless, a cross-country compilation of the revenue trajectories before and after increases in thresholds might be helpful in allaying fears on this point. At the same time, proponents of higher thresholds would benefit from having data on the magnitude of government savings as "administrative effort [is] freed from processing numerous low-return taxpayers," which Bird and Gendron refer to as "essentially useless work."¹⁶⁵

What about the second concern noted above—that higher thresholds as a normative goal may be at odds with fairness? The final part of the paper applies the theoretical and practical understandings of VAT registration thresholds developed thus far to argue that, to the contrary, equity norms point in favor of higher thresholds.

V. PART IV: ASSESSING FAIRNESS TO CLOSE THE GAP BETWEEN REGISTRATION THRESHOLD THEORY AND PRACTICE

Equity is often presented as the enemy of efficiency in the context of taxation: redistributive policies may reduce inequality across individuals but can introduce inefficiencies when those policies alter incentives that lead to distortions in behavior.¹⁶⁶

focal point; second, low thresholds may be a way to ensure jobs for civil servants employed by the tax authority (an important objective for any political leader). Thank you to Rebecca Millar for both of these suggestions.

¹⁶² See EBRILL ET AL., *supra* note 14, at 117.

¹⁶³ See BIRD & GENDRON, *supra* note 1, at 117, 123 (noting that "[t]here seems to have been a belief that a lower threshold than that advised would prove more productive of revenue").

¹⁶⁴ See Edmiston & Bird, *supra* note 150, at 46-47 (finding that the revenue losses following Jamaica's 2003 threshold increase were minimal).

¹⁶⁵ See BIRD & GENDRON, *supra* note 1, at 120. Thank you to Rebecca Millar for noting the countervailing political consideration that keeping revenue staff employed—at least notionally—may play an explanatory if not normatively desirable role.

¹⁶⁶ A core premise of public economics is that typically there is a tradeoff between equity and efficiency. The more redistribution achieved or the more equal people are made on an after-tax basis, the greater the losses from behavioral distortions of economic activity. For instance, substitutions between labor

VAT registration thresholds could well be another arena in which this tug-of-war is present.

I argue in this Part that, under the right circumstances, higher registration thresholds are likely to promote efficiency and fairness simultaneously. Keen and Mintz emphasize at numerous points that their model focuses *exclusively* on the efficiency implications of registration thresholds.¹⁶⁷ However, they note, somewhat cryptically, in their paper's last paragraph, that the equity implications of threshold-setting are "somewhat subtle."¹⁶⁸ In this Part, I probe that subtlety under varying assumptions.¹⁶⁹

A. Equity in the Context of VAT Thresholds

The general problem of line-drawing between tax "winners" (by virtue of exemptions or lower rates) and "losers" (by virtue of the reverse) is much broader than any particular question relating to firms' costs of registering for VAT.¹⁷⁰ Any rule that imposes differential tax treatment across firms by offering size-based exemptions will disadvantage the large, relative to the small.¹⁷¹ Indeed, Keen and Mintz, following Ebrill et al.,¹⁷² emphasize that the choice of threshold implicates two aspects of concerns about fairness: vertical equity at the level of individual human beings and (horizontal) competitive fairness at the level of firms.¹⁷³

Fairness analysis requires making comparisons across taxpayers, and is typically focused on individual human beings or family units in their capacities as taxpayers.¹⁷⁴

and leisure in the presence of a progressive tax on labor income reduce efficiency even as the tax promotes distributional (vertical) equity. *See, e.g.*, LOUIS KAPLOW, *THE THEORY OF TAXATION AND PUBLIC ECONOMICS* 392-401 (2008).

¹⁶⁷ *See* Keen & Mintz, *supra* note 20, at 574. Neoclassical economic analysis uses efficiency as its sole normative criterion, and Keen & Mintz emphasize in their conclusion that their model intentionally ignores questions of distributive fairness. They note: "the focus here has been on efficiency aspect[s] of the threshold choice. . . [i]n practice, distributional effects are naturally a major concern." However, their model of the small firm VAT compliance decision does feature a fixed component of firm-level compliance costs, and this has a profound distributional implication: smaller firms will bear a larger share of compliance costs relative to their sales. While fixed firm-level compliance costs imply regressivity, distributional equity plays no explicit role in Keen & Mintz's analysis. In particular, the model specifies the objective function of government as maximizing the simple sum of individuals' utilities. *Id.* at 568. Assumptions that might be construed as importing equity considerations into the analysis are absent, such as an assumption of decreasing marginal utility of production—whereby entrepreneurs with higher levels of sales are assumed to gain less utility from each additional dollar of sales than an entrepreneur with lower levels of sales.

¹⁶⁸ *Id.*

¹⁶⁹ *See* INT'L MONETARY FUND FISCAL AFFAIRS DEP'T, *supra* note 144, at 26 (noting that the threshold "either confers a competitive advantage on smaller and presumably less well-off retailers and service providers, or enables their customers, likely amongst the poorer, a de facto exemption").

¹⁷⁰ *See* David Weisbach, *An Efficiency Analysis of Line Drawing in the Tax Law*, 29 J. LEGAL STUDS. 71, 71-97 (2000).

¹⁷¹ *See, e.g.*, Ravi Kanbur & Michael Keen, *Thresholds, Informality and Partitions of Compliance*, 21 INT'L TAX & PUB. FIN. 536 (2014).

¹⁷² *See* Keen & Mintz, *supra* note 20, at 574 (noting that "much emphasis is often given, in particular, to the regressive nature of the compliance costs associated with the VAT. . . Against this, however, must be borne the competitive advantage enjoyed (at least in respect of sales to final consumers) by those who remain below the threshold").

¹⁷³ *Id.*

¹⁷⁴ *See* RICHARD A. MUSGRAVE, *THE THEORY OF PUBLIC FINANCE* 160 (1959). Here it is important to emphasize in the discussion that follows, where I talk about equity with respect to VAT threshold-setting

Vertical equity refers to the principle that differently-situated taxpayers should be treated differently.¹⁷⁵ It is linked to the empirical observation that taxpayers with lower absolute levels of income (or consumption) may experience a greater increase in wellbeing from an additional increment of income (or consumption) than individuals with higher levels.¹⁷⁶ Its distributive implication is “thought to require a progressive rate structure that imposes progressively higher rates on individuals with higher incomes.”¹⁷⁷ In contrast, or perhaps as the flip side of the same coin,¹⁷⁸ horizontal equity refers to the principle that similarly-situated taxpayers should be treated similarly.¹⁷⁹ It concerns itself with avoiding unwarranted discrimination across taxpayers.¹⁸⁰ In the context of analyzing the potential discriminatory effect across firm taxpayers (rather than individual taxpayers) of requiring registration in the context of a VAT, I use the term “competitive equity” for clarity.

It is not clear what “differently-situated” or “similarly-situated” mean in the context of VAT registration thresholds. The most frequently-discussed dimension of interest for vertical and horizontal equity analysis is an individual taxpayer’s “ability to pay” a tax.¹⁸¹ Ability to pay, in turn, is most commonly proxied by the individual’s income or consumption: how easily can the individual marshal the necessary resources to pay the amount of tax owed (e.g., the rate times the base)?¹⁸² However, it typically does not take into account the costs that are associated with compliance, even though complying is, at least weakly, a condition precedent to paying the amount of tax that is

(which affects firms rather than individuals per se), I try to be very explicit about the assumptions I am making in relating firms to individuals associated with them. See CLAIRE CRAWFORD & JUDITH FREEDMAN, *Small Business Taxation*, in DIMENSIONS OF TAX DESIGN: THE MIRRLEES REVIEW 1028, 1037 (J. Mirrlees et al. eds., 2010) (“it is a mistake to equate ‘small business’ with any particular economic or social characteristics when devising tax policy”).

¹⁷⁵ See JAMES B. BICKLEY, CONG. RESEARCH SERV., R41602, SHOULD THE UNITED STATES LEVY A VALUE-ADDED TAX? 7 (2010) (discussing horizontal and vertical equity in the context of a VAT in which consumption is often used as a measure of ability to pay as opposed to income).

¹⁷⁶ See RICHARD A. MUSGRAVE & PEGGY B. MUSGRAVE, PUBLIC FINANCE IN THEORY AND PRACTICE (1973); KAPLOW, *supra* note 166, at 42-44 (explaining that the degree of concavity of a utility function determines the “rate at which individuals’ marginal utility of consumption falls as consumption rises—equivalently, individuals’ degree of risk aversion. . . Hence, ceteris paribus, a higher p [variable in utility function] also favors greater equality in the distribution of consumption;” pointing out, however, that the curvature of an individuals’ utility function is a “matter of empirical fact about individuals whereas the latter [the nature of the social welfare function that the central planner adheres to] involves a normative judgment, external to the individuals in question, that must be grounded in a theory of distributive justice”). In other words, the second derivative of a representative individual’s utility function taken with respect to consumption is typically assumed to be negative; how negative at various points is the empirical question.

¹⁷⁷ See James Repetti & Diane Ring, *Horizontal Equity Revisited*, 13 FLA. TAX REV. 135, 136 (2013).

¹⁷⁸ See *id.* at 137-38 (noting that “HE and VE are merely both sides of the same coin, because starting an analysis by asking what the appropriate criteria are to determine which persons are not alike yields the same result as starting the analysis by asking what criteria should be used to determine whether persons are alike”).

¹⁷⁹ See MUSGRAVE, *supra* note 174, at 113.

¹⁸⁰ See *id.* at 160; Repetti & Ring, *supra* note 177, at 138-39 (proposing HE as a concept implicating safeguards against arbitrary enforcement of tax laws).

¹⁸¹ See Repetti & Ring, *supra* note 177, at 140.

¹⁸² There are a number of critiques of the concept of “ability to pay” as the core criterion for evaluating horizontal and vertical equity. For one helpful discussion of some of the complexities and drawbacks, see KAPLOW, *supra* note 167, at 404-06.

owed (in the case of the VAT, the amount of tax collected from consumers that must be remitted by the firm).

B. Vertical Equity

Assessing the vertical equity implications of VAT registration threshold-setting requires distinguishing concerns about the magnitude and distribution of VAT compliance costs from concerns about the magnitude and distribution of the VAT itself. The issue is not whether a VAT is regressive¹⁸³ in requiring individuals with lower ability to pay to bear disproportionately more of the VAT tax burden than individuals with higher ability to pay.¹⁸⁴ Instead, assessing vertical equity in the VAT registration context requires attention to the individual-level incidence of firm-level compliance costs. Are VAT compliance costs shouldered by the entrepreneurs, owner-managers, or shareholders of registered firms in the form of lower earnings or profits? Are they borne by employees or casual labor in the form of lower wages or piece rates? Are they borne by non-labor inputs (e.g., capital providers)? Are they passed along to consumers in the form of higher prices? Or some combination of these?

One rallying cry of businesses opposed to adopting a VAT in Australia (and elsewhere) was that it would require them to serve as “unpaid tax collectors for the government.”¹⁸⁵ At least in part, this reflects the concern of owners or managers that it may be hard for firms to recoup their costs of complying with a VAT from their

¹⁸³ The distribution of VAT liability is typically regressive when examined with reference to the income of the end consumer paying VAT at the point of sale. See Peter Varela, *Brief: Progressive and Regressive Taxes*, AUSTAXPOLICY (Feb. 24, 2016), <http://www.austaxpolicy.com/brief-progressive-and-regressive-taxes/> [<https://perma.cc/K24A-QV7W>] (noting that, with respect to the Australian VAT, or the GST, “[w]hen the GST is examined as a proportion of income, the GST is found to be a regressive tax, even though the GST is applied at a constant rate of 10 per cent. This is because people with higher incomes tend to spend less (and save more) of their income than people with lower incomes, which results in less GST being paid as a percentage of the income of higher income earners”). This means that, even though a VAT looks like a proportional tax (e.g., it is levied at x percent on all goods and services—ignoring for now exemptions and zero-rating), lower-income individuals typically pay proportionally more of their income in VAT than higher-income individuals. However, the regressive effect attenuates when a VAT is examined with reference to expenditures, it is a dubious instrument for redistributing income. *Id.* (continuing from above, “[h]owever, progressivity can also be measured against household expenditure rather than income. This could be justified as a proxy for lifetime income (ignoring bequests or inheritances), or as a measure of ability to pay in its own right...[The Australian] GST is close to a proportional tax when compared to an expenditure benchmark”). New evidence in the Canadian context suggests that the regressivity stereotype may be overblown.

¹⁸⁴ See Richard Bird & Michael Smart, *Taxing Consumption in Canada: Rates, Revenues, and Redistribution*, 64 CAN. TAX J. 417, 420 (2016) (presenting evidence that “the presumed regressivity of sales taxes—particularly generalized sales taxes like the GST [Canada’s VAT]—is far from clear”). To the extent that lower-income taxpayers pay more VAT than higher-income ones (or that they don’t pay less—if progressivity is desired) this distributive deficiency can be corrected by offering low-income taxpayers a sufficiently generous means-tested credit. However, in practice such progressivity-inducing credits are the exception rather than the rule.

¹⁸⁵ See Jeff Pope & Nthathi Rametse, *Small Business and the Goods and Services Tax: Compliance Cost Issues and Estimates*, 9 SMALL ENTERPRISE RES. 42, 52 (2001) (noting that “[i]f recurrent compliance costs appear onerous and above comparative international levels (although research on the latter remains extremely difficult) there may be further lobbying for Government compensation for small business having to act as an unpaid tax collector”).

customers or employees. Indeed, small firms are artificial legal constructs behind which there are real human beings.

The question of who bears the costs of VAT compliance is not straightforward, and this author is not aware of any empirical studies on point. To get a sense of what we do know, the following three questions are addressed in turn: first, how significant are the VAT compliance costs imposed on firms above the registration threshold? Second, what is the economic incidence of these VAT compliance costs (e.g., on which individuals within the groups listed above do they fall)? Third, is the incidence of VAT compliance costs equitable in the sense of burdening more heavily those with greater ability to pay (or to comply, or to pay to comply) as compared to those with lesser ability?

1. Empirical Studies of VAT Compliance Costs

A recent study of the real-world impact of a modern VAT elaborates on the tangible manifestations of compliance costs for registered firms:

[t]he private costs to a taxpayer of complying with the VAT law can encompass not only the direct costs of collecting documentation; accounting for VAT; the fees paid to professional tax advisers; and remitting VAT on products but also indirect costs...includ[ing] the value of labor time associated with the completion of VAT returns; the investment costs associated with acquiring intellectual capital necessary to enable this work...and even psychological cost...[of] trying to comply with tax legislation and regulation.¹⁸⁶

Over the past 30 years, there have been numerous studies estimating the compliance costs of VATs.¹⁸⁷ These studies are part of a broader literature on measuring and assessing the distribution of compliance costs of other tax instruments including income, payroll, wealth, and excise taxes. This broader literature shows that compliance

¹⁸⁶ See Faridy et al., *supra* note 145, at 289. See also Sandford, *Minimising*, *supra* note 82, at 128 (noting that “[f]or a business, faced with a GST, they include the costs of collecting, remitting and accounting for tax together with the costs of acquiring the knowledge to enable this work to be done, including knowledge of the legal obligations and penalties. The compliance costs also include the costs of storing records as required by the tax authorities. It is also appropriate to include costs incurred by representative bodies designed to help their members to cope with the tax”).

¹⁸⁷ See CEDRIC SANDFORD, MICHAEL GODWIN & PETER HARDWICK, ADMINISTRATIVE AND COMPLIANCE COSTS OF TAXATION 10-11 (1989) [hereinafter SANDFORD ET AL., ADMINISTRATIVE] (“compliance costs are defined as those costs incurred by taxpayers, or third parties such as businesses, in meeting the requirements laid upon them in complying with a given tax structure. They thus include, for individuals, the costs of acquiring sufficient knowledge to meet their legal requirements; of compiling the necessary receipts and other data and of completing tax returns; payments to professional advisers for tax advice; and incidental costs of postage, telephone and travel in order to communicate with tax advisers or the tax office. For a business, the compliance costs include the cost of collecting, remitting and accounting for tax on the products or profits of the business and on the wages and salaries of its employees together with the costs of acquiring the knowledge to enable this work to be done including knowledge of their legal obligations and penalties. These costs include associated overhead costs including the costs of storing records as required by the tax authorities”). See also *id.* at 128 (emphasizing that “they are costs over and above the payment of tax itself and over and above any distortion costs inherent in the tax”).

cost regressivity with respect to firm size is not limited to the VAT.¹⁸⁸ However, the VAT stands out as unusually regressive in the following sense: smaller firms' costs of complying with the VAT are typically higher, per unit of revenues, than larger firms' costs.¹⁸⁹ Because a number of excellent reviews of VAT compliance cost research are available,¹⁹⁰ this subpart is intended to provide a brief summary of the key contribution in this area, with attention to the newest studies and to the most recent literature reviews.

The landmark first study of VAT compliance costs was conducted by Cedric Sandford et al., and focused on the UK VAT in 1977–78.¹⁹¹ Their headline finding was that compliance costs were “exceptionally regressive in their incidence.”¹⁹² In particular, traders with gross revenues of less than £50,000 comprised 69.15 percent of all registered businesses, yet contributed only 4.48 percent of all VAT receipts to the Treasury.¹⁹³ Staggeringly, these small traders' compliance costs constituted approximately 42.6 percent of the total compliance costs of the VAT.¹⁹⁴

This group of authors published a follow-up study of UK VAT compliance in 1989 and found that compliance costs had fallen overall but were still regressive in their distribution,¹⁹⁵ a conclusion that was confirmed by a 1994 National Audit Office (UK) study.¹⁹⁶ A comparative study of the UK and German VATs, conducted also in the late 1980s, concluded that compliance costs of both taxes were regressive (with the UK more so than the German); correspondingly, small firm dissatisfaction with the VAT was higher in the UK than in Germany.¹⁹⁷

¹⁸⁸ See Jacqueline Coolidge, Findings of Tax Compliance Cost Surveys in Developing Countries, 10 *EJOURNAL OF TAX RES.* 250, 254-62 (2012). See also WORLD BANK GROUP, IFC TAX PERCEPTION AND COMPLIANCE COST SURVEYS: A TOOL FOR TAX REFORM (2011).

¹⁸⁹ See Luca Barbone, Richard M. Bird & Jaime Vazquez-Caro, *The Costs of VAT: A Review of the Literature* 58 (Int'l Ctr. for Pub. Policy, Working Paper No. 12-22, Apr. 2012) (reviewing literature on VAT compliance with an interest in understanding link to fraud and evasion, finding that “this literature review has not uncovered rigorous testing of the hypothesis that increasing compliance burdens affects VAT fraud in either direction. However...fraud appears to be directly related to the compliance burden [and]...points to the fact that it might be productive to pursue this line of research most probably through a variety of survey instruments, and with appropriate country specificity”). See also BIRD & GENDRON, *supra* note 1, at 120 (summarizing the findings as universally consistent with compliance cost regressivity).

¹⁹⁰ See Barbone et al., *supra* note 189.

¹⁹¹ See CEDRIC SANDFORD ET AL., COSTS AND BENEFITS OF VAT 49-57 (1981) (in 1977 the registration threshold was £18,000, or approximately £117,000 in 2017 dollars).

¹⁹² *Id.* See also Chris Evans, *Studying the Studies: An Overview of Recent Research into Taxation Operating Costs*, 1 *EJOURNAL OF TAX RES.* 64, 84-85 (2003) [hereinafter Evans, *Studying*] (summarizing the study's major outcomes as part of a systematic literature review of studies addressing tax compliance and administrative costs).

¹⁹³ See Evans, *Studying*, *supra* note 192, at 57.

¹⁹⁴ *Id.* at 49. See also Turnier, *Designing*, *supra* note 13, at 458-60 (discussing the high rate of voluntary registration for the UK VAT, even at a very low threshold; 200,000 out of a total of 1.25 million registered vendors, or 16%, voluntarily registered. However, these voluntary registrants generated only two tenths of one percent of all VAT receipts while imposing high administrative costs on the Exchequer).

¹⁹⁵ See SANDFORD ET AL., ADMINISTRATIVE, *supra* note 187.

¹⁹⁶ See NATIONAL AUDIT OFFICE, HM CUSTOMS AND EXCISE: COST TO BUSINESS OF COMPLYING WITH VAT REQUIREMENTS 22 (1994) (“the main message of compliance costs in relation to trader turnover is broadly consistent in all five countries: the smallest traders incur proportionately the greatest costs”).

¹⁹⁷ See G. Bannock & H. Albach, *The Compliance Costs of VAT for Smaller Firms in Britain and West Germany*, in GOVERNMENTS AND SMALL BUSINESS 182 (G. Bannock & A. Peacock eds., 1989). See also Evans, *Studying*, *supra* note 192, at 84-85 (summarizing the study's major outcome as part of a systematic

Robert E. Plamondon's 1993 study of compliance costs of the then-new Canadian GST found that costs were lower than expected based on past research but were higher for smaller businesses.¹⁹⁸ Similarly, Cedric Sandford and John Hasseldine's survey of businesses in New Zealand found that VAT compliance disproportionately burdened smaller businesses.¹⁹⁹ The United States General Accounting Office, in its review of the feasibility of adopting a U.S. VAT, emphasized one of this study's most shocking findings: "[B]usinesses with annual gross receipts under about US \$16,000 spent 500 times as much (as a percentage of sales) to comply with the New Zealand Goods and Services Tax as a firm with annual gross receipts over about US \$27 million."²⁰⁰ In his review and comment on these and other circa-1990s studies, Sandford concluded that "[t]he essential issue in minimizing the compliance costs of a GST/VAT is that of easing the burden on small businesses."²⁰¹

More recently, John Hasseldine and Ann Hansford collected data on the UK VAT through a postal questionnaire distributed to a sample of about 6,000 businesses.²⁰² Unlike previous studies, they measured *core* costs ("internal staff costs and in-house and external advice...for routine VAT administration, preparing for and receiving visits from HM Customs & Excise, learning about VAT rules and communicating with HM Customs & Excise on routine VAT matters") separately from *total* costs (including "planning, one-off VAT advice and other expenses such as software and other VAT overheads...total costs may have a voluntary element such as costs incurred for VAT planning purposes").²⁰³ They found both cost components were increasing in the turnover and number of employees of the business, suggesting perhaps less regressivity than prior studies; however, the rate of increase in size was not specified.²⁰⁴ They also found a mildly significant effect of being a new business on both measures of compliance costs.²⁰⁵

There have also been several studies focused on the adoption in 2000 of new Goods and Services Tax as part of a package of wider tax reforms in Australia. Nthati

literature review of studies addressing tax compliance and administrative costs); Sijbren Cnossen, *Administrative and Compliance costs of VAT – a review of the evidence*, 8 TAX NOTES INT'L 1649 (1994).

¹⁹⁸ See ROBERT E. PLAMONDON, GST COMPLIANCE COSTS FOR SMALL BUSINESS IN CANADA: A STUDY FOR THE, DEPARTMENT OF FINANCE, OTTAWA (1991) (using qualitative techniques; 200 face-to-face interviews conducted by accountants).

¹⁹⁹ See CEDRIC SANDFORD & JOHN HASSELDINE, THE COMPLIANCE COSTS OF BUSINESS TAXES IN NEW ZEALAND 112-13 (1992).

²⁰⁰ See U.S. GEN. ACCOUNTING OFFICE, GAO-93-78, VALUE-ADDED TAX: ADMINISTRATIVE COSTS VARY WITH COMPLEXITY AND NUMBER OF BUSINESSES (1993), as cited in Alan Schenk, *Administrative Costs of a U.S. Value-Added Tax: A Description and Analysis of the Report of the United States General Accounting Office*, 4 INT'L VAT MONITOR 4 (1993).

²⁰¹ See Sandford, *Minimising*, *supra* note 82, at 140.

²⁰² See John Hasseldine & Ann Hansford, *The Compliance Burden of the VAT: Further Evidence from the UK*, 17 AUSTL. TAX F. 369, 378-79 (2002).

²⁰³ *Id.* at 379.

²⁰⁴ *Id.* at 381-82, 384. See also Ann Hansford, John Hasseldine & Carole Howorth, *Factors affecting the costs of UK VAT compliance for small and medium-sized enterprises*, 21 ENV'T & PLAN. C.: GOV'T & POL'Y 479, 490-91 (2003) (noting that while the general finding is that firms just above the threshold face the heaviest burden of VAT compliance, there is also some evidence that due to cross-border issues "life is not necessarily easier for larger firms...[This] would support the argument that compliance costs may not be strictly regressive and that smaller firms which are able to grow may still find themselves wrapped up in red tape!").

²⁰⁵ See Hasseldine & Hansford, *supra* note 202, at 381, 384.

Rametse and Jeff Pope surveyed businesses in western Australia and found that GST transitional and start-up costs for businesses across the size range exceeded government estimates²⁰⁶ and were highly regressive.²⁰⁷ Tran-Nam and Glover conducted in-depth interview and quantitative surveys of a smaller number of largely rural businesses to estimate transition costs for the GST and the wider tax reform package.²⁰⁸ They found that the average transitional business compliance costs were significant but slightly less than estimated by other studies.²⁰⁹

Most recently, in a large-scale study of VAT compliance behavior of small and medium businesses in Bangladesh, Nahida Faridy et al. used both quantitative data from government administrative tax records as well as mailed questionnaire surveys and qualitative data gathered from focus group discussions and other sources.²¹⁰ They used this mixed-methods approach to attempt to estimate both the monetary compliance costs and non-monetary costs including time spent on compliance and psychological costs.²¹¹ For compliant taxpayers, total monetary and psychological costs decreased as total VAT payments increased.²¹² To the extent that a business's VAT payments track its revenues for compliant taxpayers (which appears from the paper's discussion to be at least roughly the case), this study's findings provide further evidence on the firm-size regressivity of VAT compliance costs.²¹³

2. *Economic Incidence of VAT Compliance Costs*

The preceding studies conclusively establish that VAT compliance is disproportionately burdensome for smaller firms.

But who are the individuals who actually bear the costs of VAT compliance? One might simplistically presume that because the entrepreneur or owner-manager are tasked, on the firm's behalf, with the obligation to charge, collect and remit VAT, the costs of compliance will fall exclusively on her and she will directly absorb the costs in

²⁰⁶ See Nthati Rametse & Jeff Pope, *Start-up Tax Compliance Costs of the GST: Empirical Evidence from Western Australian Small Businesses*, 17 AUSTL. TAX F. 407 (2002) (surveying 4,000 taxpayers, approx. 800 surveys were returned; for businesses with less than \$50,000 in revenues, compliance costs of GST start-up were about 15%; for businesses in the range of \$50,000 to \$99,999, compliance costs were 4.5%; for the range \$100,000 to \$500,000, compliance costs were 1.7%; over \$500,000 compliance costs were only 0.44%). See also Jeff Pope, *Estimating and Alleviating the Goods and Services Tax Compliance Cost Burden on Small Businesses*, 11 REVENUE L. J. 1, 13 [hereinafter Pope, *Estimating*] (discussing Rametse & Pope).

²⁰⁷ See Pope & Rametse, *supra* note 185, at 54.

²⁰⁸ See Binh Tran-Nam & John Glover, *Tax Reform in Australia: Impacts of Tax Compliance Costs on Small Businesses*, 5 J. AUSTL. TAX'N 338, 377 (2002).

²⁰⁹ See Binh Tran-Nam & John Glover, *Estimating the Transitional Compliance Costs of the GST in Australia: a Case Study Approach*, 17 AUSTL. TAX F. 499 (2002) (using questionnaires, log-book data gathering over time and face-to-face interviews to spot-check the veracity of the quantitative data).

²¹⁰ See Faridy et al., *supra* note 145, at 292-93.

²¹¹ *Id.* at 309 (measuring psychological costs as the "annual cost per taxpayer of sleeping pills, tobacco, consult psychologists or psychiatrists or similar medication used to relieve the symptoms of anxiety or stress connected with [VAT] compliance").

²¹² *Id.* (excluding time costs).

²¹³ *Id.* at 310 (author's calculations from Table 7, "Total Monetary and Psychological Costs of CT" (compliant taxpayers), calculating VAT Payment Group using means of each bin; finding that total costs are decreasing from 16 to 11% as mean payments rose by increments of 100,000 Bangladeshi Taka).

the form of lower (net) profits.²¹⁴ This could happen both in the case in which costs are monetary—the entrepreneur will enjoy lower net earnings from the business because she must pay someone else to deal with VAT compliance—as well as the case where costs are non-monetary, or “internal.”²¹⁵

The concept of economic incidence in the context of consumption taxation interrogates the simplistic presumption that the burdens of the tax fall exclusively on either the seller/entrepreneur or the consumer. In a recent paper examining the “supply side” incidence of cigarette taxes, Kyle Rozema makes the point that:

[a]n ideal tax incidence analysis would characterize the effect of a tax change on the utility levels of all individuals in the economy. It would begin by identifying the individuals who ultimately bear the tax burden. For a consumption tax [like a VAT] this includes all individuals affected, regardless of whether they are on the demand side [customers] or the supply side [sellers]...In practice, [however], this exercise is difficult to conduct empirically because one must be able to identify the involved parties.²¹⁶

In the context of the incidence of VAT compliance costs, the exercise is similarly difficult.²¹⁷ Depending on the competitiveness and other conditions of the market in which the firm operates, it seems plausible that an entrepreneur, owner-manager or shareholder will have more or less leeway to pass along all or some of her VAT compliance costs to employees, casual labor inputs, non-labor inputs (e.g., suppliers of capital or other inputs), or customers. In their study of compliance costs of business taxes in New Zealand, Cedric Sandford and John Hasseldine’s frame the issue aptly:

[B]usinesses do not pay taxes—only individuals can do that; similarly businesses do not pay compliance costs—only individuals. The question

²¹⁴ See SANDFORD & HASSELDINE, *supra* note 199, at 114 (“Where we are talking of sole proprietors and partners, the compliance costs are like an additional element of personal income tax and most of the cost is likely to stay where it falls, on the proprietor or partner; shifting it will be difficult although it may be possible to shift some of it forward, as with corporate income tax”).

²¹⁵ See, e.g., Katherine Bain, Michael Walpole, Ann Hansford & Chris Evans, *The internal costs of VAT compliance: Evidence from Australia and the United Kingdom and suggestions for mitigation*, 13 E.JOURNAL OF TAX RES. 158, 163 (2015) (internal costs as “costs of labour/time consumed in completion of tax activities...in contrast to external costs, which are the costs of purchasing expertise, such as external advisors; summarizing surveys of internal and external tax compliance costs showing that the portion stemming from VAT/GST compliance is significant (although different as between Australia and the UK—in Australia, 58% of internal compliance costs were attributable to the GST whereas the UK figure was 41%). In the case of internal costs, if incidence fell on the seller, they would be extracted in the form of fewer leisure hours, more stress, worse health, or other incursions to the individual entrepreneur’s subjective welfare.

²¹⁶ See Kyle Rozema, *Supply Side Incidence of Consumption Taxes* 1 (Oct. 5, 2016), <http://ssrn.com/abstract=2742254> [<https://perma.cc/LNJ3-AMM8>].

²¹⁷ Much of the earlier literature on the distributive implications of the consumption tax assumed that 100 percent of the consumption of taxes are passed through to the final consumer. See Glenn Jenkins, Haticce Jenkins & Chun-Yan Kuo, *Is the Value-Added Tax Naturally Progressive* 3 n.3 (Queen’s U. Dep’t of Econ., Working Paper No. 1059, Apr. 2006) (citing a number of papers published in the 1970s and 1980s).

then arises, who really pays compliance costs? What is the real or effective incidence of these costs? By effective incidence we mean, essentially the difference between two situations—one with the compliance costs in existence and one without—one of which is, of course, hypothetical. The area of tax incidence—and the incidence of compliance costs is very much akin to tax incidence—is an area of considerable difficulty and on important aspects there is no agreement amongst economists.²¹⁸

As suggested by the literature review above, the research relating to compliance costs (and VAT compliance specifically) focuses quite narrowly on measuring the magnitude of costs rather than exploring their incidence.²¹⁹ However, there is a large literature on the incidence of consumption taxes as well as a literature in industrial organization that tests for pass-through of input costs.²²⁰ Generally speaking, this literature finds varying rates of pass-through of VAT via increased consumer prices, decreased wages, or decreased spending on inputs.²²¹

3. *Ability to Pay*

To understand the vertical equity implications of the compliance costs associated with high versus low registration thresholds (per the simplified assumption above), ability to pay must be analyzed with respect to each potentially-affected constituency relating to the VAT registrant: entrepreneurs/owner-managers, shareholders, employees/casual labor, non-labor inputs, and consumers. For simplicity, I focus on two: entrepreneurs/owner-managers (for ease of exposition, “entrepreneurs”) and consumers.

Unfortunately, there is little research on how firms of varying sizes are linked with entrepreneurs and customers of varying abilities to pay. However, a few sources (including a sentence in Keen and Mintz’s discussion²²²) make the point that higher thresholds can act as an implicit subsidy to correct some of the regressive tendencies of a VAT in situations, particularly where smaller firms are associated with lower-income entrepreneurs and serve lower-income consumers. Is there evidence that this is the case? Obviously, it would be specific to a particular setting. However, there are some hints that this is the case.

²¹⁸ See SANDFORD & HASSELDINE, *supra* note 199, at 114.

²¹⁹ See Part IV. B.1, *infra*.

²²⁰ See Youssef Benzarti et al., *What Goes Up May Not Come Down: Asymmetric Incidence of Value-Added Taxes* 3-4 (Nat’l Bureau Econ. Res., Working Paper No. 23849, 2017). See also Youssef Benzarti & Dorian Carloni, *Who Really Benefits from Consumption Tax Cuts? Evidence from a Large VAT Reform in France* 18-20 (Nat’l Bureau Econ. Res., Working Paper No. 23848, 2017) (finding that a VAT decrease for sit-down restaurants mostly benefitted firm owners through increased profits).

²²¹ See Rozema, *supra* note 216, at 3-5.

²²² See Keen & Mintz, *supra* note 20, at 564 (“This differential treatment [tax and compliance costs imposed above but not below the threshold] has an equity aspect, though since it tends to be the smaller and hence presumably poorer traders that are relatively advantaged there are unlikely to be significant vertical equity concerns.”).

Glenn Jenkins, Hatice Jenkins, and Chun-Yan Kuo observe that:

the poor tend to purchase a larger proportion of goods and services from the informal retail sector where the goods are either not taxed at all or are more lightly taxed...the higher income [sic] households purchase goods and services in retail outlets that are likely to fully comply with the tax rules. As a result, the share of consumption subject to VAT for higher income households tends to be greater than that for the poor.²²³

Similarly, a 2009 Fiscal Affairs Department (IMF) report cites Jenkins et al. (2006) in support of a similar proposition:

[The] regressive effect [of a proportional tax on sales, like a VAT] relative to annual income...is mitigated by the common exemption of sensitive food and other items and (less noted) by the operation of the threshold: the latter either confers a competitive advantage on smaller and presumably less well-off retailers and service providers or enables their customers, likely amongst the poorer, a de facto exemption (Jenkins, Jenkins, and Kuo, 2006). The reach of the tax is also less in poorer rural regions than in urban centers.²²⁴

None of these statements specifically address the incidence of compliance costs; their focus is the incidence of the VAT burden itself. However, it stands to reason that they would apply with equal or greater force to the incidence of VAT compliance costs. This is because unregistered firms are not exempt from VAT due to cascading input taxes, but they are exempt from compliance costs. To the extent that compliance costs are passed along to low-income customers or borne by low-income entrepreneurs, a low VAT registration threshold will have progressive distributive implications.

C. Competitive Fairness

Sharp discontinuities in the taxation of otherwise-similar firms (and the individuals associated with them as entrepreneurs and customers) situated above and below the threshold can raise horizontal equity concerns.²²⁵ Moreover, they have been cited as a political roadblock for advocates of higher VAT thresholds. Indeed, line-drawing among bigger and more politically influential firms may naturally trigger louder

²²³ See Jenkins et al., *supra* note 217, at 4.

²²⁴ See INT'L MONETARY FUND FISCAL AFFAIRS DEP'T, *supra* note 144.

²²⁵ Some commentators have framed these concerns as relating to horizontal equity. See Crawford & Freedman, *supra* note 174, at 1040 ("horizontal equity issues arise at each borderline and across the piece [referring to workers' choices between employment and incorporation or employment and self-employment]"). See also Gendron, *supra* note 38, at 267 ("The equity argument goes along the lines that it would be unfair that large businesses must be responsible for all obligations while small businesses are not, and can thus enjoy a competitive advantage." Then offering some responses to that argument including input taxation and the availability of voluntary registration).

cries of foul play than drawing similar distinctions among smaller and more politically dispersed firms.²²⁶

Horizontal equity concerns itself with avoiding unwarranted discrimination across similarly-situated individual taxpayers; “competitive fairness” suggests this same concept with respect to firms. Ebrill et al. suggest that the appearance of discrimination against larger firms may bear responsibility for legislators’ reluctance to adopt higher VAT registration thresholds.²²⁷ Firms with revenues just below the threshold can remain exempt, while an arbitrary revenue cutoff requires registration for an otherwise-identical firm with revenues at or just above the threshold. These registered firms and their associated entrepreneurs must not only bear the significant and regressive compliance burdens of the VAT, but also are competitively disadvantaged as a result of having to charge VAT on their sales.²²⁸ Keen and Mintz’s model of the optimal threshold accounts for the firm-size inefficiencies associated with a registration threshold, but it does not address the issue of discrimination against those firms (and their associated entrepreneurs and, potentially, customers) immediately above the threshold, or its political ramifications.²²⁹

There are a few reasons to suppose that the higher the proposed registration threshold, the more politically influential such firms’ competitive fairness objections will be. First, larger firms may have louder voices with which they can make their objections heard. If larger firms are suddenly threatened with competition from unregistered sellers, they are likely to have resources they can mobilize in a campaign against the proposal. Second, as suggested by some reports of the first-round VAT adoption experience in Ghana (a low threshold was chosen but later abandoned in favor of a higher one),²³⁰ larger businesses may be more likely to form a crucial part of a given country’s domestic pro-VAT coalition because of their connections with multinational firms supporting VATs as part of foreign investment-friendly economic reforms. Indeed, many larger suppliers want to do business with registered suppliers: this allows them to face more transparent prices and be able to claim credits for readily identifiable VAT on inputs. For

²²⁶ See EBRILL ET AL., *supra* note 14, at 123.

²²⁷ See *id.* at 117 (“There may also have been concern over the potential inefficiencies and inequities arising from the differential treatment of those above and below the threshold.”).

²²⁸ *The Value Added Tax: Experiences and Issues*, in International Tax Dialogue, *supra* note 41, at 17 (“Nevertheless, many countries—including, ironically, many with relatively weak administrative capacity—have evidently not been persuaded by the arguments for a high threshold. In addition to the revenue implications, national authorities are also often concerned that a high threshold unfairly favors small traders (by exempting them from the tax). By way of example, the European Commission’s first proposal for a directive to tax “imported” electronic services advocated a threshold of €100,000 for non-EU based suppliers making supplies to consumers in the EU. However, in the ensuing negotiations the Member States removed the references to thresholds. This has led to a situation where a non-EU business has, in theory at least, to account for EU VAT on all sales into the EU, irrespective of the amount of sales involved. This contrasts with thresholds available in most, but not all, EU Member States, thereby introducing an element of distortion.”).

²²⁹ See Keen & Mintz, *supra* note 20, at 572 (“report[ing] results for...two assumptions on the distribution of productivities: a uniform distribution, and a distribution function...that captures the greater frequency of small firms”). Keen & Mintz do, however, seem to gesture to competitive equity in their comments on their theoretical results. *Id.* (“A more novel possibility seems to arise, however, from the observation (here speaking very loosely) that the production inefficiency associated with a threshold can be mitigated by setting the threshold either very low or very high: in either case the bulk of taxpayers will be treated identically.”).

²³⁰ See Stewart, *Transfer*, *supra* note 155, at 191-93. See also EBRILL ET AL., *supra* note 14, at 117.

this reason, a low threshold may be “baked into the bargain” of VAT adoption, rendering calls for higher thresholds politically infeasible.

Of course, is impossible to say without specific reference to a given jurisdiction how important, or even how fully articulated, such competitive fairness concerns may be.²³¹ However, there are two compelling responses to competitive fairness objections to higher VAT registration thresholds.

1. *Higher Thresholds Minimize Bunching*

Rather than exacerbating competitive fairness concerns, raising a low VAT threshold to exempt a greater portion of the smallest firms is almost certain to *reduce* the number of businesses in the vicinity of, and thus at risk of being treated inequitably by, the legal discontinuity.

The competitive fairness objection implies that a firm’s revenue (turnover) is the particular taxpayer attribute to which competitive fairness should refer in pursuing the objective of treating similarly-situated taxpayers similarly. Taking that premise at face value, it is clear that *any* non-zero registration threshold will face a competitive fairness problem. Unless compliance costs are so low as to make a zero-registration threshold feasible, a logical response to the objection is to select a threshold that minimizes the number of taxpayers affected by the inequity.

Higher thresholds accomplish this objective. As an empirical matter, most economies’ firm-size distributions are heavily skewed towards the small.²³² Assume that for any non-zero registration threshold, the firms in the revenue band or interval that is roughly centered around a given registration threshold (although with bunching, there is likely to be a gap immediately above the threshold) will be considered similar enough to raise the competitive fairness objection. Setting the threshold lower rather than higher thus implies that a *greater* concentration of firms will be located in that band or interval. As the threshold is raised, the band becomes less populous. The number of affected taxpayers decreases, and the aggregate competitive fairness of the VAT threshold improves.

2. *Optional Registration*

Almost universally, VATs with non-zero registration thresholds allow small suppliers to “opt-in” to VAT registration even though they are, by default, not required to register.²³³ Keen and Mintz do not incorporate elective registration into their optimal threshold analysis,²³⁴ but among VAT experts an elective registration regime for small

²³¹ See Stewart, *Transfer*, *supra* note 155, at 182-98. See also PRICHARD, *supra* note 5, at 83-118.

²³² See Keen & Mintz, *supra* note 20, at 574.

²³³ See JAMES, *supra* note 2, at 57; CRAWFORD, KEEN & SMITH, *supra* note 21, at 297-98; William Gale, Hilary Gelfond & Aaron Krupkin, *Value-Added Taxes and Small Business*, Brookings Inst. Pol’y Brief (Mar. 2016), <https://www.urban.org/sites/default/files/publication/79206/2000713-Value-Added-Taxes-and-Small-Businesses.pdf> [<https://perma.cc/V9UE-3NB4>].

²³⁴ See Keen & Mintz, *supra* note 20, at 574 (“[I]mportant interaction effects arise when firms trade with one another...for then a low threshold increases the likelihood that a firm not registered for the VAT—either because it is too small or because it is an outright evader—will find itself selling to registered firms, and so see a commercial advantage in registering (because they can then reclaim the tax paid on their inputs

suppliers is considered “a key part of any well-designed [e.g., efficiency-maximizing] VAT, albeit often with a lower limit above zero turnover and/or some discretion by the Revenue Commissioner.”²³⁵

The “formality chain effect” theory of voluntary registration features two separate channels through which presumptively exempt firms will find it advantageous voluntarily register.²³⁶ As the theory’s name suggests, each requires that the small supplier be part of a “formal” (VAT-registered) supply chain.

The first is the customer channel. Suppose that a small firm sells to a VAT-registered (formal) business. Due to the magic of the input tax credit mechanism, the formal business customer will be indifferent to the small supplier’s decision to charge VAT on her sale price (because of the input tax credit the small supplier will provide in the event of registration). Further suppose that trading among registered businesses means that invoices will be issued and transactions will be documented, such that there may be managerial, accounting or contracting benefits to formality (indeed, the VAT literature discusses at some length the managerial and accounting benefits of VAT registration—keeping track of sales and expenses for VAT purposes may provide useful information for other business decisions, and there can be cash flow benefits of claiming input credits before tax is due).²³⁷ Last, suppose that the small supplier’s costs of registration (e.g., compliance costs) are not higher than those of her competitors. Voluntary registration will be advantageous in this scenario: the small supplier gains the opportunity to trade with the formal customer and realizes the same after-VAT revenue and net profit. For the government, voluntary registration through this no-taxable-input customer channel is revenue-neutral, but bringing these low-cost small firms into the VAT net permits potential positive spillovers associated with formality (e.g., better enforcement of VAT and across tax instruments, improved regulatory compliance, etc.).

The second channel is the input channel.²³⁸ In this scenario, the small supplier facing the decision to voluntarily register *does* purchase inputs, and those inputs are

without increasing the net price to their customers (since the latter, being registered, can also reclaim tax on their inputs))”).

²³⁵ See CRAWFORD, KEEN & SMITH, *supra* note 21, at 296.

²³⁶ See Aureo de Paula & Jose A. Scheinkman, *Value-Added Taxes Chain Effects and Informality*, 2 AM. ECON. J.: MACROECONOMICS 195, 196 (2010) (testing chain effect theory using data from firms in Brazil and finding that the credit system is correlated with chains whereas the effect vanishes for firms subject to estimated tax withholding system without the feature of input tax credits). The two channels mirror the hypotheses tested and validated using UK VAT data in Liu & Lockwood, *supra* note 32, at 3, 21-24.

²³⁷ See Pope, *Estimating*, *supra* note 206, at 13. See also Sandford, *Minimising*, *supra* note 82, at 135.

²³⁸ The equity argument goes along the lines that it would be unfair that large businesses must be responsible for all obligations while small businesses are not, and can thus enjoy a competitive advantage...[however,] small businesses that would gain by being registered can apply for voluntary registration if such a provision exists in the VAT law. A small business might want to register when it adds much of its value through purchased inputs (raw materials, machinery etc.). In that case, being registered allows for the recovery of VAT on inputs. A supplier making mostly business-to-business supplies would also want to register because many of their business-to-business clients will want them to charge VAT so that they can claim a credit. Sometimes, larger businesses just prefer to deal with registered suppliers. Finally, a supplier that is VAT-registered may signal to clients that it runs a legitimate and reputable business. Voluntary registration would therefore seem to do much to restore equality of treatment between small and larger businesses. See Gendron, *supra* note 38, at 267 (presenting a similar argument regarding voluntary registration’s ability to respond to competitive fairness concerns).

purchased from formal VAT-registered firms. Voluntary registering in this case allows the small supplier to claim input tax credits. The higher a small suppliers' taxable input expenses are relative to her sales (and especially in the case of losses, such as during start-up years), the higher the likelihood that the small supplier would consider voluntarily registering.²³⁹ However, as we know, complying with the VAT is typically costly, so the small supplier must perceive her benefit from claiming input tax credits to be in excess of her compliance costs, taking into account as well any competitive disadvantage she would bear from charging VAT to her customers. Where this latter effect is significant, the payoff from fraudulent refund claims due to understatement of non-VAT-invoiced sales is high, although such fraud potential arises with all retail sales and sales to informal businesses.²⁴⁰

Here, it is easy to see that the presence of *both* the customer channel and the input channel make voluntary registration especially attractive—e.g., where the small supplier is placed in the middle of a formal supply chain. Her customers typically will be indifferent to the imposition of VAT because they can use an input tax credit. For the small supplier, if the input tax credit benefit exceeds the compliance cost, voluntary registration will be profitable.

Despite the potential for facilitating evasion, offering small suppliers an option to register is unambiguously desirable from a theoretical optimal taxation perspective.²⁴¹ Without voluntary registration, the VAT—because of its unique “fractional” nature—would succeed in capturing revenue for the government, but at the cost of production efficiency. This is because unregistered small suppliers would pay VAT on their inputs but would lack the ability to claim credit for such payments. Having VAT “stick” to purchases made at the business input stage rather than at the retail consumer stage violates the basic Diamond-Mirrlees insight that taxing consumption rather than business inputs minimizes welfare-reducing distortions.²⁴² And, in contrast to the widespread non-adoption of the expert consensus in favor of high VAT registration thresholds, the expert consensus in favor of voluntary registration has been—perhaps not surprisingly, because it's elective so doesn't bind anyone to pay tax against their will—to be an easier sell among legislators.

The widespread presence of voluntary registration undermines competitive fairness objections to registration thresholds in general and to high thresholds in particular. Voluntary registration has the effect of making the small supplier exemption *better-targeted* than it would be if exemption for small suppliers was mandatory. Indeed, the core policy justification for having a registration threshold is to save small firms with high compliance costs but low VAT revenue potential the burden of registering, while

²³⁹ See CRAWFORD, KEEN & SMITH, *supra* note 21, at 296 (“[T]here is a strict advantage [to registered firms] in purchasing from VAT-registered businesses, since unregistered businesses will be unable to reclaim the VAT they themselves have been charged on their inputs, and so may charge a higher output price. Thus, traders selling to other businesses may indeed wish to register to charge the VAT even if their annual turnover is below the threshold at which VAT registration is mandatory...”).

²⁴⁰ The VAT is vulnerable to evasion by sellers who under-report taxable sales while claiming (or even over-reporting) input tax credits. Where the small supplier sells to non-registered customers (either informal businesses or individual consumers), the ability to understate sales is exacerbated by the lack of an input tax credit invoice trail that can be traced by the tax agency.

²⁴¹ See CRAWFORD, KEEN & SMITH, *supra* note 21, at 283.

²⁴² *Id.*

also relieving the government from administration costs with respect to these revenue-unproductive firms. Because of the high fixed component of compliance costs, using low annual revenues as a proxy for high compliance costs relative to VAT revenue potential makes sense from a practical standpoint. However, revenues are merely one among a number of imperfect indicators of a firm's relative costs of VAT registration. At any given revenue cutoff, firms are likely to be heterogeneous in their compliance costs but also in their potential benefits from registration.

Voluntary registration can thus transform a straight bright line registration threshold—with its concomitant competitive fairness problems—into a non-linear one. Two firms that are otherwise identical may indeed find themselves on either side of the registration threshold. However, the conclusion that one must register VAT while the other remains exempt is inaccurate in the presence of an election to register for small suppliers. Revenue is no longer the sole characteristic on which taxability turns: the election allows other signals of a firm's compliance costs and registration benefits to be taken into account.²⁴³ By facilitating a better match between taxpayer compliance costs and VAT registration, voluntary registration both promotes production efficiency and undercuts competitive fairness objections to registration thresholds. In short, a well-functioning voluntary registration threshold offers an elegant way to address some of the perceived inequities of having any threshold at all.

But what about voluntary registration's impact on the competitive fairness of *higher* VAT thresholds? Voluntary registration is especially advantageous in the context of higher rather than lower thresholds. This is because the higher the threshold, the higher the likelihood of voluntary registration. First, larger firms are more likely to be part of formal supply chains and thus can benefit from at least one of the customer or input channels, and often both. This benefit is likely to rise in revenues—both with respect to the customer channel (because revenues come from sales to customers) but also with respect to the input channel (because more taxable inputs will be needed to meet rising demand for sales). In contrast, as we have seen, compliance costs typically fall relative to revenues as a firm grows larger. Indeed, Liu and Lockwood's recent research on formality chain effects using data from the UK VAT bears out this association between higher thresholds and voluntary registration. The UK VAT has a high annually-indexed registration threshold (currently £85,000). At this threshold, 35 percent of UK VAT registrants have revenues below the threshold.²⁴⁴ Of those businesses, over 40 percent voluntarily register.²⁴⁵

In sum, voluntary registration with a high threshold allows the VAT to be better tailored across firms with similar revenues but varying costs or benefits of registration.

V. CONCLUSION

This Article relies on the leading microeconomic model of small-firm VAT compliance and subsequent literature to summarize the efficiency case for higher VAT

²⁴³ See Gendron, *supra* note 38, at 267 (noting that voluntary registration can act as a signal to clients that it runs a legitimate and reputable business).

²⁴⁴ See Liu & Lockwood, *supra* note 32, at 3. Some of those with revenues less than the threshold may have been required to register in a prior year and simply did not de-register; for this reason, proportion of registrants with revenues less than the threshold is likely to overstate the rate of voluntary registration.

²⁴⁵ See Bain et al., *supra* note 215, at 167.

registration thresholds. It then moves beyond the territory of economists to address a key consideration in threshold-setting that has received less academic attention: fairness. Nearly everywhere, low thresholds are known to be regressive at the level of the firm: numerous studies show that small firms face high VAT compliance burdens relative to their revenues. To the extent that smaller firms are associated with lower-income entrepreneurs or sell to lower-income customers, reducing compliance costs by raising the registration threshold has progressive equity implications.

Competitive fairness objections from larger and often more politically influential businesses often represent a sticking point in debates about higher thresholds: the appearance of tax discrimination among bigger businesses can risk undermining the very coalition that supported the need for a VAT in the first instance. This Article presents two responses to such objections. First, setting the threshold higher rather than lower minimizes the number of similar firms that are affected inequitably by the threshold. Second, the presence of an election that allows small firms to voluntarily register facilitates a more equitable “matching” of registration with firms that would benefit from registration on a characteristic other than annual revenue: firms with low costs or high benefits (or both) will be most likely to voluntarily register. Thus, the article’s core argument is simple: under certain circumstances, high VAT thresholds can occupy the coveted policy sweet spot of promoting fairness and efficiency simultaneously.