Brazil: Options for Tax Reform

A Policy Note for Discussion[1]

Summary: Brazil's tax system is complex, featuring over 80 different taxes at the federal, state and municipal level, and collecting a high 32% of GDP in tax revenue, despite seemingly moderate tax rates. This note identifies four key shortcomings of the current system and discusses reforms to address them. First, the tax system is heavily reliant on a multitude of turnover taxes, which cascade through the production chain and are compounded by being levied at various levels of government. Second, the redistributive effect of taxes is limited by high effective indirect taxes rates, the absence of dividend taxation, and income shifting by high-income individuals from the personal to the corporate tax base. Third, the state-level VAT system which follows the origin rather than the destination principle induces states to compete with each other for revenue, for instance by granting tax benefits to producing industries. Finally, tax compliance costs in Brazil are exceedingly high. As these shortcomings are at least partly due to the structure of indirect taxation, replacing most indirect taxes with a unified federal VAT should be a reform priority. Further reforms should broaden of the income tax base to include dividends and all forms of capital gains, and harmonize the personal and corporate income tax schedules to limit base shifting. As tax revenue is already high, the reform should be conceived as broadly revenue-neutral, though the VAT reform might still generate a revenue increase due to efficiency gains. Micro-empirical analysis based on tax return and transaction data can help estimate key elasticities for optimal policy design.

1. Introduction: Brazil's tax system

Federal taxes in Brazil include income taxes on individuals and firms, and a multitude of indirect taxes. The individual income tax (IRPF - *Imposto de Renda Pessoa Física*) is withheld at source by employers, according to a progressive schedule with five rates, ranging from 0% (for incomes up to R$ 1,903.98) to 27.5%. The corporate income taxes (IRPJ - *Imposto de Renda Pessoa Juridica* and CSLL - *Contribuição Social sobre o Lucro Líquido*) are – unusually – also progressive with marginal tax rates of 24% (15% + 9%) (for monthly profits up to R$ 20,000) and 34% (25% + 9%). The tax base for the corporate income taxes (CIT) can be either actual profits (*lucro real*) or presumed profits (*lucro presumido*), the latter regime being available to firms with an annual gross revenue below R$ 78 million. The vast majority of firms are actually in the presumptive regime.

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[1] This policy note was prepared by a World Bank team led by Anne Brockmeyer (abrockmeyer@worldbank.org), with inputs from Rafael Munoz Moreno, Cornelius Fleischhaker, and Antonio Nucifora, and helpful comments from Joana Naritomi. Felipe Diogo Camêlo and Laísa Rachter de Sousa Dias provided excellent research assistance. The note presents issues for discussion in the context of the 2018 general election in Brazil. A longer and more in-depth piece on tax reform is under preparation and expected to be published in early 2019.

The main indirect taxes are levied on turnover, with limited reclaim mechanisms. These turnover taxes (PIS/PASEP – *Contribuição para os Programas de Integração Social*; and COFINS – *Contribuição para o Financiamento da Seguridade Social*) are levied at a combined rate of 3.65% (cumulative method) or 9.25% (non-cumulative method) of gross revenues. The non-cumulative method allows for the deduction of capital input costs. A simplified tax regime (SIMPLES), which unifies most direct and indirect taxes into a single turnover tax (IRPJ, CSLL, PIS/PASEP, COFINS, IPI, ICMS, ISS and the employers' contribution to the Social Security), is available to small firms in specific sectors and below an annual revenue threshold (currently R$ 4,800,000). The SIMPLES tax rate varies by sector from 4% to 27.9% and is applied to turnover. The scheme is intended to reduce tax compliance costs and increase compliance by small firms (BRASIL, 2014). In addition, businesses which pay taxes under the "presumed profits" scheme of the corporate income tax remit PIS/COFINS and the corporate income taxes IRPJ and CSLL in the form of turnover taxes. There is also a special VAT on manufactured goods (IPI - *Imposto sobre Produto Industrializado*) levied at rates between 0% and 50%. Customs collect import and export duties.

Constrained by the earmarking of revenues (*receita vinculada*), different governments have created new forms of taxation to increase fiscal space, leading to the current system of multiple overlapping taxes. For instance, Cofins, CSLL and PIS/PASEP were created with the aim of overcoming constitutional constraints tying a share of revenues to specific expenditures (particularly health and education).

Firms remit social security contributions to the federal government. Employers remit 20% of their payroll as social security contribution (RGPS – *Regime Geral da Previdência Social,* and RPPS – *Regime Próprio da Previdência Social*) and 8% as unemployment contribution (FGTS - *Fundo de Garantia de Tempo de Serviço*). Employees owe social security contributions at progressive rates of 8-11% (11-20% for self-employed individuals) of their monthly wage, up to the limit of R$ 5,645.00 per month, the maximum social security benefit in the RGPS in Brazil.[2]

Dividends are fully tax-exempt, while the capital tax regime is complex, leaving many types of capital gains exempt. Exemptions from the capital gains tax apply to yields from savings accounts, mortgage-backed securities, *debêntures incentivadas* (bonds for priority infrastructure development projects) and agricultural credit bills. Most other capital gains are subject to the capital gains tax (IRRF Ganhos de Capital – *Imposto de Renda Retido na Fonte sobre Ganhos de Capital*), with varying rates depending on the type of investment (e.g. 15% for stock funds, 20-22.5% for short-term funds, 15-22.5% for long-term funds and fixed-rate investments, with the highest rates applicable to funds maturing in 180 days).

The most important state-level tax is the VAT. The VAT (ICMS - *Imposto sobre a Circulação de Mercadorias e Serviços*) is levied at a rate of 17% in most states, with the exception of São Paulo (18%), Minas Gerais (18%), and Rio de Janeiro (19%). The tax follows the origin principle, which favors producing states and leads to tax competition, as discussed further below. Special rates between 4% and 18% apply

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[2] The contributions vary by earnings levels: 8% for monthly earnings up to R$ 1693.72, 9% for earnings from R$ 1693.72 to R$ 2822.90 and 11% for earnings from to R$ 2822.90 to R$ 5645.80. This implies that the maximum social security contribution an employee makes is about R$ 550.00. Employers continue to make social security contributions pro rata even for salaries above the INSS threshold but this affects a very small proportion of workers. Civil servants in the RPPS are not affected by the INSS threshold and may receive pensions that are considerably higher.

to interstate transactions, and the revenue from those transactions is shared between origin and destination states.

States also levy inheritance taxes and motor vehicle taxes, while municipalities levy tax on property ownership and transfer. The inheritance tax rate varies slightly across states, but is typically set at 4%. There are exemptions for small gifts or inheritance, which also vary across states.[3] Property tax rates vary across municipalities up to a maximum of 15% (except for rural land holdings, which are taxed at the federal level). The tax base is generally the market value of the property, but evaluation methods vary.[4]

Tax revenue in Brazil is exceptionally high despite moderate rates. As figure 1 shows, Brazil ranks second, surpassed only by Argentina, in terms of tax revenue as a share of GDP, among comparison countries from Latin America, large emerging markets and OECD countries. Brazil's tax revenue has risen since 2000, but fell in the last eight years due to the economic crisis. Figure 2 zooms in on the four main taxes, and compares tax rates and tax revenue shares in Brazil and peer countries. Brazil exhibits strong VAT and CIT revenues, despite rates that are lower than in over half of the peer countries. For the personal income tax, Brazil's revenue and rate place it at around the 20th percentile of peer countries, though the low share is driven by the comparison with OECD countries. Brazil raises more personal income tax revenue than most peers in Latin America and other emerging markets. Social security contributions are a revenue item where Brazil underperforms, given its relatively high rate, due to large-scale exemptions and significant levels of informality. Revenue from inheritance and property taxes is also considered to be weak, due to evasion, avoidance, and outdated property cadasters and valuation methods (Orair and Gobetti 2017).

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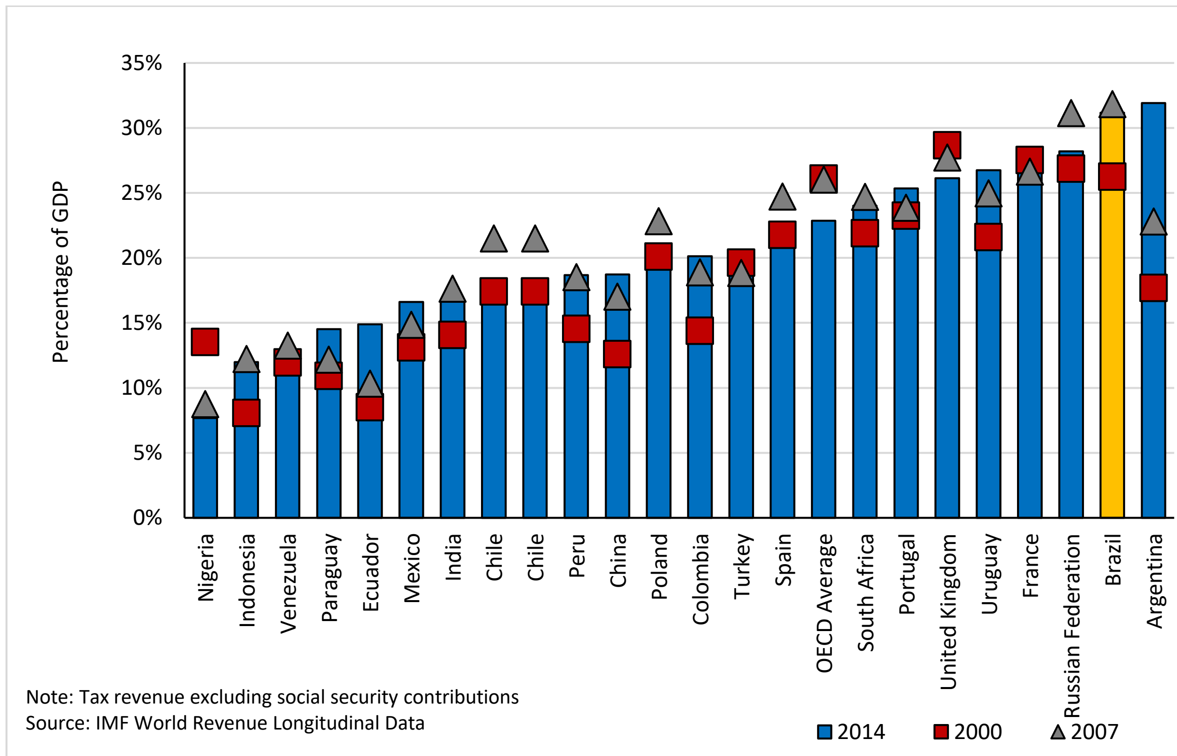
[3] For instance, the state of São Paulo exempts from tax inheritances of less than R$ 40,000 and charges a 4% rate for inheritances above this threshold, while Rio de Janeiro charges a 4.5% rate for gifts up to R$ 1,279,960.00 and 5% for gifts above this threshold.

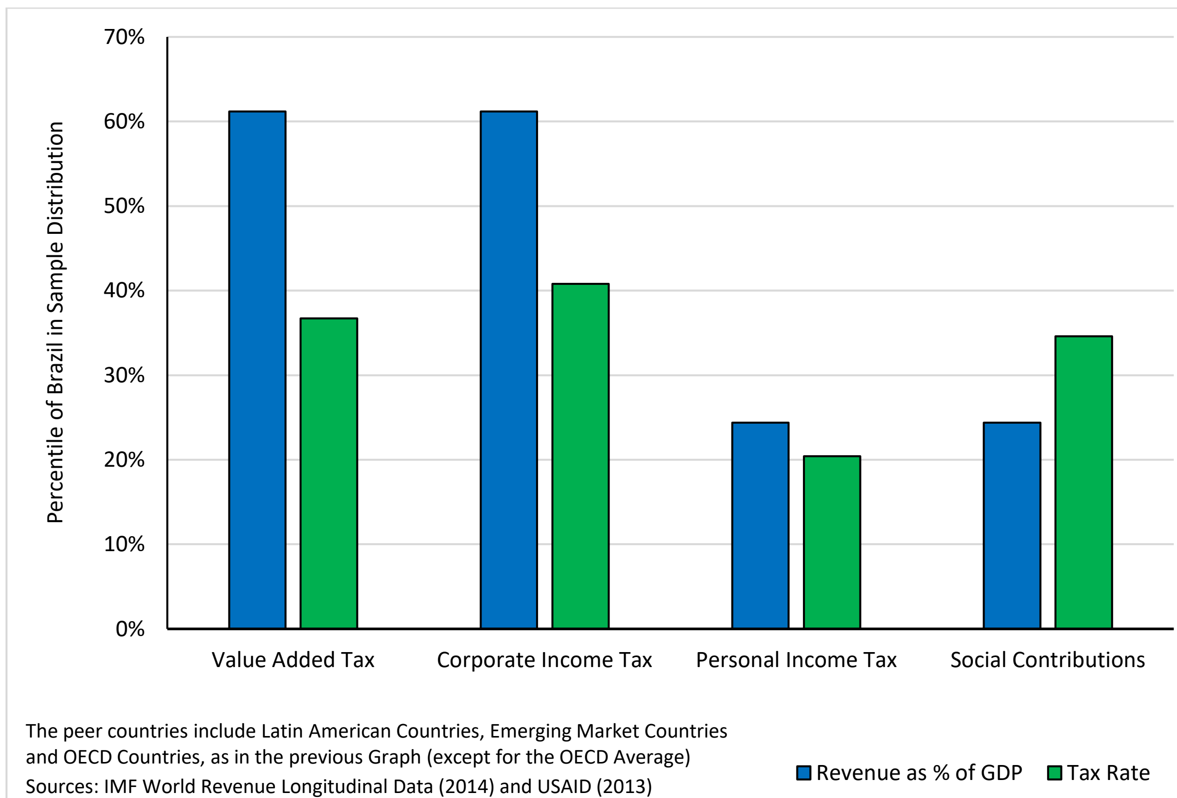
[4] Municipalities also levy a services tax (ISS – *Imposto sobre Serviços, Cobrado das Empresas*), which is a turnover tax with rates between 2% and 5% levied on the price of services. The ISS covers mostly services which are not part of the VAT base, and has been in an increasingly important source of revenue in recent years as services become a bigger part of the economy.

Figure 1: Tax Revenue: Brazil vs Peer Countries



Note: Tax revenue excluding social security contributions
Source: IMF World Revenue Longitudinal Data

Figure 2: Tax Revenue and Tax Rates: Brazil vs Peer Countries



The peer countries include Latin American Countries, Emerging Market Countries and OECD Countries, as in the previous Graph (except for the OECD Average)
Sources: IMF World Revenue Longitudinal Data (2014) and USAID (2013)

2. Key Challenges

Brazil's tax structure creates four key challenges, which are discussed in this section.

A. Production Distortions Through Turnover Taxes

Brazil's indirect tax structure relies heavily on turnover taxes which create distortions by being levied at every stage of the production chain. These taxes cascade along the production chain, leading to higher effective tax rates for downstream firms compared to upstream firms, especially in long production chains. This distorts firm's input decisions, leading to vertical integration and market segmentation, and hampers horizontal equity as firms in different sectors are taxed at different effective rates, all moving the economy away from production efficiency (Caprettini and Ciccone 2015, Jones 2011, Keen, 2013, Diamond and Mirrlees, 1971). These differential tax rates add to the distortions the tax system directly creates by imposing different taxes on goods and on services. While there is a lot of theoretical work and some empirical evidence on the presence of these distortions, there is no precise estimate of their magnitude in terms of lost GDP, neither in Brazil nor in other countries. Deriving such an estimate would likely require knowledge of at least the length of production chains, the share of taxed inputs at each production stage, and the elasticity of substitution between taxed and non-taxed inputs, parameters which could only be studied in firm-level tax return data.

Taxes at the federal, state and municipal levels compound on each other. This is because the taxes are applied to the final sales price of goods (including taxes), rather than the pre-tax sales price. Amaral, Olenike, and Amaral (2008) conduct a back-of-the-envelope calculation to estimate that, due to the cascading and compounding of indirect taxes, tax revenue as a share of GDP is 2 percentage points higher than it otherwise would be. This means that about 5% of total tax revenue might be due cascading and compounding.

Even for taxes that allow deductibility of inputs *de jure*, such deductibility is *de facto* limited. While value-added taxes in Brazil technically follow the common invoice-credit method, deducting inputs costs or claiming refunds generates additional administrative costs for firms and refunds are often granted only with severe delays. Fiscally constrainted state governments benefit from ICMS refund delays, as it provides them with short-term liquidity. However, the delays hurt the competitiveness of firms and lead to factor misallocation and lower productivity. Exporting firms are particularly affected by these features of ICMS. COFINS and PIS/PASEP likely generate similar effects on firms (World Bank, 2004: 78; IDB, 2014: 24; Likic 2017 in Sachida IPEA 2017: 36-37). Together, these challenges reduce the competitiveness of Brazilian businesses.

B. Limited Progressivity

Brazil's tax system contributes little to reducing inequality. This is well summarized in the recent Commitment to Equity study (Higgins and Pereira 2014), which considers separately the contribution of direct taxes, indirect and direct transfers, and direct taxes to inequality, measured by changes in the Gini coefficient and poverty rates. Direct taxes in Brazil reduce the Gini coefficient from 0.579 to 0.565, but this is due to movements further up in the income distribution, with the poverty head count increasing slightly with indirect taxes. A significant reduction in both the Gini coefficient (down to 0.544) and in poverty rates is achieved by direct and indirect transfers, although these transfers reduce poverty by less than their (large) amount would suggest. Indeed, only a small part of the direct transfers is well-targeted (e.g. Bolsa Familia*, Beneficio de Prestacao Continuada* and milk transfers), while a large part of transfers benefits the non-poor. Indirect taxes paid by the poor are often higher than the transfers they receive, thus increasing inequality and leading to higher poverty rates in post-fiscal income than in disposable income.

The heavy reliance on indirect taxes plays an important role in constraining the tax system's progressivity. Indirect taxes constitute almost half of total tax revenue. The fact that exemptions on consumption taxes are rare in Brazil (Corbacho, Cibils, and Lora 2013), and the cascading and compounding effects discussed in the previous section lead to high effective tax rates on consumption. Given that the poor spend a disproportionately large part of their income on consumption, they are particularly hit by high indirect tax rates. Siqueira, Nogueira and Souza (2010) estimate tax progressivity by type of good, finding that taxes on basic groceries, domestic fuel, electricity, clothing and tobacco are most regressive, while taxes on automotive fuel, transportation, education, recreation and alcoholic beverages are more progressive.

The income of high earners with non-wage income sources is not fully captured in the tax base. Most importantly, dividends are tax exempt, and only some types of capital gains are taxed. In addition, some tax exemptions and deductions benefit the wealthy disproportionately. This is the case for instance for the deductibility of health expenditures. It should also be mentioned that property tax evaluation methods could be regressive, in that municipalities allow a greater discrepancy between the assessed and actual market value for high-value properties, imposing in a relatively lower tax burden on these types of properties (Carvalho Jr 2006).

High-income individual can avoid taxes by shifting income from the personal to the corporate tax base, a phenomenon termed *pejotização.* This behavior is due to the lower effective tax rates on company income (especially under the "presumed profits" regime), the absence of dividend taxation and the higher personal income tax rates. Employers also benefit through reduced payroll taxes. This phenomenon is particularly acute among high-skilled individuals such as lawyers, physicians and engineers, and limits the progressivity of the personal income tax. According to Gobetti & Orair (2017), average effective income tax rates increase progressively until the 99th percentile of the income distribution, where the effective tax rate reaches 12.3%, only to then fall to 7% for the richest 0.05% of the population. The *pejotização* phenomenon also constitutes a violation of the horizontal equity principal, as ex ante equivalent taxpayers

experience different tax burdens (Afonso 2014).[5] Employees in government or highly regulated sectors are unable to practice *pejotização* and thus face higher effective tax rates**.** Together with the tax exemption of dividends, Gobetti and Orair (2016) consider *pejotização* as one of the reasons for the high top-income concentration in Brazil (a tenth of all income is held by the top 0.1%). Although the equity issue is widely recognized in academic circles, it is not yet a prominent topic in political dialogue on taxation (IDB, 2013).

C. Tax Competition

Fiscally constrained states compete for mobile tax bases.[6] Taking advantage of the freedom to set rates for ICMS, state governments offer discounts to firms with mobile economic activities to induce them to locate to their states, while concentrating taxation on immobile activities (e.g., petroleum refineries, utilities, gas stations). ICMS discounts can be granted in the form of reduced rates, higher tax credits, or changes in tax collection and refund timing (Alves, 2001).

Granting tax benefits creates short-term advantages for "winning" states. The official objective of such policies is of course to promote local eocnomic development. States may gain not only directly through firms' tax remittances, but also through job creation. According to Rezende (2009a), the fiscal war might actually generate long-term positive results for the winner states in the competition for investments. But such gains are more than offset by overall losses in revenues, creating a classical coordination problem.

Tax competition aggravates the distortions created by Brazil's cumbersome tax system. The lack of harmony among ICMS rates render the tax non-neutral, harming production efficiency (IDB 2013). Baratto and Macedo (2007) analyze the distortions caused by the evasion and tax avoidance mechanisms, confirming that both neutrality and tax simplification are compromised by the implementation of the ICMS (differing tax rates and types of benefits and tax incentives). In addition, tax exemptions are often granted in ad hoc ways, making the tax system less transparent.

Another distortion generated by Brazil's tax structure is the tax advantage of producing states compared to consuming states. Indeed, ICMS is collected where the good is produced (origin) and not where the good is sold (destination). This is unusual, as consumption taxes in most other countries follow

[5] Smith et al (2017) argue that a similar phenomenon has occurred in the US, where a large share in top income inequality is driven by the "working rich", i.e. S-corporation owners in certain high-skilled sectors.

[6] The economic effects of tax competition in the academic literature focused almost exclusively on the effects of tax rate competition for aggregate investment within the U.S. (state or local governments). These studies have identified various potential inefficiencies associated with tax competition and often provided support for tax harmonization within a union (Zodrow 2003). Oates (1972) noticed that local governments, while competing for mobile capital, are likely to "keep taxes low to attract business investment" and that the result of such tax competition "may well be a tendency toward less than efficient levels of output of local services." Zodrow and Mieszkowski (1986) and Wilson (1986) formalized this notion in models in which local government reliance on a source-based tax on capital income—e.g., the capital component of the property tax—resulted in under provision of local public services.

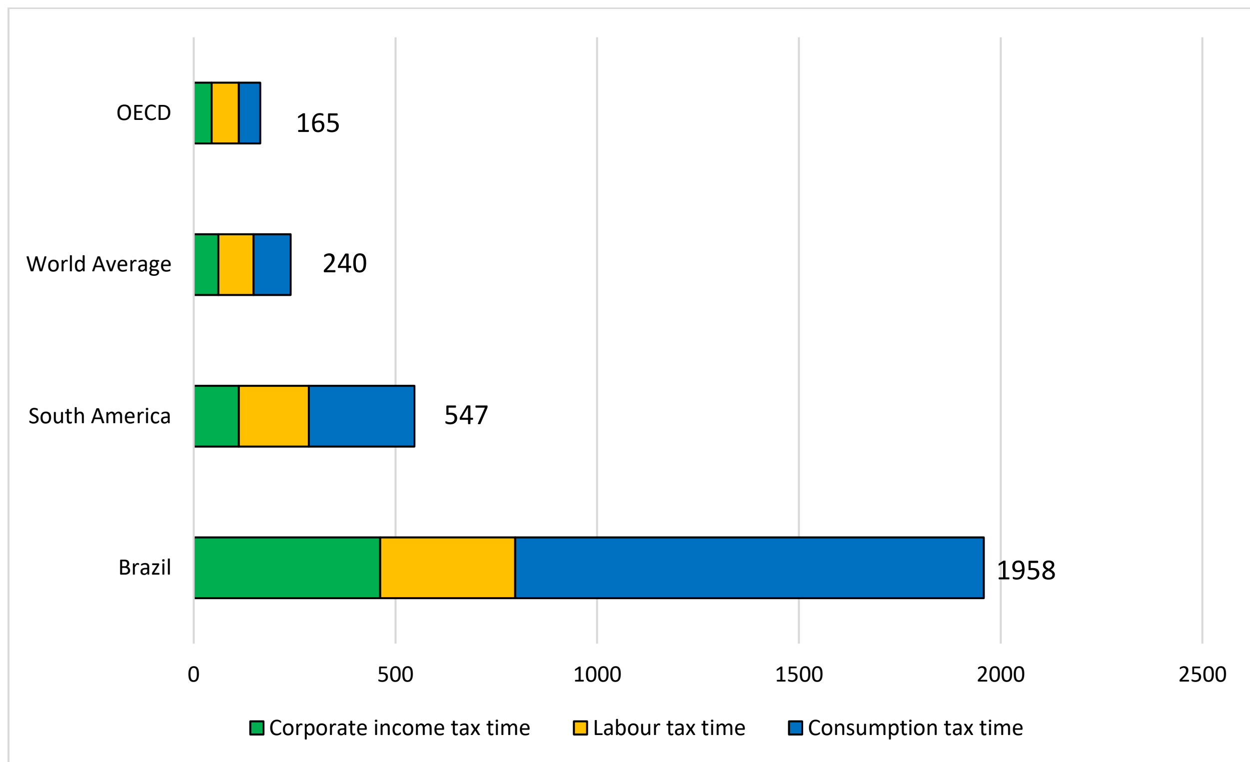
the destination principle, according to which a good is taxed at consumption stage. Brazil has some sharing rules designed to ensure that destination states receive a share of the ICMS collected at production stage, but they do not fully relieve the imbalance. The need to adopt the destination principle for consumption taxes is widely recognized: "Adoption of the destination principle for subnational taxation on goods and services is a necessity that has enjoyed wide recognition for some time now, and was analyzed with a reasonable degree of detail in previous Brazilian State Fiscal Forum studies" (Baratto and Lobato, 2007, p. 20). Adopting the destination principle would also reduce “the possibility of a state granting an incentive whose cost in terms of lost revenue falls on another state” (Varsano 2014, p. 39).

D. Compliance Costs

Brazil’s tax system imposes exceedingly high compliance costs on taxpayers.[7] The costs are due to a) the complex structure of taxes and the combination of state, federal and municipal taxes with different collection agencies for each; b) frequent legislative and regulatory changes, which mean taxpayers have to invest in verifying tax system parameters frequently and are subject to uncertainty; and c) burdensome reporting requirements. Reporting has been digitized through the *Sistema Público de Escrituração Digital* (SPED), which has initially created additional compliance costs for taxpayers, but ultimately facilitates the tracking of transactions and data cross-checks for compliance purposes. As figure 3 indicates, taxpayers in Brazil spend almost four times as much time to comply with their tax obligations as do taxpayers in other Latin American countries, and over ten times as much time as taxpayers in OECD countries (PWC 2018). Similarly, it takes an average of 86.6 weeks (39 days) in Brazil to comply with a corporate income tax audit (correct an incorrect corporate income tax return), compared to 39.8 weeks (13.4 days) on average in Latin America, and 24.6 weeks (7.3 days) in OECD countries.

[7] High tax compliance costs are associated with larger informal sectors, more corruption and less investment. Simple, well-designed tax systems support the growth of businesses and, ultimately, the growth of overall investment and employment (Djankov et al. 2010).

Figure 3: Time to comply with taxes



Source: Paying Taxes (2018).

The costs of tax compliance are larger for the state-level ICMS than for the federal taxes. This is especially true for firms operating in more than one state because of the differences in the structure and administration of the ICMS across states. Ellery and Junior (2017: 23) point out that each state has different legislation and a different rate for each product. Moreover, there are specific regulations for the application of ICMS in trade between states and for products destined for foreign trade. The authors document that the number of different rates ranges from 2 to 11 according to the state, and the rates range from 1% to 38%. Figure 3 also indicates that Brazilian companies spend the largest part of the total time to comply with consumption taxes (59.2%). However, the compliance cost is not only due to ICMS. Indeed, the time to comply with labor taxes and corporate income taxes is also much larger than in other countries. The SIMPLES regime was created as a response to the high compliance costs, but it is unclear to what extent the regime has reduced informality. Instead it seems to have encouraged tax arbitrage for many liberal professions and created distortions of its own, by encouraging firms to stay small (Dutz et al., 2018).

3. Policy Options

A. Detailed reform plans have been prepared

Reducing the distortions in Brazil's tax system in a revenue neutral way, without succumbing to second best fixes which would create new challenges, requires a wide-ranging reform of indirect and direct taxes. Numerous and highly detailed proposals have been presented to reform indirect taxes, specifically to replace turnover taxes by a federal VAT. These proposals include considerations for transition periods and the compensation of reform "losers", and are widely discussed in the public domain. Proposals to reform income taxes have not yet been discussed with the same level of detail, but are no less important to ensure the efficiency and progressivity of the tax system. The World Bank is ready to support the development and analysis of proposals to reform direct taxes with a view to increasing progressivity and closing avoidance loopholes. As tax revenue is already high despite moderate tax rates, the reform efforts should be conceived of as overall revenue neutral, while shifting the tax burden away from production and towards income.

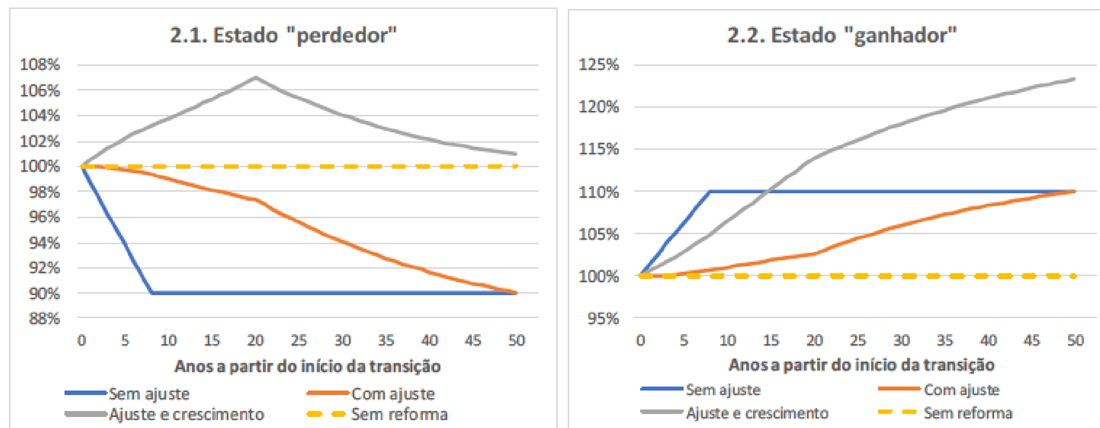
Currently the most widely discussed reform proposal, the Appy/CCiF plan provides for a new VAT, with a detailed transition plan. Following international best practices and carefully addressing the main issues in the current indirect tax system, the proposal aims to replace five current indirect taxes (PIS, Cofins, IPI, ICMS, ISS) by a single VAT, or *Imposto sobre Bens e Serviços* (IBS). The IBS would follow the destination principle and implement the invoice credit method, with a broad taxbase that would exempt only exports and investments. Refunds for net credits would be provided to taxpayers within a maximum of 60 days. The tax would thus be practically non-distortionary. The same tax rate would apply to all goods and services consumed within a state, but states could choose to levy a rate different from the "reference rate". As the new tax would relieve production inefficiencies, its implementation would likley lead to higher economic growth.[8]

The key challenge in implementing the Appy proposal is the ten-year transition period. This long transition is intended to allow sufficient time for prices to adjust and for firms to renegotiate contracts and recalibrate their production decisions to the new tax system. In the first year, the IBS would be levied at a rate of 1% as a proof of concept. The rate would then be gradually increased over the next eight years, while the rates for the other taxes would be gradually reduced to reach 0% by the end of the phase-in. A new revenue distribution mechanism between federal governments and lower-level jurisdictions would be phased in over an even longer period, reaching steady-state only after 50 years. For the first 20 years, states would be fully compensated for any losses from the switch from origin to destination principle. This compensation would then be phased out over 30 years (as simulated in figure 4 below). This long transition period creates the risk that the reform might be halted or reversed before the full benefits have been reaped. A partial implementation could lead to an even more complex and distortionary tax system

[8] As the taxes which the IBS would replace are a subset of the taxes which SIMPLES replaces, it is recognized that an introduction of the IBS would require a rethinking of SIMPLES. An option would be to give SIMPLES firms the choice between 1) remaining in the SIMPLES regime, with the SIMPLES rate then being calibrated with regards to the IBS rather than PIS, COFINS, ICMS, ISSS and IPI; or 2) adopt the IBS credit and debit regime, and pay income tax according to the actual or presumed profit method. However, a broader rethinking of SIMPLES may be warranted given evidence of its limited effectiveness and high fiscal cost.

than the current one. In addition, given the uniformity of the VAT rate proposed, and the absence of exemptions for food production or necessity goods, it is unclear whether the reform would increase the progressivity of indirect taxes.

Figure 4: State Revenue (% in the case of ICMS maintenance)



Source: Appy Reform Proposal.
Notes: Scenarios elaborated assuming a 2% real growth of the economy (without considering the positive impact of the reform). For the construction of the scenario which also considers the positive impact of the reform on growth (gray line) it was assumed that the reform would raise the potential GDP growth rate by 0.5% per year for the first 20 years and 0.05 % per year for the subsequent 30 years.

The Hauly proposal suggests a more ambitious overhaul than the Appy proposal, comprehensively reforming indirect taxes and making smaller reforms to direct taxes. The proposal consists in replacing the five taxes which the Appy proposal would replace, in addition to the IOF, CSLL, *Salário Educação* and CIDE-*Combustíveis* with a state-administered IBS, similar to the Appy proposal, and a federally-administered excise tax (IS - *Imposto Selective*).[9] The excise tax would apply to oil and derivatives, fuel, tobacco products, alcohol and specific vehicles. The proposal also suggests increasing the scope of applicability of the IPVA, making some marginal changes to the IRPJ base, and reassigning the jurisdiction of the inheritance tax to the federal level. Importantly, the Hauly proposal would explicitly forbid tax exemptions and amnesties, though a small number of goods such a food and health products would benefit from tax advantages.

The Hauly proposal differs from the Appy proposal in that it is broader, yet less specific, and leaves a shorter transition period of 5-15 years. The main reform is proposed as a constitutional amendment, which could ensure greater stability of the new system, but a large number of details would have to be determined by complementary laws which would presumably take a long time to ratify. The reform would also require organizational changes, such as the creation of a *Superfisco* body formed by state administrations to administer the IBS and a Solidarity Fund. A compensation scheme based on tax

[9] It is not necessarily the clear which one is the ideal jurisdiction for each of those taxes. While efficiency objectives suggest that it would be optimal for taxes to be set and administered uniformly across the territory, administrative capacity constraints and proximity requirements may necessitate local-level administration of some duties.

revenues in the previous three years would ensure that no jurisdiction loses revenue for the first five years, after which the system would transition to new sharing criteria.

A comprehensive reform package should also include measures to broaden direct tax bases. Some of these have been suggested by Gobetti and Orair (2017). First, the income tax base should be broadened to include all forms of capital gains, and some regressive deductions, such as the deduction for healthcare expenditures, should be eliminated or capped. In addition, dividend taxation should be reinstated, and compliance with property and inheritance taxes should be improved. Combined with indirect tax reform, these efforts would shift the tax burden away from production and onto income and wealth, and could lead to higher revenues.

A harmonization of income tax rates on different bases could reduce income shifting. A first step towards reducing incentives for *pejotização* would be the reduction of employer social security contributions, or a cap thereon. Indeed, while employee contributions are presently capped at the INSS threshold, employer contributions are not, leading to a sharp decline in the internal rate of return of social security contributions for high wage earners. While these represent a very small portion of overall contributors, they are overrepresented among those seeking to exploit tax arbitrage. Corporate income taxes should be carefully reviewed in line with OECD standards to avoid capital flight.

A dual income tax, as used in Scandinavia and Chile, could eliminate the tax difference between capital and labor earnings. In such a model, normal capital returns would be taxed at the business level (using corporate income taxes) and super-normal returns would be taxed at the individual level (using dividend taxes). A reference level of normal returns could be computed using the SELIC and the method currently used to compute interests on own capital. This method is already used by firms which do not pay taxes under the "actual profits" regime of the CIT. Super-normal returns would be returns above this reference rate. Gobetti and Orair propose that a 22.5% rate be applied to normal returns, while a dividend tax of 15% be applied to super-normal returns. This model has two advantages. First, because it reduces the taxation on profits from 24-34% in the current model to 22.5%, it minimizes the inefficiencies generated by capital taxation and increase the competitiveness of Brazil's firms in international markets. Second, because it institutes dividend taxation, it reduces the incentives for *pejotização*.[10] A dual income tax would thus close regressive tax avoidance loopholes and improve the progressivity of the income tax. By doing so, the reform might also increase tax morale and taxpayers' intrinsic willingness to comply.

B. Recent experience with VAT reform in other emerging markets provides helpful insights

A major reform with relevance for Brazil is the introduction of the Goods and Services Tax (GST) in India in 2017. A federal country like Brazil, India previously had a centralized federal VAT (CENVAT), in addition to state level VATs. This lead to cumulation of the two taxes, and restricted trade between states, as VAT from out-of-state purchases was collected at state border posts. The state VATs were thus effectively

[10] A worker who receives R$ 30,000 per month would pay a marginal tax rate of 35% if receiving her income as labor income and a marginal tax rate of 34.1% if receiving her income through a company (22.5% on profits at the company level + 15% of the remaining 77.5% on dividends at the individual level).

import tariffs, giving producers an incentive to insource from within the state. Firms operating in several states had to file separate VAT returns in each state. The new GST introduced a unified VAT at the federal level, with part of its administration conducted at the state level.

Early anecdotal evidence suggest that the GST reduced trade costs, but implementation is proving logistically challenging for firms and tax administrations. While the GST subsumed numerous state and local levies into one centralized VAT, it remains a complex tax, with six different rates for different products. In addition, the GST was introduced relatively abruptly, with little time for firms and tax administrations to gather information about the new system, filing requirements, and reclaim processes. State tax administrations are supposed to maintain jurisdiction over small taxpayers, while the federal tax administration has jurisdiction over large taxpayers, though there is some confusion over the exact division of responsibilities. On the positive side, analysts report that the queues of lorries at state borders have reduced, and firms no longer need to replicate warehouses and supply structures in multiple states.

A key institutional feature of the reform that ensured buy-in from state governments is the GST council, which represents both federal and state executive branches and is responsible for all major policy decisions regarding the VAT. India has recently witnessed a trend of decentralization of spending powers from the federal to the state level, and the GST proposal lead states to fear losing autonomy to the central government. In addition, states with larger production bases feared losing revenue to poorer states with stronger consumption relative to production. While the main GST legislation was ratified by the national parliament and state legislatures (as it constitutes a constitutional amendment), the GST Council deliberates about the details of the GST implementation. For instance, the GST council sets rates and regulations, and requires a ¾ majority of weighted votes of the members (with the central government having 1/3 of the votes and all states having equal vote shares). In addition to this, the VAT law carries a provision for compensating states for tax revenue losses due to the transition to the GST over the next five years.

C. Micro-empirical analysis can help flesh out reform proposals

Micro-empirical analysis based on tax-return data can help improve the design of reform proposals. To predict the impact of a particular policy change, and compare the costs and benefits of various reform options, policy makers need to have estimates of taxpayers' behavioral responses to tax system parameters, such as the elasticity of reported taxable income with respect to the tax rate, the elasticity of evasion with respect to enforcement parameters, or the elasticity of wage earners switching into self-employed status with respect to the tax rate differential between personal and corporate income taxes. These parameters can be estimated using quasi-experimental variation in the current tax system, i.e. previous changes or variation across groups of taxpayers in tax rates, bracket thresholds, tax base definitions and tax enforcement policies. Tax administration in the United States, the United Kingdom, various Scandinavian countries, and many middle and lower-income countries (Costa Rica, Chile, Pakistan, Rwanda, Senegal, Uganda etc) have provided researchers access to anonymized federal tax data, and the analysis has influenced policy debates. In Pakistan, for instance, the analysis by Kleven and Waseem (2013) of bunching at distortionary tax rate thresholds in the personal income tax schedule has led to the redesign of the tax schedule.

Brazil is a pioneer in data collection, and could become a leader in providing access for research purposes. Tax declarations in Brazil are uniquely detailed, which imposes a compliance cost on firms, but allows researchers a deep insight into taxpayer behavior. More importantly, third-party reporting of transactions, particularly through the NF-e electronic transaction receipts, allows mapping transaction networks and verifying taxpayers' reported deductions. While many countries collect transaction records for credit or debit card transactions, few collect these data as systematically and with as high a coverage as Brazil does. Unfortunately, Brazil does not have systematic data access protocols for research projects. While some local governments have ad hoc research partnerships with academic and international organization, setting up such an arrangement at the federal level has not yet been possible.

The World Bank stands ready to support Brazil in creating an environment for data-driven policy design. The Bank's support can focus on logistic advice regarding data security infrastructure, organizational support in setting up a data laboratory, for instance at *Receitas Federais* or Ipea, or analytical support in studying policy-relevant questions, such as distortions generated by cascading and compounding of indirect taxes, income-shifting from the personal to the corporate income tax base, compliance with property and inheritance taxes, and new questions related to the taxation of the gig economy, sin taxation, and environmental taxation.

Appendix: Small Reform Proposals

Proposal	Taxes to be eliminated	Taxes to be created
Executive's Late 1997 Proposal October 1997	All turnover and cascading taxes (Cofins, PIS-Pasep), except tax on financial transactions Federal tax on manufactured products (IPI) State VAT (ICMS) Service tax charged by local governments (ISS)	Nationally-managed VAT Federal excise tax on goods and services Retail sales tax (IVV)
Executive's Late 1999 Proposal October 1999	All turnover and cascading taxes (Cofins, PIS-Pasep), except tax on financial transactions Federal tax on manufactured products (IPI) State VAT (ICMS) Service tax charged by local governments (ISS)	Federal VAT State excise tax on goods and services Municipal retail sales tax (IVV)
Special Committee's Proposal March 2000	All turnover and cascading taxes (Cofins, PIS-Pasep, CPMF) Federal tax on manufactured products (IPI) State VAT (ICMS) Service tax charged by local governments (ISS)	Dual VAT (coexisting federal and state VATs) Municipal retail sales tax (IVV)
Non-voted Rapporteurs's Proposal March 2000	All turnover and cascading taxes (Cofins, PIS-Pasep, CPMF) Federal tax on manufactured products (IPI) State VAT (ICMS) Service tax charged by local governments (ISS)	Dual VAT (coexisting federal and state VATs) Non-cumulative excise tax
Executive's Proposal August 2000	Federal tax on manufactured products (IPI) State VAT (ICMS)	Federal tax on goods and services (IBS) Nationally uniformed state

	Service tax charged by local governments (ISS)	VAT Municipal retail sales tax (IVV)
Executive's Proposal 2008	All turnover and cascading taxes (Cofins, PIS-Pasep) CIDE (fuels) Salário Educação CSLL State VAT (ICMS)	Federal VAT (destination principle) New ICMS Incorparate CSLL into IRPJ (Creates a Fund to Equalize Revenues - compensate loosers)

Source: Werneck (2008); Proposta de Sistema Tributário (2008)

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