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Case Study

Strengthening Personal Income Taxation in Senegal

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Strengthening Personal Income Taxation in Senegal¹

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Contents

Summary	1
Context	2
Personal Income Taxation in Senegal	4
Adding Income from Multiple Administrative Sources to Consolidate the Personal Income Tax	7
How Rich Are the Top Earners in the Consolidated Tax Data?	10
High Net Worth Individuals (HNWIs)	12
Revenue Gains from Consolidation and Tax Enforcement	14
Recommendations	17
References	19



Summary

As part of its medium-term revenue strategy, Senegal's Finance and Budget Ministry plans to raise its tax-to-GDP ratio to 20 percent. The tax administration (Direction Générale des Impôts et Domaines, DGID) aims to accomplish this by broadening the tax base and equitably raising tax compliance under the YAATAL project. Revenue collection from the personal income tax, a key revenue source in OECD countries, accounts for less than 20 percent of Senegal's tax mix. Focusing on the top of the distribution, this project uses new administrative tax data to describe the current state of the personal income tax (PIT) in Senegal and possible ways it can be improved.

According to the tax law, all income sources must be pooled to assess each individual's total personal income tax liability. In practice, however, the different sources are mostly taxed using withholding mechanisms. By integrating multiple databases on income and wealth (salaries, property income,

dividends, and shares in large companies), this project first estimates total individual income, thus consolidating the tax base against which true marginal tax rates should be set. We document an extremely narrow tax base (excluding civil servants), with only 3.1 percent of the adult population paying income tax (directly or through withholding). We show that our consolidated administrative dataset captures well beyond the top 0.1 percent of the national distribution, and, under conservative assumptions, we estimate that enforcing PIT on a better-assessed tax base encompassing only the richest 2,550 individuals (the top 0.03 percent) could raise tax revenue by XOF 12 billion (i.e., 0.4 percent of total tax revenue and 3.4 percent of PIT revenue). Finally, we make recommendations on practical steps the tax administration can take to strengthen personal income taxation in the short and medium term via communication, enforcement, and data collection activities.





Context

With a population of 17.7 million and a GDP of \$24.9 billion in 2020, Senegal is the second largest economy in the West African Economic and Monetary Union (WAEMU).²

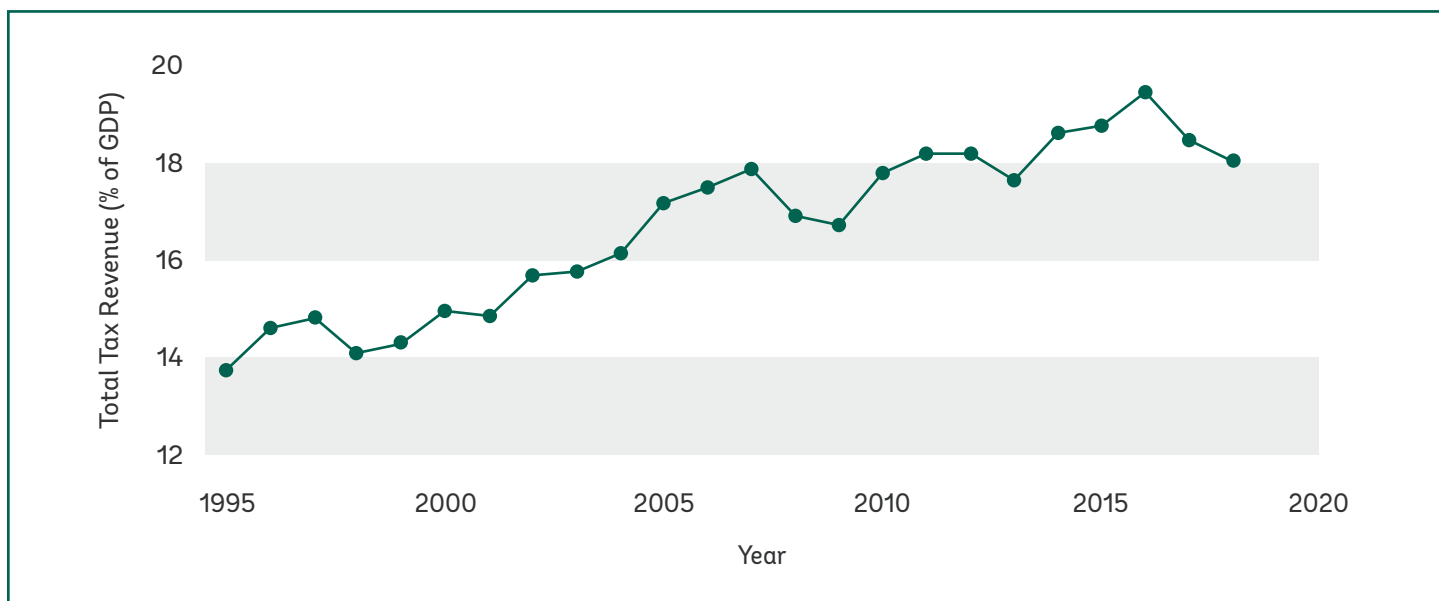
Between 2014 and 2018, Senegal experienced an annual growth rate of over 6 percent, but this momentum was interrupted by the COVID-19 pandemic, which reduced growth to 0.87 percent.³ The decline is a consequence of the measures taken to stop the spread of the virus, which dealt a blow to the tourism, transport, services, and export sectors and highlighted the country's dependence on the rest

of the world. Indeed, Senegal's economy is dominated by the tertiary sector (51.2 percent of GDP in 2019), and its trade is characterized by imports of finished products.

To boost its development, Senegal must increase its resilience to macroeconomic risks by increasing its budgetary reserves. However, the WAEMU's convergence criteria have not yet been met in terms of tax revenue collection. Indeed, Senegal's **tax-to-GDP ratio was 17.6 percent in 2019, below the 20 percent objective set for WAEMU countries.**

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FIGURE 1 - Evolution of Tax Share of GDP in Senegal



Source: Combined information from UNU-WIDER Government Revenue Dataset, OECD, and archives.

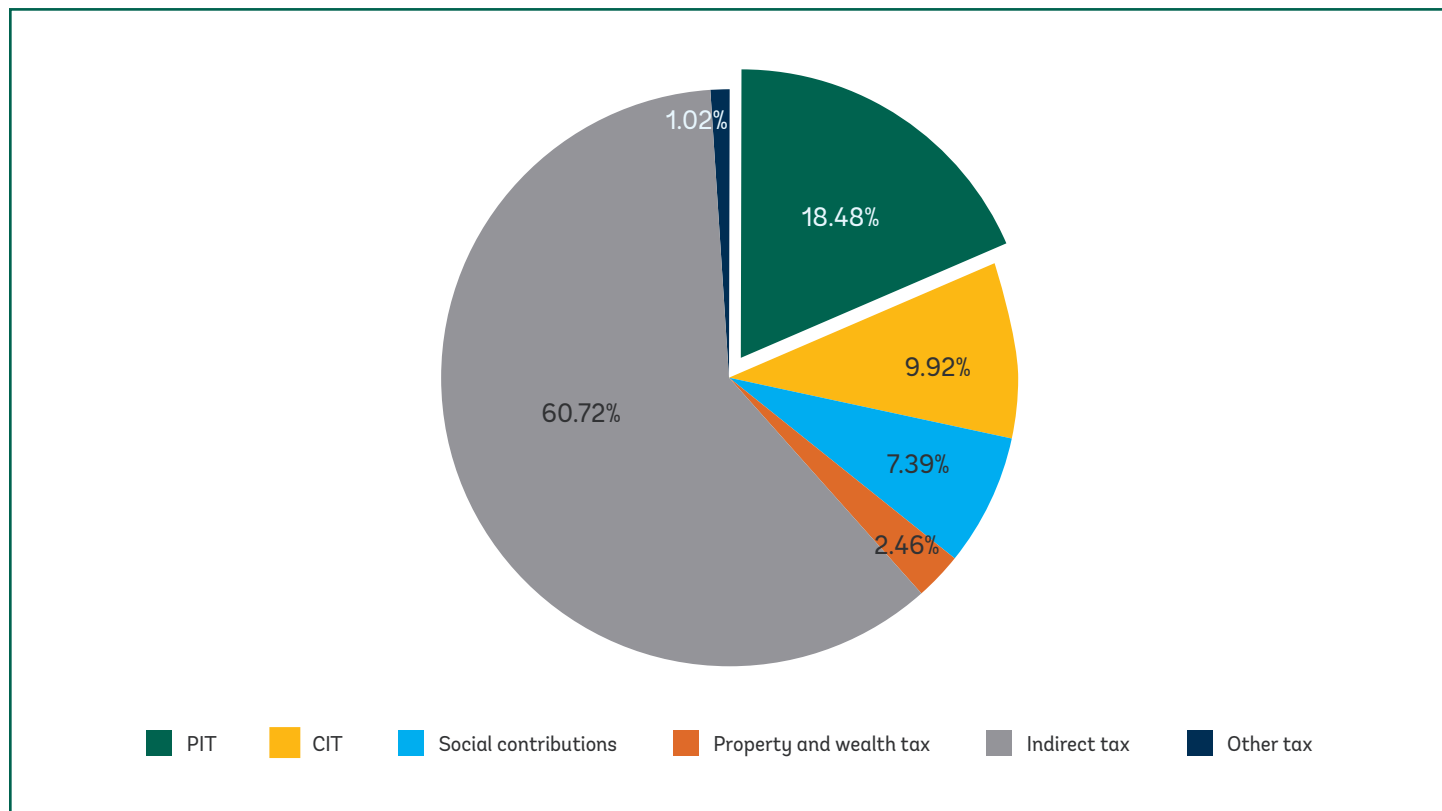
2. Sénégal—Vue D'ensemble (World Bank), at <https://www.banquemondiale.org/fr/country/senegal/overview>.

3. Unless otherwise noted, all statistics in this section are from the Economic and Social Report 2019 (ANSD 2019), prepared by Senegal's Agence Nationale de Statistique et de la Démographie (ANSD; National Agency of Statistics and Demography).

While tax revenue grew pre-pandemic (from 15.4 percent to 17.65 percent of GDP between 2017 and 2019), this was mainly due to taxes levied on goods and services (VAT) and customs duties, which represent 51 percent of all tax revenue.⁴ Taxes on income, profits, and capital gains only account for 29 percent of total revenue.

> > >

FIGURE 2 - Senegal's Tax Mix in 2018



Source: Combined information from UNU-WIDER Government Revenue Dataset, OECD, and archives.

In this context, under the YAATAL project,⁵ **the Senegalese tax administration** (DGID, Direction Générale des Impôts et Domaines) **aims to broaden the tax base and raise tax compliance**, participating in the medium-term effort of the Finance and Budget Ministry to increase the tax-to-GDP ratio to 20 percent by 2023. Simultaneously, the DGID aims to increase income tax progressivity, as evidenced by the 2022 increase in the top marginal tax rate (from 40 to 43 percent).

Over the past five years, the DGID has collaborated with external partners (including UCLouvain, World Bank, Paris School of Economics, and J-PAL) to help achieve these goals and improve its use of data and analytics. This report details the progress made toward improved statistics on the personal income tax and on high net worth individuals and provides policy recommendations to improve taxation.

4. ANSD 2019.

5. *Yaatal* means "to expand" in Wolof.



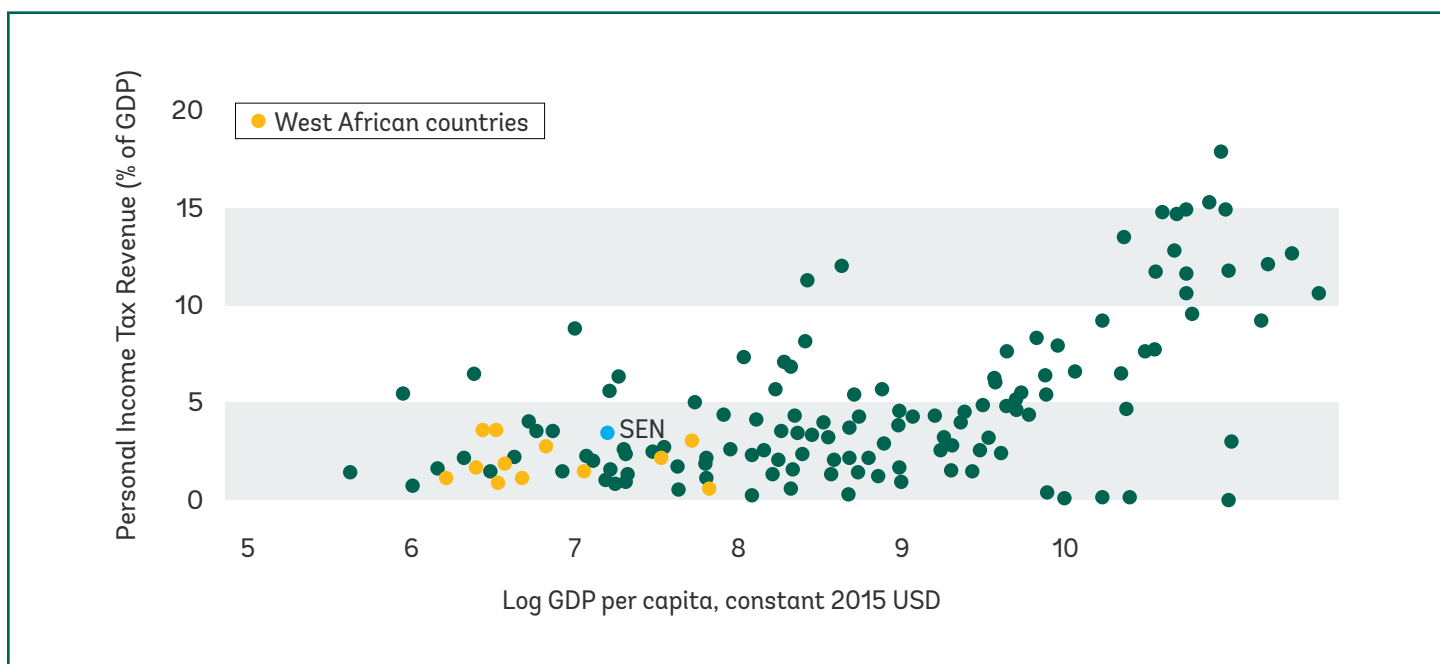
Personal Income Taxation in Senegal

In Senegal, adult residents are subject to an annual personal income tax (PIT) on their income (labor and business income, rents, pensions, interest, dividends, and capital gains). Rates on the progressive, seven-bracket schedule range from 20 percent (at XOF 630,000, i.e., US\$1,000) to 43 percent (at XOF 50,000,000, i.e., US\$80,000). All income types are withheld at the source, except rental income from properties and mixed income from business activity.⁶ Taxpayers receive tax rebates ranging from XOF 100,000 (US\$160) to XOF 3,180,000 (US\$5,088), depending on family composition.

The personal income tax yields little revenue compared to the yield in OECD countries, although it collects amounts similar to those in other countries at the same income level. This limits the progressivity achieved by the tax system and the revenues available to fund public goods and transfers to poor households.



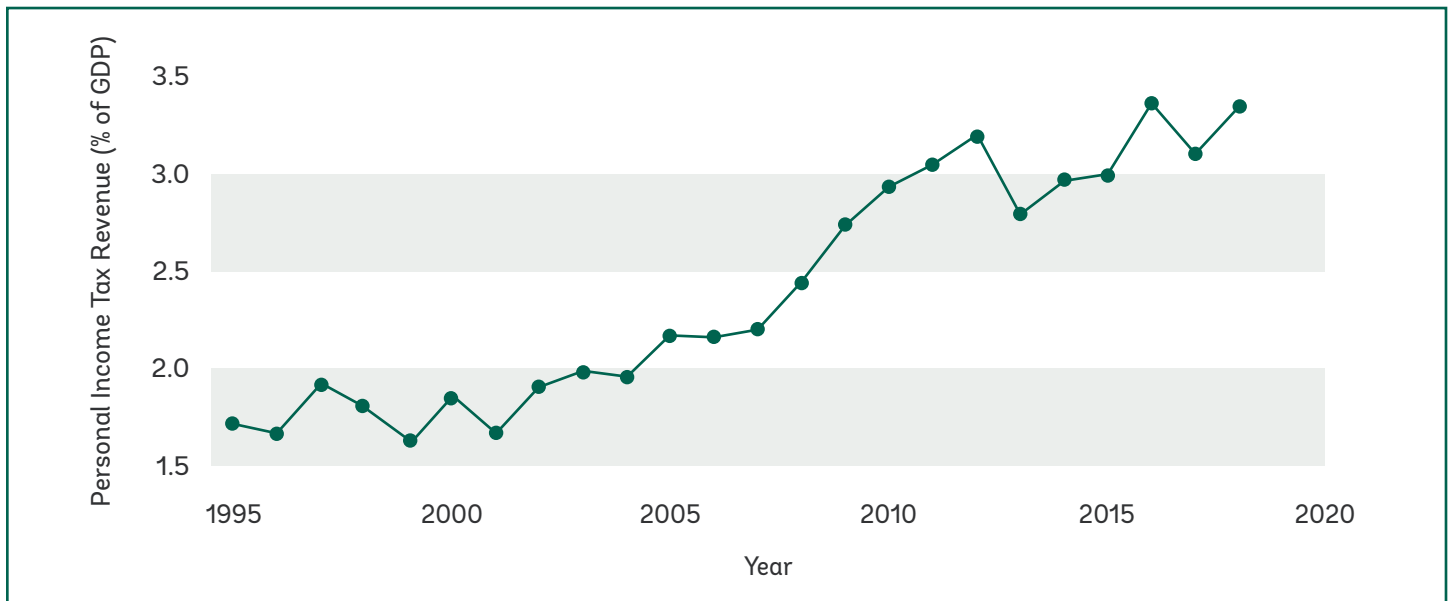
FIGURE 3 - PIT to GDP Ratio Across the World in 2018



Source: Combined information from UNU-WIDER Government Revenue Dataset, OECD, and archives.

6. Note that rents and mixed income are subject to withholding when the taxpayer is an incorporated firm.

FIGURE 4 - Evolution of PIT as a Share of GDP in Senegal



Source: Combined information from UNU-WIDER Government Revenue Dataset, OECD, and archives.

In Senegal, the law imposes a global tax base: all sources of income are pooled to determine the applicable tax rate. In particular, each individual should self-report her income each year by submitting an Impôt sur le Revenu (IR) form. Although the Tax Code imposes an **integrated income tax** de jure, it is not enforced in practice. PIT is mainly collected via withholding and not from income tax declarations.

Meetings with tax administration officials show the following practices:

- Each year fewer than 10,000 individuals file for PIT, and we estimate that about 250,000 individuals are taxed through withholding only (i.e., 0.1 percent and 3.1 percent

of the adult population, respectively). Yet there are almost no audits for individuals, as opposed to firms.

- Administration officials agree that solidifying the PIT base would be beneficial and that, in line with YAATAL, all taxpayers should be filing PIT.
- In practice, however, when taxes are withheld, tax officers do not devote effort to making taxpayers submit PIT declarations, perhaps because they consider that their resources are better allocated elsewhere.
- As a result, personal income taxation is not as progressive as it could be.

BOX 1 - International Standards for the Design of Personal Income Taxes (PIT)

Principles of personal income taxation:

Tax rate: In most countries, the **marginal tax rate** (MTR) increases with income, and the PIT is thus progressive by design. In poorer countries, a high income exemption threshold implies that only individuals earning income at the top of the distribution contribute to the PIT. The top rate typically ranges between 30 percent and 50 percent, depending on the country.

Tax Base: The definition of the income tax base varies substantially across countries:

- An integrated or **global tax base** pools salaries, investment income, business income, and capital gains. It enhances the equity of the tax system and disincentivizes shifting income types for tax optimization purposes.
- A **schedular tax base** taxes each income source separately. It is simpler to set up administratively and can limit double taxation of capital income.
- In most countries, the tax base includes salaries, rental income, and some business income. Some tax bases also include dividends and interests. Capital gains typically have specific rules and tax schedules.

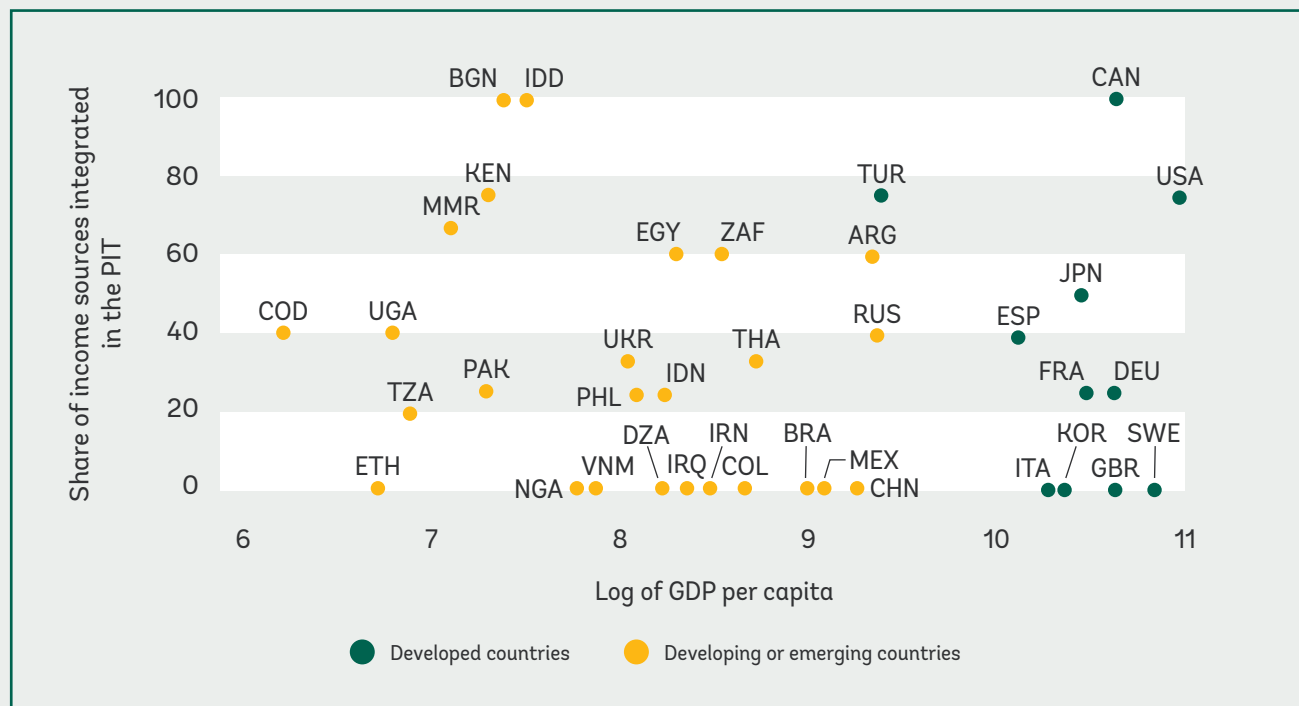
International comparison of tax base:

The degree of tax base integration does not appear to be correlated with countries' income per capita.

We looked at the largest 26 developing countries and at 11 rich countries' tax systems using tax summaries by PWC and tax profiles by KPMG. In most countries, employment income is the basis of the personal income tax and is taxed at progressive rates. Business income is part of the PIT in 16 of the studied countries and separated in 3. Most deviations from a global system come from investment income sources and include many special cases. In 15 of the 37 countries evaluated, rental income is part of total integrated income. This is also the case for dividends in 5 countries, for interest in 8 countries, and for capital gains in 10 countries. The tax schedule is often complex and subject to exemptions.

> > >

FIGURE 5 - Schedularity Across Countries' Tax Systems



Source: Authors' computation based on PWC and KPMG tax summaries and World Bank GDP data.



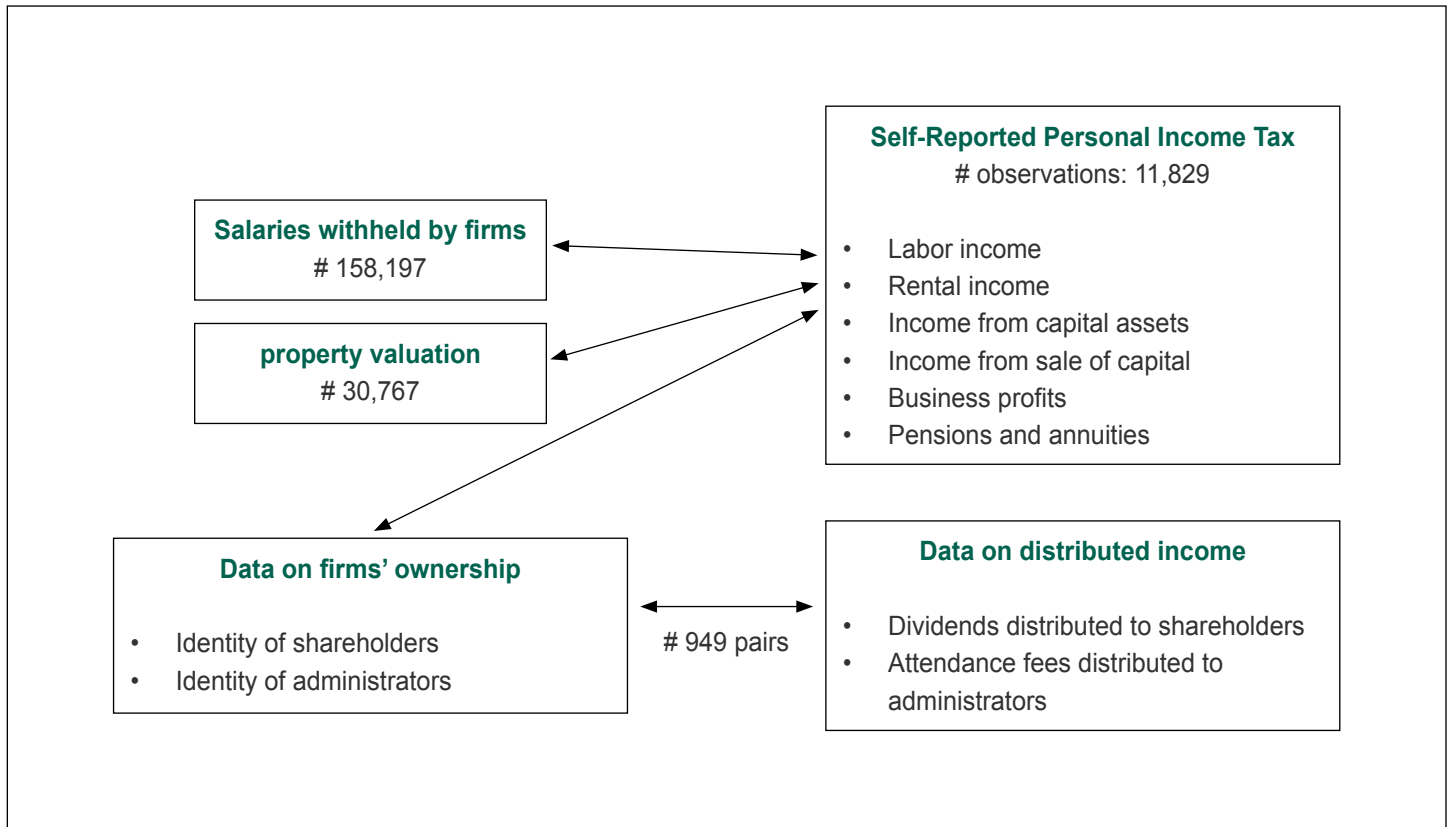
Adding Income from Multiple Administrative Sources to Consolidate the Personal Income Tax

A key objective of the project is to map the distribution of income and wealth in Senegal to identify high net worth individuals. To achieve this, we accessed various data sources available to the tax administration.

- **Impôt sur le Revenu (IR; self-reported PIT).** The IR is the tax statements submitted by individuals. About 10,000 IRs are submitted each year, containing information on income (total and by source), with systematic fiscal identifiers (Numéro d'Identification National des Entreprises et Associations, **NINEA**).
- **États 1024 (withheld salaries).** This data on salaries is reported by firms (PAYE). Firms provide the name, family composition factor, job title, and gender of employees whose tax they withhold. For some, we also have national ID numbers (Carte Nationale d'Identité, henceforth **CNI**) and physical addresses that could be further exploited. In 2020, this data was reported on 158,197 employees.
- **SIGUIL (property tax).** SIGUIL is the property tax valuation roll, reporting the rental value of each property. This includes information on (rental) incomes of owners who rent their property and on the housing wealth of all property owners, including owner-occupied properties. (We capitalize rental values to estimate wealth.) The NINEA is present in some instances (but not systematically). This database also includes owners' names and physical addresses.
- **États financiers (shareholders).** Databases contain large firms' financial statements, including information on shareholders and administrators of large companies. Shareholders hold shares and may receive dividends; administrators receive *attendance fees*. Dividends and attendance fees are declared at the firm level by the paying firm on separate tax declarations, with PIT withheld at rates of 10 percent and 16 percent, respectively.

6. Note that rents and mixed income are subject to withholding when the taxpayer is an incorporated firm.

FIGURE 6 - Income Concepts in the Data in 2020



Source: Administrative data.

This data does not exhaust all sources of income and wealth, but it does allow us to approach the consolidated individual total we would observe if the self-reported PIT were fully reported.

Merging these data sources allows us to **assist the tax authority in constructing a consolidated personal income tax base**.

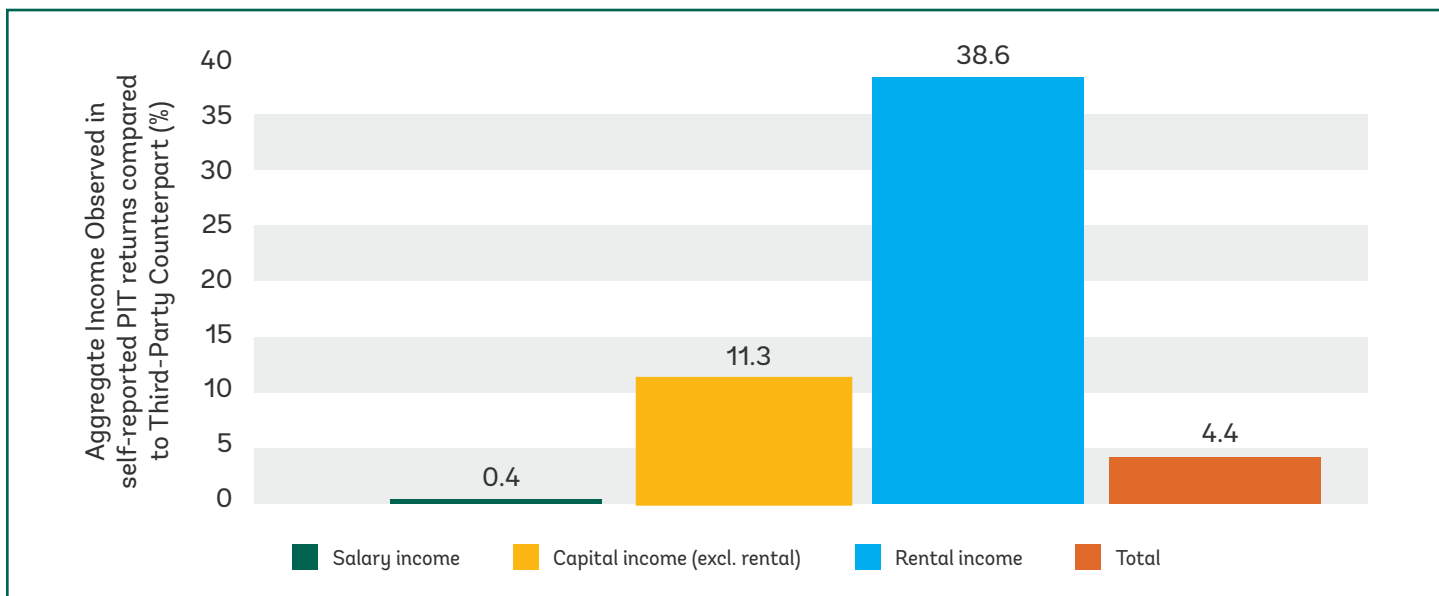
We use available identification variables to match the different data sources. Depending on the source, the identification variables are CNI, first name, surname, the company's NINEA, and/or quotient familial. We take steps to compensate for the **lack of reliable identification variables** by (i) improving data quality using external sources (the registry from the National

Agency of Statistics and Demography acts as a dictionary across the two main digital IDs used, CNI and NINEA), (ii) relaxing matching criteria (e.g., for spelling mistakes or inconsistent use of second names), and (iii) detecting errors.

The matches obtained allow us to **verify reported incomes at the individual level**. They must be considered carefully, however, as it is not always possible to guarantee their validity due to imperfect data quality.

Moreover, the verification data we use also suffers from quality limitations and could be outdated or contain inaccurate information. Thus, this process should be used as a **tool to assist in detecting discrepancies**.

FIGURE 7 - Comparing Aggregates: PIT Returns and Third Party Data, by Source



Source: Authors' computations based on income tax returns and administrative data.

BOX 2 - Digital IDs in Senegal: Current Practices and How to Improve Linkages

Senegal relies on two key digital IDs for tax-related purposes:

- **NINEA:** The Numéro d'Identification National des Entreprises et Associations is a unique taxpayer registration number assigned to both individuals and corporations. It is provided by the Agence Nationale de la Statistique et de la Démographie (ANSD, National Statistical Agency).
- **CNI:** The Carte Nationale d'Identité, the national ID number, is provided by the Ministry of the Interior. A CNI is required for ANSD to create a NINEA for a given taxpayer.

The challenge is that many taxpayers are known to the DGID, but they are not linked to any type of ID. This is the case for the majority of employees in the États 1024 data, the majority of property owners in the SIGUIL data, and the majority of shareholders and administrators. Furthermore, to encourage interoperability across administrations, the DGID does not directly generate NINEAs, but instead sends creation requests one by one to the ANSD using a web platform.

Data quality and merging issues could be mitigated on several dimensions:

- **Consistency in the use of digital IDs** (NINEA, CNI): Providing these IDs on every tax return and other administrative form and working toward associating an ID with each taxpayer already known by the DGID would improve the consistency of the reports and facilitate auditing.
- **Digitization:** Data is not always available in numerical format, which is essential for cross-checking information. Digitizing data is resource-consuming and must be done in a timely manner to meet legal prescription constraints. Generalizing the numerical format would be incomparably more efficient.
- **Pre-filing tax returns:** This could help systematize the use of digital IDs.



How Rich Are the Top Earners in the Consolidated Tax Data?

To answer this question, we compared the income distribution from the estimated consolidated personal income tax base to the population income distribution computed from the Harmonized Survey of Household Living Conditions (EHCVM Senegal 2018–2019) dataset.

EHCVM Senegal 2018–2019 is the most recent survey to estimate the distribution of total individual income in Senegal. Conducted in two waves between 2018 and 2019, it covers the employment, income, transfers, and consumption components of a nationally representative sample of 7,156 households. At the individual level, the sample size is 66,120.

Using data from this survey, we estimated the total annual income of individuals aged 15 or older (37,144 adults) by summing up wages, pension, net agricultural income (farming, breeding, fishing), rental income, income from movable and financial assets, transfers received, and other income. More precisely, these broad categories cover the following:

- **Wages** include primary salary, secondary salary, bonuses, and benefits and were calculated using section 04 of the survey questionnaire, which deals with employment at the individual level.
- **Pension** includes retirement, disability, compensation, widow's pensions, and alimony.
- **Rental income** includes dwelling houses.

- **Income from movable and financial assets** includes dividends from shares and interest on investments.
- **Net agricultural income** was estimated by computing revenues minus costs at the household level under sections 16 (Agriculture), 17 (Livestock), and 18 (Fishing). These household aggregates were then distributed equally among adults.
- **Other income** covers lottery winnings, inheritance, and sales of goods.
- **Transfers received** were also collected at the household level and, as with net agricultural income, equally split among adults.

Figure 8 compares the probability distribution of the log of total individual income from the survey (yellow shade) with that of the log of total consolidated individual income from our complete administrative data set (green shade). One can immediately observe that our administrative sample is significantly richer than the survey's nationally representative sample.

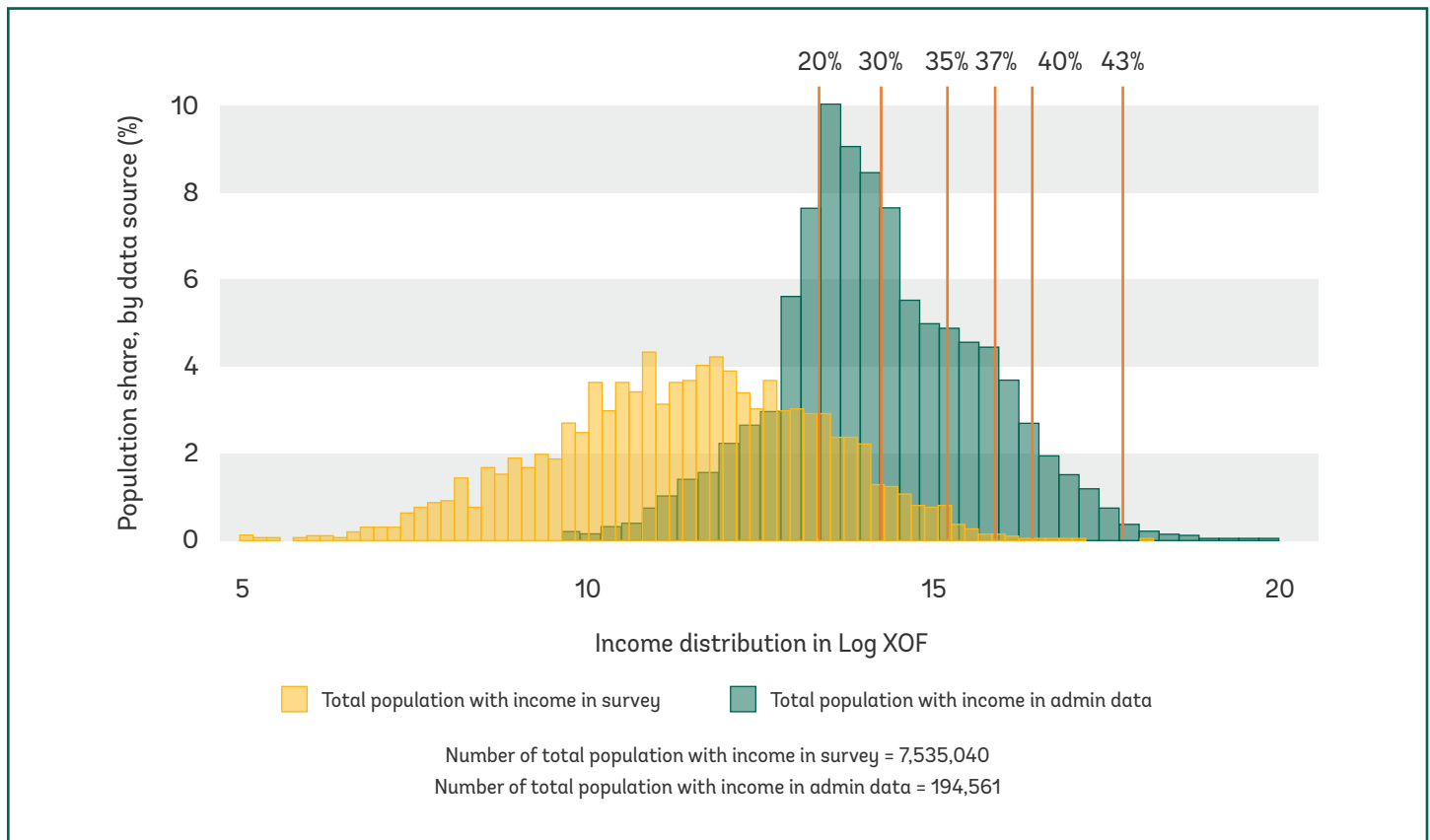
A closer analysis indeed shows that the median income at the national level is XOF 56,250 (approximately US\$91), but XOF 1,260,000 (approximately US\$2,037) in the administrative data. The survey shows only 405 individuals earning beyond the threshold for the 43 percent marginal tax rate and 6,028

beyond the 40 percent threshold, i.e., 0.005 percent and 0.08 percent of the adult population, with average income of a XOF 78,600,000 and XOF 25,000,000, respectively. Using the same threshold in the administrative data, we find 1,703 persons above the 43 percent MTR with an average income of XOF 103,000,000 and 14,255 individuals above the 40

percent MTR, earning XOF 33,300,000 on average. This comparison exercise shows that by focusing on the very top of the administrative distribution, the recommendations in the remainder of this study target an extremely rich segment of the population, well beyond the top 1 percent—a population so rich, in fact, that the survey can't capture it well.

> > >

FIGURE 8 - Comparison of Administrative and Survey Income



Source: Authors' computations based on administrative⁷ data and EHCVM Senegal 2018–2019 survey data.⁸

7. Consolidated personal income tax base: PAYE data, property tax data, self-reported PIT returns, shareholder's data; 194,561 taxpayers had a positive consolidated observable income in the administrative data.
 8. Based on extrapolation with survey weights, 7,535,040 Senegalese had a positive annual income at the national level.



High Net Worth Individuals (HNWIs)

Given the twin objectives of increasing tax revenue and improving the progressivity of the fiscal system, this project **focuses on taxpayers at the very top of the income and/or wealth distribution**. This optimizes the tax administration's limited resources, as recommended by Mc Laughlin and Buchanan: "That is not to say that HNWIs with wealth below the cut-off should be ignored, just that it is better initially to select a manageable group to build up experience and expertise" (2017).

Identifying very rich individuals is of primary relevance but there is **no consensus on an international definition of HNWI**. An absolute threshold would not correspond to the same relative income in every country, and thus it is not an appropriate standardized criteria. HNWI in a low-income country might correspond to a richer country's upper-middle class (Tanzi 2011). Therefore, HNWI selection criteria must be country-specific.

International experience with HNWIs

International practice varies in terms of the concepts and data used to define HNWIs. Some countries focus on wealth only (e.g., the UK and Australia), while others combine wealth with income (e.g., the US and South Africa). Other criteria used by tax administrations include property valuation and indirect indicators of wealth (such as for known public figures or consumption of durable goods). These criteria are often combined and include income and/or wealth thresholds, although there is no general rule (OECD 2009).

Specialized Taxpayer Offices

Given the complexity of identifying, monitoring, and interacting with HNWIs, countries often introduce dedicated units.

High-income countries, such as Australia, New Zealand, the UK, and the US, have implemented specialized task forces within their respective tax administrations (Van Vuuren 2016), and low- and middle-income countries are increasingly adopting this practice.

A recent example is Uganda: its HNWI office recently started with a few hundred individuals, selected as follows: "The officials generated a list of potential HNWIs, comprising directors of large companies under the Large Taxpayers Unit (LTU) and individuals whose wealth was publicly known. The list was scrutinized by top management in the Domestic Taxes Department, who made revisions on the basis of their own knowledge" (Kangave et al. 2018). Since its institution, Uganda's HNWI office has expanded the inclusion criteria to include a monthly income threshold of UGX 10,000,000 (US\$2,800).

Detecting high earners in the context of imperfect information: The case of Senegal

The ideal target population is individuals with true income or wealth in the top percentiles of Senegal's distribution. In particular, we want to select individuals within the top 0.1 percent of the national income distribution. Since we do not know these individuals' true income, we **proxy total income and wealth with observable income and wealth using available data**. As Senegal's tax administration further improves in acquiring and digitizing data, the proxy should improve as well, making it increasingly unlikely that the databases will fail to include any of the very rich.

We consider each data source individually and select the top of the distribution. We first chose as thresholds the top 0.1 percent of the largest administrative data sources on income and on wealth, that is, respectively, data on salaries and on

property values. We then adapted the thresholds according to the type of data (e.g., using lower thresholds for dividends, since they are less frequent). This allows us to generate what we refer to as the first list of HNWI.

Table 1 summarizes the cut-offs and the corresponding number of individuals selected from each database. For each database, it shows the number of observations and the top percentile the selected sample represents within them. This first list comprises 558 high net worth individuals at the very

top of the income or wealth distribution (i.e., 0.007 percent of the national adult population). Importantly, 80 percent of the individuals listed do not currently file PIT. The median annual income of this list is XOF 121 million (US\$200,000) and the median wealth is XOF 6.35 billion (US\$10 million).

Yet, since the data is imperfect and income is rarely available exhaustively, there may be targeting errors, and the list may miss some of the richest individuals.

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TABLE 1 - Criteria Used to Select HNWI

Database	Income threshold (million XOF)	Wealth threshold (billion XOF)	Individuals selected	Total number of individuals	Top percentile included
Withheld labor income	150		129	158,197	0.1
Property tax	50		194	30,767	0.7
		3.5	38	46,589	0.1
PIT	150		12	11,829	0.2
Administrators (board members)	50		11	557	2
Shareholders	50		53	382	2
		3.5	203	6,291	3.2
Property sales		1	7	2,565	1

Source: Administrative tax data, authors' calculations.

The first list considers taxpayers with extremely high income or wealth. To complement this first approach, the second approach expands the net to consider any taxpayers whose consolidated income places them in the top marginal tax bracket but who, when comparing self-reported income with third-party reported income, do not currently appear to report all revenue sources. This second list comprises 1,992 individuals (i.e., 0.02 percent of the national adult population), with a median yearly income of XOF 21.1 million (US\$34,000). It includes (i) rich individuals⁹ currently NOT filing the PIT but credibly identified as receiving income from multiple sources, and (ii) rich individuals currently filing the PIT but with discrepancies when compared to available information (PIT-filers not reporting or under-reporting a source of income identified by cross-checks).

9. Here *rich* means income eligible for the highest MTR, i.e., yearly income above XOF 13.5 million (approximately US\$22,000).



Revenue Gains from Consolidation and Tax Enforcement

Potential Tax Revenue Gains

Cross-validating tax statements and merging data from different sources generated more complete information on individuals' total income and wealth, enabling **estimates of the potential loss in personal income tax revenue from Senegal's high earners.**

We integrate income from third-party sources (salaries, rents from property, dividends) with the personal income tax declarations for individuals on the two HNWI lists. We then recalculate the PIT due on this consolidated tax base, as opposed to what was actually paid or withheld.

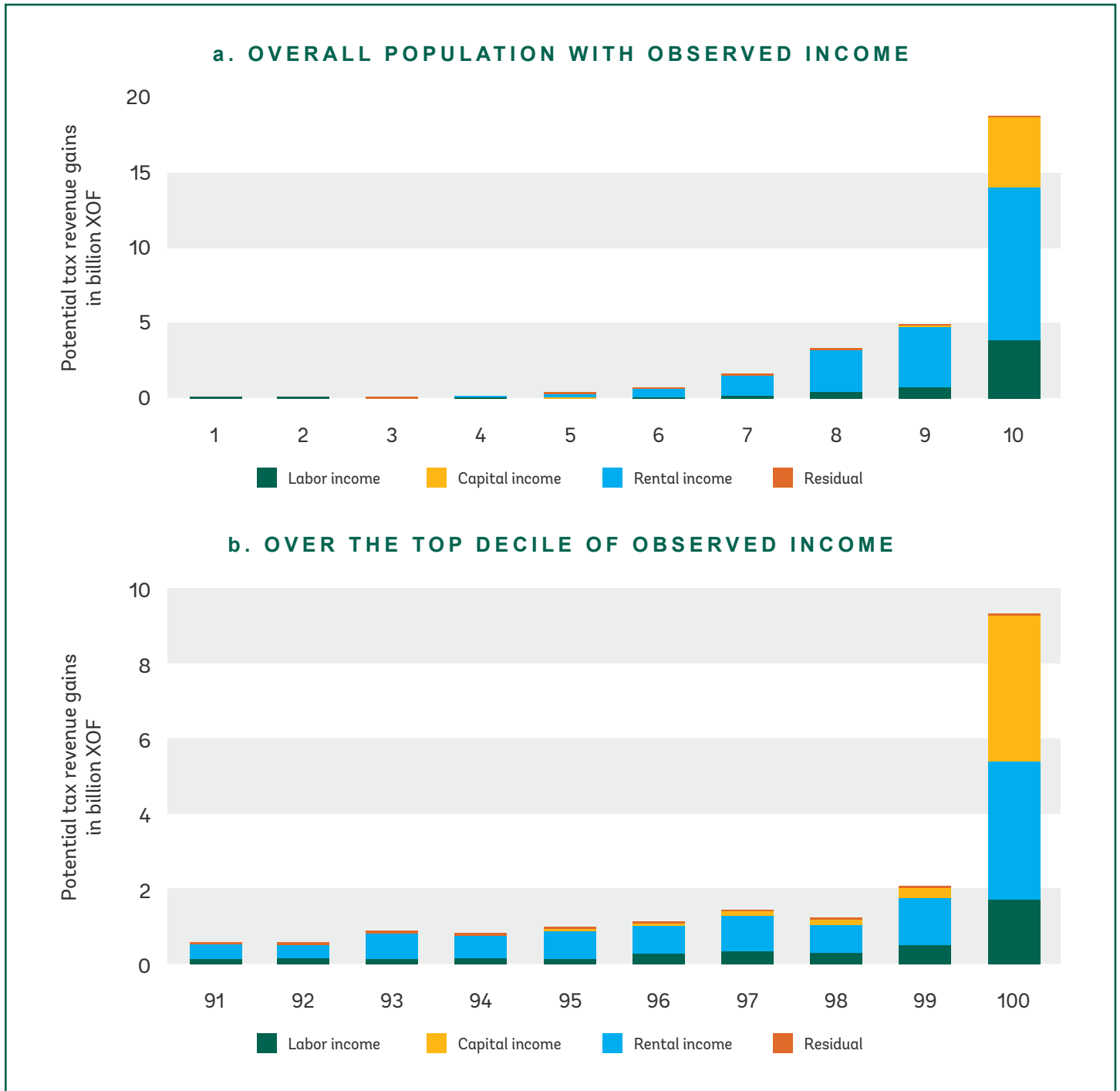
Potential tax revenue gains could occur via two channels: (i) declaration of previously nondeclared income, and (ii) changes in marginal tax rates due to consolidation of income sources.

Figure 9 shows the potential revenue gains as the difference between total tax paid, based on reported income and withheld taxes, and tax due, computed by applying progressive PIT schedule to consolidated and corrected taxable income with the corresponding observed income sources. Since it is difficult to observe withheld taxes from business leases, and

we suspect missing data on dividends from rich firms, this remains a conservative estimate. The main source of potential revenue gain is rental income, which is not withheld at the source and is rarely reported. Its integration into the tax base impacts both the level of taxable income and the applicable rates. Labor income and dividend income are subject to withholding, so we do not detect any additional income there. Additional revenue from the consolidation of capital income derives from the switch from proportional to progressive rates. In addition, the contribution of the labor component results from the withholding firm's previous misapplication (intentional or not) of the progressive tax scheme. The residual potential gain is the difference between the total tax paid and the tax due that is not explained by the addition of a specific income source but by the overall integration of the tax base given the progressivity of the tax schedule.

Figure 9.a shows the revenue gains by decile of the observed income distribution in administrative data. Based on Figure 8, we know that administrative data already consists of the very top incomes of the total population. We thus expect our sample to be even more concentrated at the top than is indicated by the deciles of observed income.

FIGURE 9 - Total Contribution to Additional Collectible Revenue, by Source of Income



Source: Authors' computations based on income tax returns and administrative data.

We find that, for 2020, **had all income sources been integrated, the tax administration would have collected an additional XOF 30 billion (\$48 millions), i.e., about 1 percent of total tax revenue and 8.5 percent of PIT revenue.** Most of the gain comes from integrating property income (for which only business leases face withholding), followed by higher rates on labor and then by other capital income.

Sixty-three percent of the tax revenue gains come from the top decile of our administrative sample. In Figure 9.b, we break down the first decile into each of the top ten percentiles and show the respective tax gains. The **HNWI in our two lists (2,550 individuals, or the top 1 percent of the sample) contribute 40 percent of the total additional collectible revenue (XOF 12 billion).**

Given the substantial tax revenue potential identified, what are some steps that Senegal's tax administration could take to realize it?

Strengthening income taxation

One possible next step is to increase enforcement activities to increase PIT compliance and collect tax revenues. There is political will within the DGID to carry out a pilot enforcement intervention to increase HNWI's tax compliance. The DGID is considering setting up a dedicated team to deal with a reasonable number of high net worth individuals (as in the similar effort in Uganda described by Kangave et al. (2018)). Local fiscal centers could help identify and contact the selected HNWI's by supplying their digital IDs, addresses, and phone numbers. The DGID is considering how best to design the

program to fit the Senegalese legal framework, and it aims to fine-tune the modalities and content of the pilot enforcement intervention in 2023.

The pilot intervention could help answer the following questions:

- Can increased enforcement activities improve compliance with the PIT at the top of the income distribution?
- What constraints does the administration face in monitoring this crucial segment of the population?
- How responsive to these interventions will rich taxpayers' reported income be over the short and medium term?

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BOX 3 - International Standard for Enforcement Activities: Deterrence Letters

The literature shows that **audits and deterrence letters both raise PIT compliance**. Interventions often focus on firms or property taxes, however, and letters are rarely followed by actual audits. Less is known about the effect of enforcement activities targeted at the top of the distribution, even more so in low-income countries.

Auditing risk significantly increases the reported income of low- and middle-income taxpayers (with a larger effect for those with a high opportunity for tax evasion), but it significantly decreases the reported income of high-income taxpayers (Slemrod, Blumenthal, and Christian 2001). This result was confirmed by Coleman (2007), but the effect of the audit on high-income taxpayers remains mixed. Guyton et al. (2021) find that random audits fail to detect the most sophisticated evasion strategies. Indeed, evasion detection is drastically reduced in the top 0.01 percent of the income distribution. The same observation was made by Chan et al. (2021) in Indonesia following the implementation of the Jakarta High Income Unit. Introduction of the unit significantly increased reported income, but the effect was short-lived, suggesting that HNWI taxpayers were able to reduce their tax burden through new deductions.

Taxpayers are also less likely to avoid paying taxes when the increase in audit probability is uncertain. Santoro (2021), linking administrative data with survey data on 1,009 individuals, showed a significant positive impact on income reporting in the year following a deterrence letter threatening an audit (a result also found by Kleven et al. (2011), with the effect being more visible when the audit threat is 100 percent rather than 50 percent). More generally, treatments involving social norms, moral obligations, and public benefit are the least effective (Blumenthal, Christian, and Slemrod 2001; Mascagni, Nell, and Monkam 2017); on average, the effect of such interventions on tax compliance is not significant. Only deterrence letters (informing taxpayers about the probability of an audit and potential penalties for noncompliance) are shown to increase tax compliance, even though the magnitude of the increase is moderate. In addition, incentives communicated through face-to-face visits produce better results in terms of tax compliance than does pressure exerted through letters. Finally, nudge interventions (behavioral interventions that aim to increase tax compliance without changing taxpayers' underlying economic incentives) are more likely to affect groups with greater numbers of noncompliant taxpayers (Antinyan and Asatryan 2019).



Recommendations

Based on insights generated by the data analysis above and our discussions with the DGID regarding strategies for a pilot and other interventions, we offer the following short- and medium-term policy recommendations.

Short-term recommendations

Clarify the policy objective given the current legal framework. The tax code requires all income earners to submit annual consolidated income tax returns, but the tax administration's limited capacity does not allow it to pursue declarations from taxpayers whose income is subject to withholding. If these taxpayers fail to file income tax returns, they may not be chargeable with tax evasion, despite the harm to tax progressivity. For the tax administration to obtain PIT returns from all top income earners will require a clearer legal framework and sharing information with taxpayers about reporting requirements, e.g., through *communication and information* campaigns. The administration could also use a *litigation audit* intervention targeting HNWIs. The following recommendations consider both dimensions.

Communication. We recommend a widely targeted pedagogical intervention addressing taxpayers at the top of the income and wealth distribution. Relevant topics include (i) an exhaustive list of all income sources individuals are legally responsible to report; (ii) information on the progressive tax schedule, especially the 2022 change in the top marginal tax rate; (iii) explanations of how withholding works when combined with payments related to PIT returns; and (iv) contact details for tax officers available to provide information on e-filing and to assist in filing PIT returns.

Given that top earners and political elites may overlap, such enforcement activities can be challenging and sensitive. Communication should emphasize that the approach is data- and evidenced-based, not a targeted strategy. Knowledge about fiscal responsibility is key to good compliance habits, but it needs to be complemented (via audits) with accountability for nonconformity with fiscal rules.

Enforcement. Deterrence letters to increase tax compliance are more likely to succeed if they focus on HNWIs. Test two types of enforcement messages: (i) in the months preceding the annual filing, encourage non-filing HNWIs to submit PIT returns; and (ii) depending on the litigation procedure chosen, inform PIT filers of income sources the administration has identified as previously *not* withheld and currently unreported. Both messages should indicate the penalties for noncompliance and the contact details of a help desk or available tax officer. We suggest starting with a small-scale pilot to fine-tune the procedure. Key logistical aspects will need to be clarified, including mode of communication, how to assess the reliability of physical addresses, and whether delivery of the message requires face-to-face discussion with an auditor. One possibility for communicating with HNWIs is through the firms they are linked to (e.g., if they are shareholders or employees).

Data quality and data collection procedures. To monitor the communication and enforcement interventions, evaluate their effects, and design the best strategy going forward, the administration must set up a plan to collect relevant data on the affected taxpayers. Currently, information on taxpayers visiting or contacting tax offices is not systematically digitized

or shared centrally to populate taxpayer registries. Each tax office uses its own practices to follow up with taxpayers, register their contact details, and complete audits. The pilot intervention could evaluate a harmonized procedure.

Medium-term recommendations

Establish a dedicated tax unit for HNWI. Following the pilot, if the administration wishes to go further, setting up a dedicated unit could be a next step. Currently, responsibility for increasing compliance among HNWIs is shared across several departments: the Directorate for Information and Audits (whose head is our closest collaborator on this ongoing project); the Large Taxpayer Unit (many firms reporting the data used to detect HNWIs are large taxpayers); and local tax offices in each geographical district (in theory, the direct interlocutors with individual taxpayers). Because increasing compliance among HNWIs requires specific resources, skills, and analytical capacity, it makes sense to centralize these efforts and responsibilities in a single unit working in collaboration with all relevant directorates.

Tax code changes. Based on results from the project and the pilot, the administration could take a stronger stance on all income earners' legal obligation to submit a PIT return. With the political will to move in this direction, the DGID could request that Parliament clarify the tax code. To

be effective, the changes must acknowledge the dilemma faced by the tax administration. Although it seeks change by gaining comprehensive information on income earners and guaranteeing that all reported income is taxed according to the progressive tax schedule, resource constraints limit the administration's ability to follow up on and exploit all the data and information on HNWI taxpayers currently submitted to it. This might be resolved by accompanying the reinforced obligation for all income earners to submit a PIT return with increased resources for the administration to pursue compliance from HNWI taxpayers.

Continued data improvement. Audits and verifications depend on reliable data and hard evidence. Thus, consistent use of identification numbers and harmonizing the collection of taxpayers' contact details should be priorities for the DGID. We are currently engaged in collaborative efforts to integrate additional data sources that could help improve detection and monitoring of HNWIs. This includes: (i) information from data leaks on offshore wealth; (ii) digitization of new data on shareholders and dividends; (iii) third-party data from contracts for hard-to-tax segments (e.g., sales from suppliers and to clients for self-employed); (iv) use of a newly available digital tool to modernize property valuation rolls and rent datasets through census operations; and (v) updated strategies for generating and managing digital identifiers.



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