



GOVERNANCE

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EQUITABLE GROWTH, FINANCE & INSTITUTIONS INSIGHT

# Public Sector Employment and Compensation: An Assessment Framework



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## Acknowledgments

This note was produced by a team consisting of Zahid Hasnain (lead author), Faisal Baig, Ravi Somani, Wouter van Acker, Anca Butnaru, Robert Palacios, and Daniel Ortega. The team is grateful to comments and guidance from Jim Brumby, Tony Verheijen, Shiho Nagaki, Moritz Piatti, and Srinivas Gurazada. It was prepared under the overall guidance of Tracey Lane and Ed Olowo-Okere.

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## Abbreviations

CPIA	Country Policy and Institutional Assessment
GDP	Gross Domestic Product
IMF	International Monetary Fund
OECD	Organisation for Economic Co-operation and Development
PEFA	Public Expenditure and Financial Accountability
PISA	Programme for International Student Assessment
WWBI	Worldwide Bureaucracy Indicators



# Introduction

**Effective management of public sector employment and compensation is a vital activity of governments, with broad implications for fiscal sustainability, public sector productivity, and the competitiveness of the overall labor market.** Governments' expenditures on employee compensation represent approximately 30 percent of their expenditures, and wage bill management therefore has obvious fiscal and expenditure efficiency implications. Public sector wages affect the selection, retention, and motivation of public sector workers, which in turn, impacts productivity, or the amount and quality of government outputs such as infrastructure, regulations, and public services produced per public sector worker. The public sector is a large employer, accounting for 37 percent of global formal employment, and the wage bill represents livelihoods as well as budgetary costs, and changes in government wages are likely to produce significant effects on the whole labor market and the overall economy, including potentially crowding out private sector employment. In many low- and middle-income countries, especially those experiencing fragility, public sector employment is the core ingredient of the political settlement and wage bill reforms have immediate and often severe implications for political stability, peace, and security.

**The objective of employment and wage policies should be to maximize public sector productivity in a fiscally sustainable manner and without distorting the overall labor market.** This normative goal does not deny that governments may have other important social and political objectives, such as ensuring adequate representation of important constituencies and marginalized groups, and providing formal jobs where the private sector is underdeveloped. Nevertheless, these policies require governments to manage difficult technical and political tradeoffs and all governments need to consider their impacts on service delivery, fiscal sustainability, and the labor market. Fiscal crises have often been an impetus for reforms, necessitating short-term fixes like across-the-board wage freezes or cuts, and downsizing through voluntary or involuntary schemes to cut expenditures and meet fiscal targets. However,



many of these short-term measures have adverse impacts on long-term growth and welfare, and political viability, and often create distortions and perverse incentives.<sup>1</sup> For example, freezing basic wages has often resulted in a mushrooming of less transparent allowances and salary supplements that reduce wage bill transparency, harm pay equity, and hurt productivity. Public sector employment and wage practices, therefore, need to give equal primacy to their effects on recruitment, retention, and motivation of workers and ultimately productivity even during a fiscal crisis.

**This paper aims to provide a framework for conducting public sector employment and compensation assessments that can help develop evidence-based reforms.** Such a framework is necessary given growing debt distress and the need for greater expenditure efficiency in many of the World Bank's client countries, and also due to the urgency for addressing global challenges like pandemics, climate change, building human capital, and reducing inequality, all of which require a strong role for the public sector. Inspired by the success of the Public Expenditure and Financial Accountability (PEFA) framework to diagnose the state of public financial management policies and outcomes, the objective of this paper is to provide a consistent and robust approach for conducting public sector employment and compensation assessments. Like PEFA, this approach is anchored in a conceptual framework, a set of guidance questions, and quantitative indicators on the wage bill, employment, and wages that provide the core evidence base of such assessments and which can be tracked over time. Unlike PEFA, however, the goal is not to develop an assessment score of the various aspects of wage bill management, or a detailed toolkit, but rather to provide more general evidence-based guidance that can be adapted to country contexts and can help to improve the quality of Public Expenditure Reviews, Human Capital Expenditure and Institutional Reviews, and overall policy advice.

**One challenge for the diagnostic is that most governments do not have a centralized or unified system for managing its workforce.** While analytically the concepts of “public sector” or “general government” (as defined in Annex 1) are useful, the actual responsibilities for wage bill management

are usually divided across jurisdictions, occupational groups, and organizations. This divide is obvious in federal systems where public sector personnel are employed and managed separately by central and subnational governments. Even in unitary systems, there may be separate legal regimes for different categories of public servants, and often delegated or fragmented management responsibilities across administrative units. Depending on local context the assessment, therefore, will need to be applied to a sufficient number of administrative units to provide a reasonably complete picture of public sector employment and compensation practices and their impacts.

**Another challenge is where to demarcate the boundary between wage bill management and organizational and human resource management.** Most of the impacts of employment and compensation policies are mediated by personnel management practices. For example, whether public sector employees are productive depends on merit-based recruitment and performance management as well as appropriate staff numbers and competitive pay. This assessment framework recognizes these overlaps but, for pragmatism and to keep the scope manageable, strictly limits the framework to employment and compensation practices. A diagnostic framework for personnel management is a potential area for future work. Similarly, the paper does not cover the important, but complex, issue of public sector pensions as that too would greatly expand its scope, though it does discuss the implications of pensions on public-private wage gaps, and on fiscal sustainability.

**The paper is organized as follows:** The next section presents the assessment framework. Section 3 then goes through each of the dimensions presenting cross-national stylized facts to highlight important elements that should be assessed, and proposes a set of guidance questions for the assessment and key indicators as the evidence base for the assessment. Section 4 discusses how to assess and measure the impact of pay and employment on the three outcomes of fiscal sustainability, public sector productivity, and labor allocation between public and private sectors. The final section concludes with some suggestions on framing recommendations.

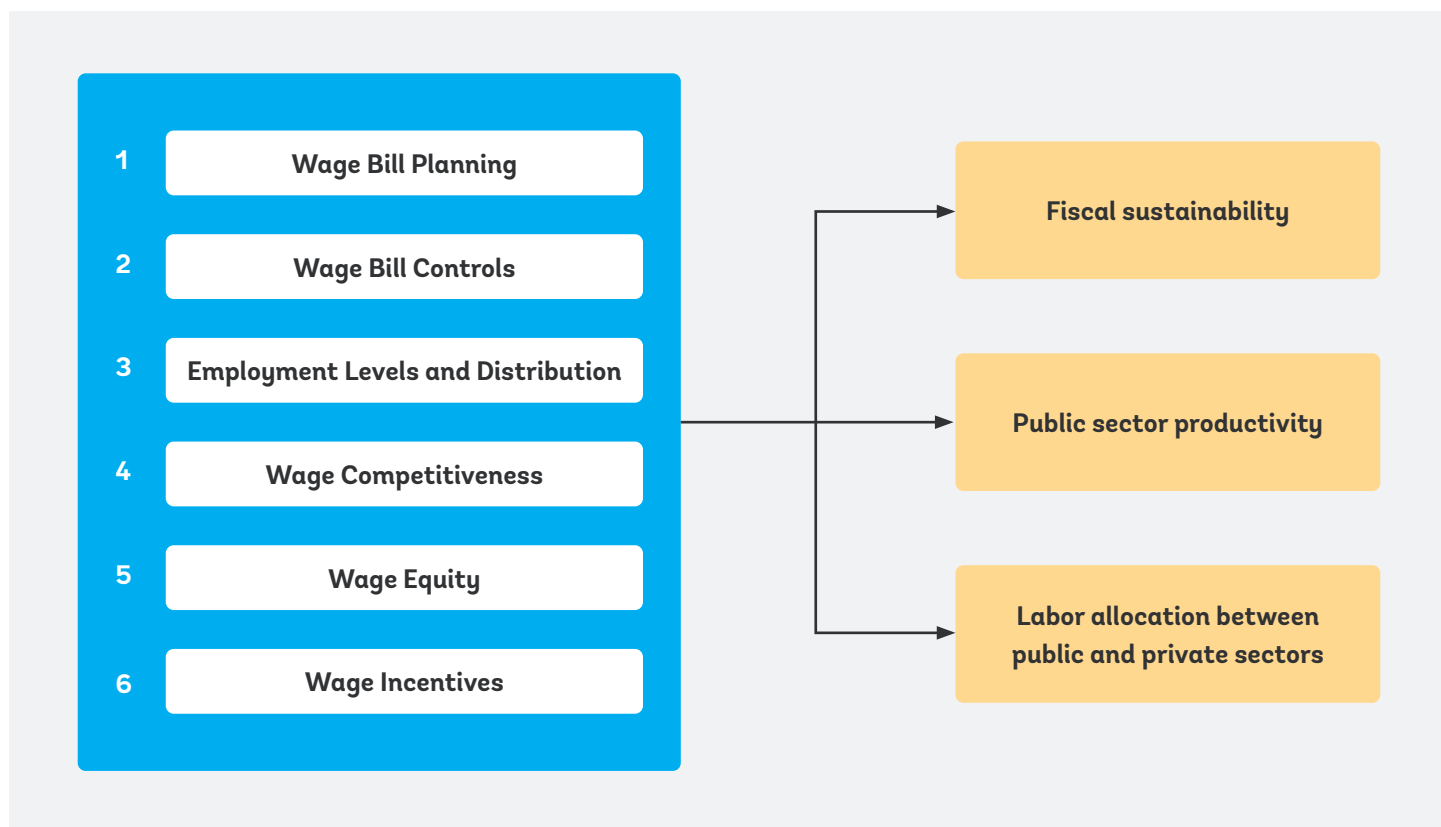
1. IMF (2016).



## The Assessment Framework

The proposed diagnostic framework consists of two parts (Figure 1). The first part assesses six dimensions of public sector employment and compensation practices:

- The robustness of the **wage bill planning** process such that annual planning and budgeting is anchored in a fiscal sustainability framework, is informed by comprehensive and accurate data, and is transparent.
- The strength of **wage bill controls** to ensure that the budget is executed as planned and that only legally employed staff on the payroll are paid the wages that are due to them.
- The **employment levels and distribution** of the public sector workforce so that there is neither over- or under-staffing, and that the right staff are employed in the right location and in the right positions.
- The **wage competitiveness** of the public sector to ensure that qualified staff are attracted to public sector employment without creating skills shortages in the private sector.
- **Wage equity** so that staff in similar jobs with similar skills and similar performance are paid equivalently.
- **Wage incentives** in the form of appropriate performance-based career growth and performance bonuses aimed at maximizing worker productivity.

**FIGURE 1 - Assessment Framework for Public Sector Employment and Compensation**

Source: Authors.

**These dimensions cover both the institutional and behavioral aspects of employment and compensation practices.** The first two dimensions explore the “macro” institutional aspects of the strength of public financial management and human resource management systems for wage bill expenditure planning and execution; the next four are more “micro” elements likely to influence the behaviors and motivations of individual public employees.

**The second part of the assessment explores the impact of these practices on:**

- **Fiscal sustainability:** Whether the wage bill is putting a stress on public finances, resulting in either rising fiscal deficits or reductions in other important government expenditures, such as capital expenditures.
- **Public sector productivity:** Whether employment and compensation practices are capacitating and incentivizing the public sector workforce to effectively deliver core government outputs such as infrastructure, services, and regulations.

- **Labor allocation between the public and private sectors:** Whether the public sector is crowding out the labor market, resulting in skills shortages in the private sector and impeding private-sector job growth.

**Given that employment and compensation diagnostics should be “problem-driven,” the linkages between these practices and outcomes are necessary for identifying priority reforms.** While the main outcomes of interest will vary depending on country context and greater emphasis can be given to one outcome over another in an assessment, recognizing the importance of all three is necessary for balancing tradeoffs and informing policies. Some linkages between practices and outcomes are theoretically reasonably clear—for example, weak wage bill controls and presence of large numbers of ghost workers hurt fiscal sustainability and productivity. But others, such as whether competitive wages improve service delivery, are open empirical questions.



**Implicit in the framework are both complementarities and tradeoffs across the dimensions.** These are most apparent across wage competitiveness, wage equity, and wage incentives. In many countries, personnel of some agencies are paid higher than equivalently skilled and experienced personnel of other agencies to compete for high demand skills, which compromises wage equity. Similarly, performance bonuses and other incentive payments can also be perceived as inequitable. Assessments will need to recognize these tradeoffs and make judgements about whether they are appropriate in the local context.

**Rigorous evidence needs to underpin the assessment, and this report will highlight cross-national stylized facts drawing on comparable data sources.** Any global benchmarking needs to be used with caution as definitions of the wage bill, public sector employment, and compensation can vary from country to country. While it is common to do cross-national comparisons of the wage bill – either as a share of GDP or government expenditures – based on government fiscal data, differences in which employees are included or excluded from the payroll, and differences in the elements of pay that are accounted for in employee compensation makes these comparisons inaccurate. There is also, as will be detailed in this report, no “right size” of the wage bill. Countries have different approaches on what proportion of services should be publicly delivered with public sector personnel as opposed to publicly financed but outsourced to private sector providers for delivery. Other country characteristics, such as size and whether it is a unitary or federal state, can also impact the wage bill and public employment, particularly for service delivery personnel.

The [Worldwide Bureaucracy Indicators \(WWBI\)](#), used here in cross-national comparisons, while not addressing these differences in the scope of the public sector, does minimize the risk of inconsistent definitions and measurement errors. The WWBI are derived from harmonized household surveys using a common taxonomy which enables cross-country comparisons based on similar sources and common definitions of employment and wages. Annex 1 provides more details on some of the key definitions and data sources used in this paper.

**This report recognizes that these data requirements are challenging, particularly in low-income countries.** The framework provided in this report utilizes data already existing within the public sector—labor force survey data collected by national statistical agencies and administrative data collected by ministries of finance and public administration. However, in many developing country contexts, statistical agencies may lack the capacity to conduct the large, nationally representative surveys needed, and administrative systems may be too weak to allow for this micro-founded approach to wage bill diagnostics. However, there are also risks with more qualitative, or expert assessment approaches as these can be subjective and discretionary. Cognizant of these two facts, the report also provides an alternative, limited assessment instrument in Annex 2 that utilizes the same conceptual framework and guidance questions. This relies on a more limited minimum set of quantitative indicators derived from administrative data that most governments do collect as part of their daily operations.



# 3

## Assessing Wage Bill Dimensions

### 3.1 Wage Bill Planning

**The wage bill represents a large and less flexible component of government expenditures with significant future liabilities.** Globally, and noting the difficulties with cross-country comparisons, the wage bill represents approximately 30 percent of government expenditures, with significant variation around this average. In many low and middle-income countries, the wage bill can take up almost half of all government expenditures, and is an even larger share of expenditures for labor-intensive services like teaching and healthcare. For example, teacher salaries represent more than 80 percent of public education expenditures in developing countries.<sup>2</sup> The wage bill, as a share of GDP, is larger in higher income countries, reflecting the bigger scope of governments as incomes rise; but is higher as a share of expenditures in lower income countries (Figure 2). The wage bill is also “sticky” as it is politically difficult to remove public sector workers or to cut their wages. For example, in higher income countries wage bill increases during economic upturns are not matched by similar reductions during downturns.<sup>3</sup> Evaluations of public sector voluntary retirement schemes and downsizing programs reveal that these are generally not sustainable.<sup>4</sup> These wage bill numbers underestimate the full fiscal costs of public sector workers given the generous pensions benefits that they enjoy. In Brazil, for example, the wage bill is 13 percent of GDP, and public sector pensions expenditures are another 4 percent of GDP.<sup>5</sup>

2. UNESCO (2017).

3. IMF (2016).

4. IEG (2008).

5. World Bank (2017).

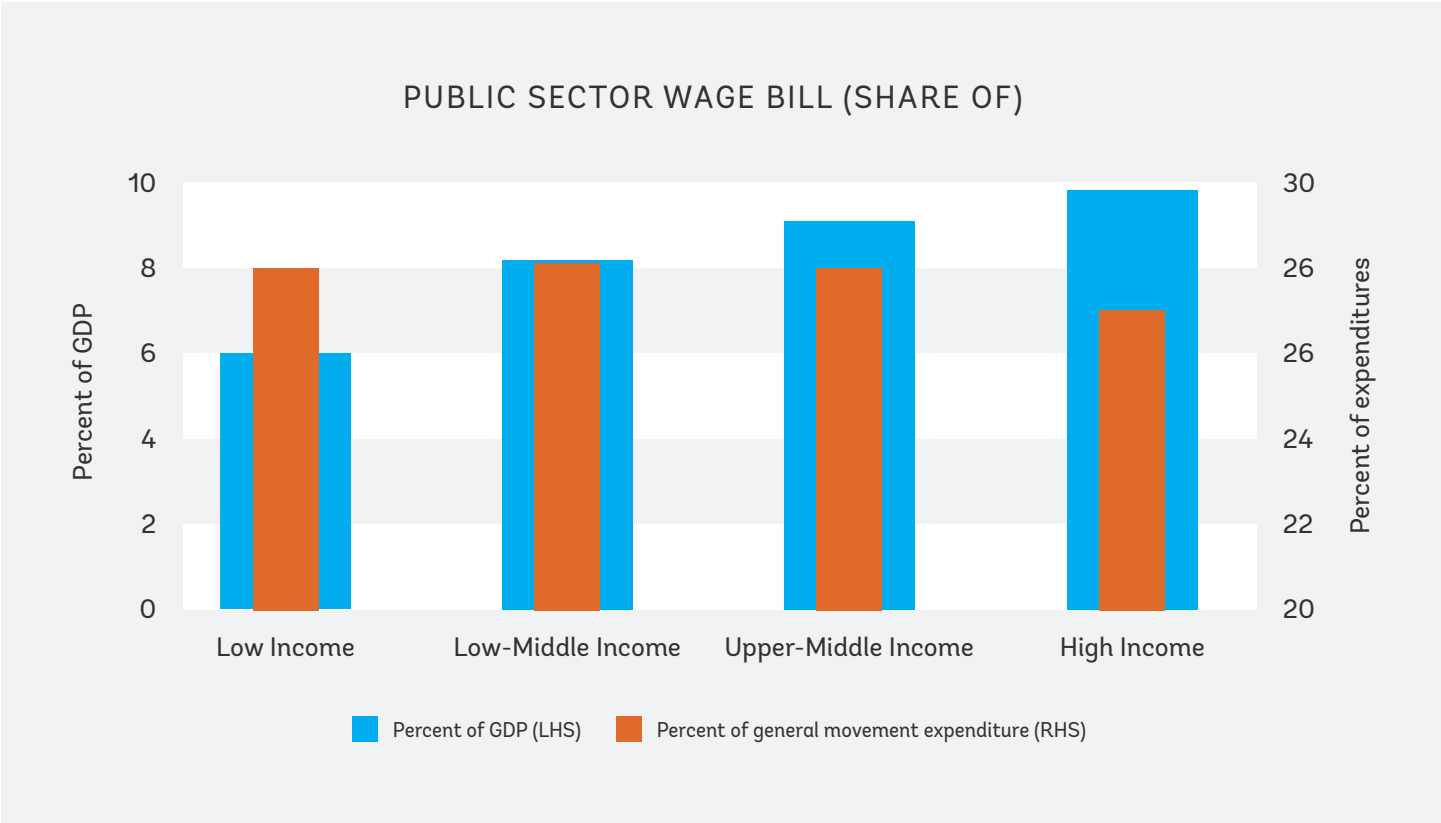
**Estimating the size of the wage bill is of paramount importance, but is often difficult due to non-transparent budgeting and accounting, weak data systems, and informalities in employment and compensation.** The wage bill should at a minimum cover all permanent and contract workers employed by both central and subnational governments, and include all elements of compensation (basic wages and allowances) and benefits and payments that de facto serve as compensation (such as honoraria and per diems). In many low- and middle-income countries, the official wage bill in budgetary reports underestimates the actual wage bill as it does not include all workers or all these elements of compensation. For example, the government payroll may exclude employees paid from extra-budgetary funds, or contract workers that are effectively full-time employees and perform similar functions to permanent staff. Budget documents may also classify de facto salary payments, like honoraria or per diems, under goods and services. In Indonesia, for example, honoraria for attending meetings and workshops, which were

paid through cash outside of the payroll, were estimated to be almost a third of the overall wage bill.<sup>6</sup> Honoraria and per diems similarly serve as a large component of compensation in Cameroon, Zambia, and Zimbabwe.<sup>7</sup>

**Estimating the true wage bill also necessitates an assessment of the quality of payroll and human resources data systems.** Ideally, government personnel should be managed and paid through either a centralized and integrated payroll and human resource management system or through a process of consolidation and reconciliation of the different payrolls covering different jurisdictions and the various categories of personnel. Often, however, these systems cover only a subset of employees, and are inaccurate, as human resource data is not linked to the payroll which weakens incentives for agencies to regularly update personnel records given that there are no costs in terms of missed salaries associated with inaccurate data.

> > >

**FIGURE 2 - Variations in the Wage Bill by Country Income**



Source: IMF Government Compensation and Employment Dataset.

6. World Bank (2013).  
7. World Bank staff assessments in Country Policy and Institutional Assessment (CPIA) write-ups.



**Wage bill decisions should ideally be part of a medium-term budget framework to ensure fiscal sustainability.** An International Monetary Fund (IMF) review of practices in 42 countries revealed that half of the countries did not integrate wage bill decisions in their budget planning procedures, and that most low- and middle-income countries did not undertake medium-term forecasting of the wage bill as part of their budgetary planning. Many countries do have fiscal rules with wage bill expenditure ceilings, though it's unclear whether these rules constrain decisions. For example, in Brazil, the Fiscal Responsibility Act stipulates ceilings on personnel expenditures as a share of revenue, with states that surpass this limit not having access to federal guarantees for international financing. However, steady wage bill growth over the past decade has meant that over half of the states have exceeded this threshold.<sup>8</sup> Many countries also have automatic indexation of wages with inflation which can result in wage bill growth through wage-price spirals and reduce governments' discretion in adjusting policies to respond to crises.<sup>9</sup>

**Understanding the institutional mechanisms for setting public sector wages is an essential part of the wage bill planning process.** Pay setting regimes refers to the laws, regulations, and norms that govern the structure of public sector wages, and the processes by which these are set. At a minimum, a review of the pay setting regime should analyze:

- The predominant regime of wage determination, whether it is a unilateral decision by the government or through collective bargaining between government and trade unions.
- If this is a unilateral decision by government, then a review of the salary structure, in particular the pay and grading system. The scope of the review will vary depending on the degree of centralization versus decentralization in pay determination—these range from completely centralized systems where pay for all federal public sector employees is set in a unified pay scale, as for example in Germany, India, and the Philippines, to completely decentralized systems where individual agencies are free to set their own pay scales within a salary envelope, as in Sweden. One important element is the extent to which there are different laws and regulations for different categories of public sector employees.

- In federal systems, whether the inter-governmental fiscal transfer system can create perverse incentives for overstaffing by local governments and challenges to comprehensive planning resulting from the shared personnel management responsibilities between central and subnational governments.
- If the pay regime is characterized by collective bargaining, then the union density, or percentage of public sector workers that are unionized, and whether there is a single comprehensive collective agreement for all public sector employees or several, decentralized negotiations can impact wage bill planning. Decentralized negotiations can be organizational (with separate agreements per agency and ministry), occupational (with separate agreements per job group), geographical (with separate agreements for central, regional and local governments), or a combination of these.

**In some low income and fragile and conflict affected countries donors create parallel civil services and service delivery arrangements that compromise integrated wage bill planning.** While these arrangements are motivated by the understandable need to quickly scale up capacity and help deliver donor-funded programs, they risk compromising nascent planning processes and longer-term sustainability, especially when the payroll for these parallel arrangements does not flow through the budget. In Afghanistan for example, thousands of donor-funded—both on and off-budget—contracted staff under the National Technical Assistance program undertake core policy and administrative functions and enjoy significantly higher salaries than civil servants.<sup>10</sup> Such programs also create wage bill growth pressures when these contractors need to be absorbed by the public administration once donor funding ends.

**Hiring decisions should ideally be informed by strategic staffing plans that assess needs but are often driven by political considerations.** There should be a clear line of sight between an organization's medium-term strategy, staffing needs, and available resources yet political cycles in hiring, or ad hoc changes in policy, are very common. For example, studies reveal that even in European Union member countries, in which personnel decisions are presumably more insulated from harmful political considerations, there are political cycles

8. World Bank (2020).

9. Holm-Hadulla et al. (2010).

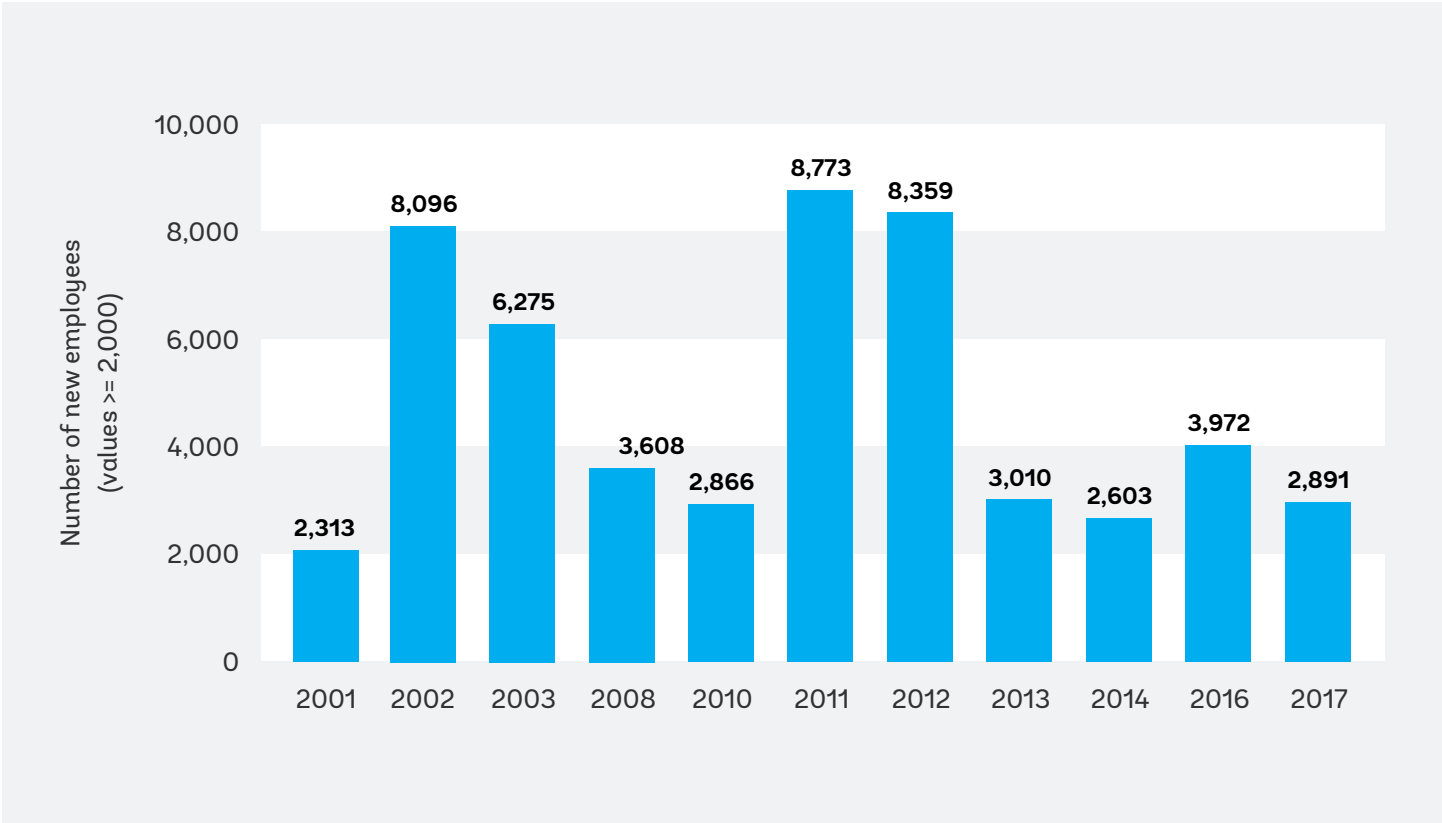
10. World Bank staff assessments in CPIA write-ups.

in hiring with increases in public sector employment around election years.<sup>11</sup> Such a political cycle represents decisions that can occur despite the robustness of fiscal planning and generally data-informed policymaking. Wage bill assessments can analyze employment trends from administrative data to highlight these inefficiencies. Volatility in hiring is particularly disruptive to sound fiscal management but is common, as illustrated in Figure 3 in a subnational government in Brazil.

**One approach that can increase transparency and accountability around these policy decisions is the public disclosure of wage bill information.** Some countries produce annual reports on public sector employment and wages to disclose progress on various reforms and for informing future policy developments, and involve academics, think tanks, and institutions like fiscal councils, for fact-checking and to lend credibility to their analysis.<sup>12</sup> Involving academia and think tanks can create more evidence-based policies, build a culture of rigorous evaluation, and help insulate employment and compensation from detrimental politicization.

> > >

**FIGURE 3 - Volatility in Annual Recruitments, an Example from Brazil**



Source: WB staff calculations based on administrative data.

11. See Martins (2010) for evidence on Portugal; and Dahlberg and Mork (2008) for evidence on Sweden and Finland.  
12. Examples include the Australian Public Service Remuneration Report and the UK: Annual Report on Senior Salaries.

## GUIDANCE QUESTIONS FOR THE ASSESSMENT

1. What are the main stylized facts about the wage bill: its actual size, evolution, and decomposition into employment and wages?
2. Is wage bill management anchored in comprehensive, accurate, and timely data?
  - a. Does the data cover all government employees paid from the budget and from extra-budgetary funds?
  - b. Is the data derived from integrated payroll and human resource systems that are updated every pay cycle?
  - c. Are budget classifications transparent so that all payroll expenditures are accurately recorded?
3. Is wage bill planning integrated in a broader medium-term fiscal framework? Are forward budget estimates derived from models of future wage bill commitments?
4. How does the institutional regime for salary setting impact wage bill planning? Are there particular challenges for subnational wage bill planning due to mismatches in staffing decisions and funding between central and subnational governments?
5. Are staffing increases informed by needs and medium-term strategic planning, or primarily by short-term political considerations?
6. Is there any public debate or public disclosure around wage bill policies?

## KEY INDICATORS

Indicator	Description	Data Sources
Wage bill as share of GDP, expenditures, and revenues, ideally over the past 10 years	Actual wage bill estimates that include all government workers that are paid from the payroll and from extra-budgetary funds; and all elements of de facto compensation such as basic wages, allowances, honoraria, and per diems.	IMF Government employment and compensation dataset; Boost; administrative data
Wage bill as a share of domestic revenues, that is, excluding foreign grants	An indicator of the how sensitive the fiscal impact of the wage bill is to external aid flows, especially in low-income countries.	Administrative data
Wage bill decomposed by administrative and industry classification	Disaggregates the wage bill by the main organizations – ministries and agencies – and the main occupational groups, including public administration, education, health, and security that contribute to the wage bill.	Administrative data
Annual recruitment patterns over time	Provides an indication of whether annual recruitment follows strategic needs or is ad hoc and driven by political considerations.	Administrative data



## 3.2 Wage Bill Controls

**A key question for the effectiveness of wage bill controls is whether wage bill ceilings are binding for line ministries and agencies.** The sanctity of these ceilings depends on whether they are based on authorized positions or anticipated personnel numbers; whether they are set by economic classification (i.e., there is a salary envelope within the overall budget ceiling) and therefore forbid reallocation between wage expenditures and other expenditures or only by administrative organization and provide agencies flexibility in reallocation; and on the power of the ministry of finance. One common problem is wage bill budgeting based on positions instead of personnel which can lead to cash management problems and perverse incentives as ministries and agencies may deliberately maintain vacancies in order to use the savings from vacant positions to fund salary top-ups. Ministries and agencies also often violate ceilings by hiring contract workers who are then later converted into staff, or by ignoring the ceilings altogether. In Gabon for example, employment ceilings set in the budget law each year are not adequately adhered to, resulting in recruitments above the ceiling established for each ministry.<sup>13</sup> Some budgeting systems, like performance budgeting as compared to line-item budgeting, give spending agencies more flexibility in reappropriating funds from the payroll to other expenditures. The question, then, is whether this delegated authority is appropriately used or abused.

**Deviations between budgeted and actual wage bill expenditures for the general government or the central government, and differences between budgeted and filled positions are good indicators of the effectiveness of wage bill ceilings.** These are akin to the PEFA dimension on budget credibility which examines deviations between the overall budget and actual expenditures.

**Another key issue is effective enforcement and control so that only legally employed public servants receive wages and benefits to which they are entitled.** Ghost employees –

workers who can get paid from the government payroll without being employed by the government – are a major problem in many low and middle-income countries. A related problem is of legitimate workers getting illegal payments, such as teachers and health workers having multiple part-time contracts that add up to more than the allowed full-time working hours. The main mechanism to ensure effective wage bill execution, as spelled out in PEFA indicator PI-23, is integrated payroll and human resource management information systems that have comprehensive databases of authorized staff positions, personnel, and payroll with all elements of compensation that is regularly updated with appropriate safeguards and audit trails. For example, Nigeria's extensive ghost worker problem was revealed when the government implemented a digital ID system for civil servants which enabled it to remove over 60,000 ghost workers, saving \$1 billion annually.<sup>14</sup>

**Absent these integrated systems, censuses of public sector employees, or risk-based payroll audits, are also an effective control mechanism.** Several Sub-Saharan African countries – Central African Republic, Chad, Democratic Republic of Congo, Ghana, Guinea, and Malawi, for example – have recently conducted censuses and audits to remove thousands of ghost workers and retirees from payrolls, and to suspend illegal payments, thereby generating significant fiscal savings.

**A related problem is delays in payments to legitimate employees.** Inefficiencies in public financial management systems can result in delays in budget authorization and payments, and salary arrears are a common problem in many low-income and even middle-income countries. For example, in the past, community teachers in Chad had payment arrears of 10 months, and half of newly hired kindergarten teachers in the Philippines received their salaries late.<sup>15</sup> In both countries, electronic payment of salaries and use of mobile payments, has greatly ameliorated this problem.

13. World Bank staff assessment.

14. Gelb and Clark (2013).

15. Evans and Yuan (2018).

## GUIDANCE QUESTIONS FOR THE ASSESSMENT

1. Are wage bill ceilings set by the Ministry of Finance adhered to by line ministries?
  - a. Are ceilings set based on positions or actual personnel?
  - b. Do ministries agencies have discretion in spending the savings from vacant positions?
  - c. If agencies have flexibility in reappropriations from payroll to other expenditures, are these being done transparently?
2. How effective are payroll controls as measured by PEFA indicator PI-23?
  - a. Integration of personnel and payroll records
  - b. Management of payroll changes
  - c. Internal control of payroll
  - d. Use of payroll audits
3. Is there a high incidence of ghost workers? What are the reasons for these workers being on the payroll (fake workers, retirees still on the payroll, or legitimate employees getting illegal pay)? Has a payroll audit been conducted to identify issues?
4. Is there are problem of salary arrears and delays in the payment of salaries for public servants?

## KEY INDICATORS

Indicator	Description	Data Sources
Deviations between budgeted and actual general government wage bill expenditures in the previous three fiscal years	This indicator measures the extent to which aggregate actual expenditure on the compensation of government workers reflects the amount originally approved, as defined in government budget documentation and fiscal reports.	Government budget and outturn data
Filled positions as a proportion of budgeted positions	This indicator measures the sanctity of wage expenditure ceilings as high percentage of vacant positions can create perverse incentives of using savings from vacant positions to finance compensation.	Administrative data
Ghost workers as a percentage of total workers	Measures the effectiveness of payroll controls.	Public employee census and payroll audits
Wage bill arrears as a percentage of total wage bill expenditures.	Measures delays in salary payments.	Administrative data

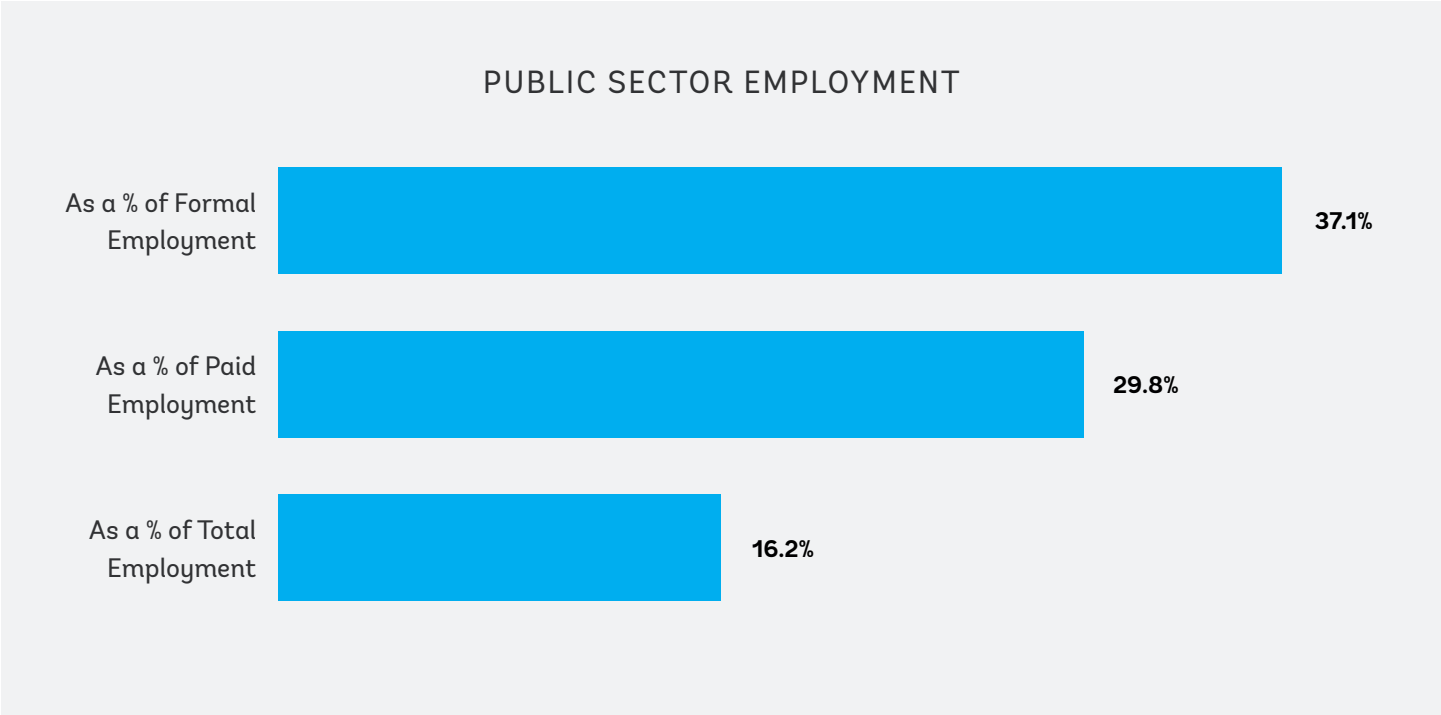
### 3.3 Employment Levels and Distribution

A key question that these assessments need to analyze is whether the public sector is appropriately staffed. Important metrics in assessing aggregate staffing levels are public sector employment as a share of total paid (i.e., those working for wage labor, which excludes self-employed workers), and formal sector paid employment (those who have a formal contract and receive benefits like pensions). The first metric measures the overall labor market footprint of the public sector, while the latter two are better measures of the public sector's size in the subset of the labor market, namely wage and formal sector employment, which is more comparable.

Globally, the public sector is responsible for 16 percent of total employment, 30 percent of wage employment, and

37 percent of formal sector wage employment (Figure 4).<sup>16</sup> The size of the public sector as a share of total employment increases with a country's level of economic development—reflecting the increasing role of the state in providing social services as incomes rise (Figure 5 , top panel). However, there is no discernible relationship between country income levels and public sector employment as a share of salaried employment, which suggests that the public sector grows along with private formal sector wage employment (Figure 5, bottom panel). There is considerable cross-country variation around these global averages with public sector shares of total employment ranging from less than two percent to over 40 percent, and of paid employment from 10 percent to 70 percent, with four- to five-fold variations in these shares at any given income level.

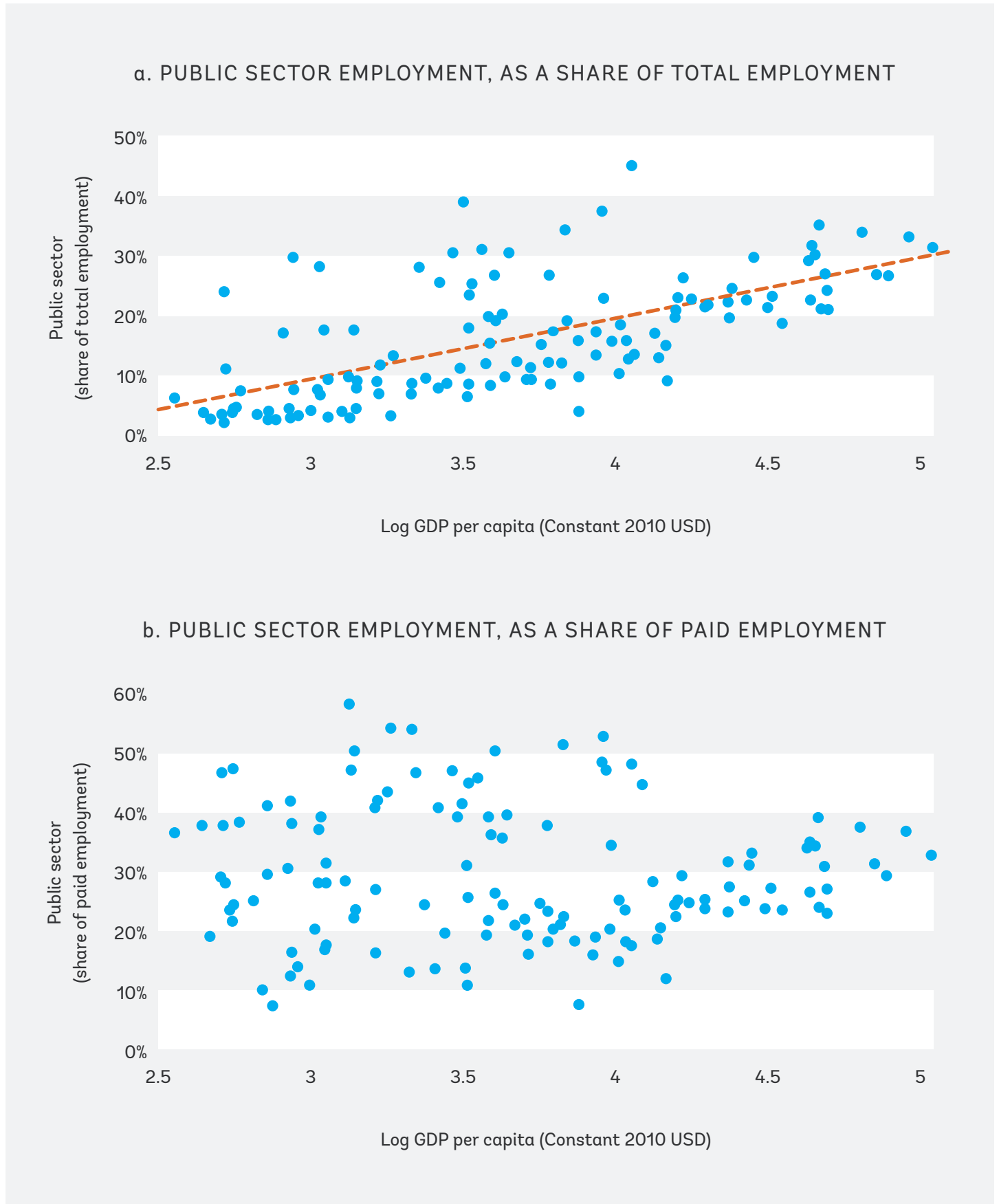
> > >  
**FIGURE 4 - Public Sector Is a Large Employer Globally**



Source: Worldwide Bureaucracy Indicators, latest observations per country (multiple years).

16. Total employed individuals are defined as those workers, aged 15 and above, who in the household surveys responded that they had a job in prior week. Wage employees are those whose basic remuneration is not directly dependent on the revenue of the unit they work for and are instead paid in wages and salaries, piece work, or in-kind, and therefore, exclude self-employed workers. Formal sector wage employees are those who have an employment contract, have health insurance, belong to a union, or who are inscribed in a pension program.

**FIGURE 5 - Public Sector Employment Varies Considerably Cross-Nationally**



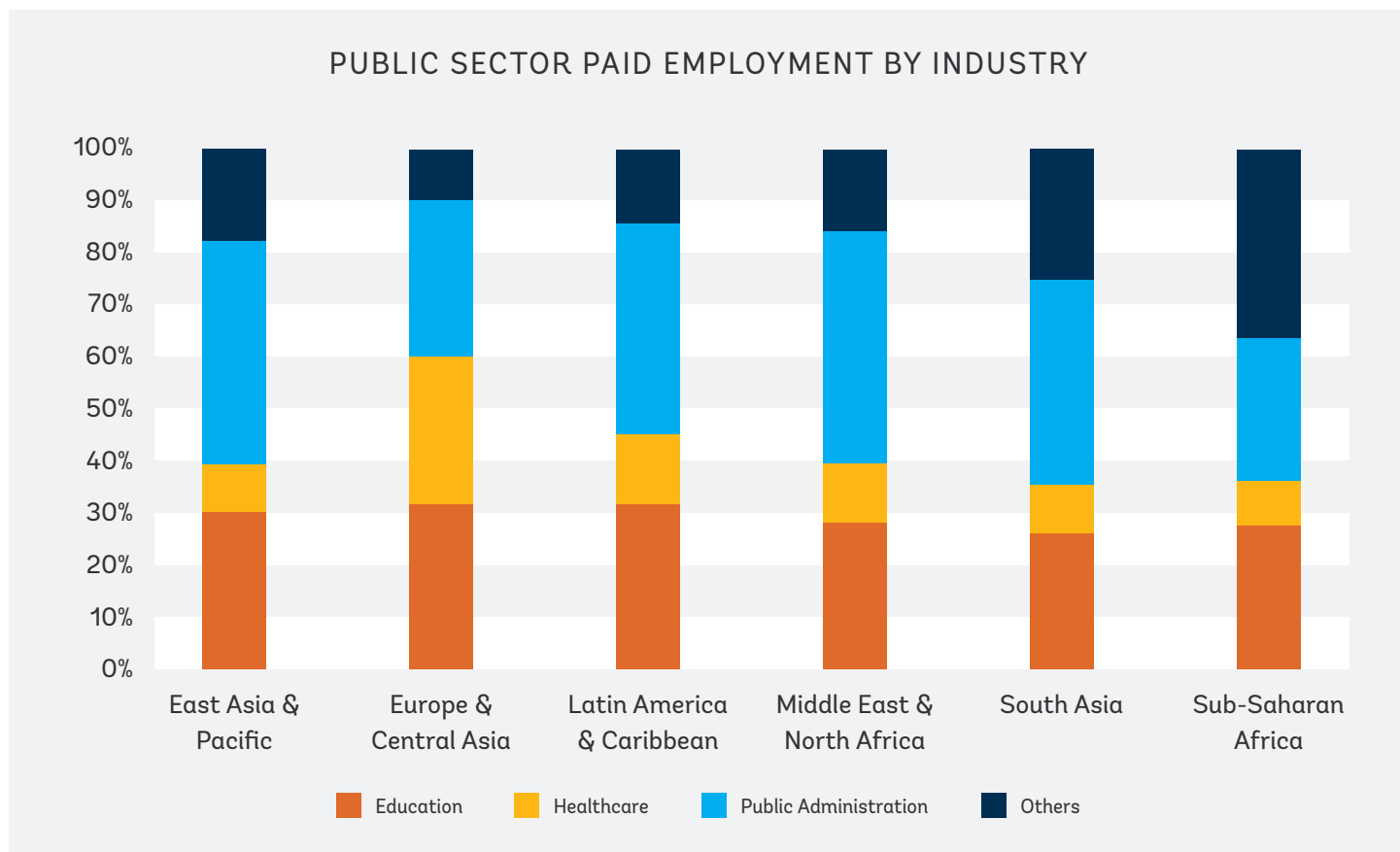
Source: Worldwide Bureaucracy Indicators, World Development Indicators, latest observations per country (multiple years).

**Equally important is to determine the occupational distribution of public sector employment.** Countries have unique legal and occupational classifications of public sector employees that make cross-national comparisons difficult. In many countries, all employees are classified as “civil servants,” meaning they enjoy distinct legal protections; in others, only management and policy staff are civil servants and other workers, particularly service delivery staff, have fewer privileges and are governed by the labor code similar to formal private sector employees. The public sector job

classification systems also differ across countries. Labor force surveys that use internationally accepted standard industry and occupational classifications can be a basis for cross-national comparisons. These reveal that the public administration (including police), education, and health industries employ most public sector employees (Figure 6). The public sector is the predominant provider of education and healthcare services with three-fourths and two-thirds of the education and healthcare paid workforce employed in the public sector, respectively.

> > >

**FIGURE 6 - Most Public Sector Employees Work in Public Administration, Education, and Health**



Source: Worldwide Bureaucracy Indicators, latest observations per country (multiple years).

**Cross-national comparisons of the “right” numbers of education and health professionals are possible because there are norms, albeit approximate, for benchmarking.** Such estimates are more difficult for public administration as it is a broad category that contains a variety of occupations. In education, based on decades of research, a ratio of one teacher for every ten children is considered adequate for pre-school and early childhood programs.<sup>17</sup> Student-teacher ratios can be higher in primary and secondary schools; in the OECD countries, for example, the average primary student-teacher ratio is 16.<sup>18</sup> The World Health Organization specifies a norm of 2.3 health workers per 1,000 inhabitants. Cross-national comparisons should be complemented with within-country analysis, with appropriate nuances for differences in localities (rural versus urban, remote

17. Bowne et al. (2017).

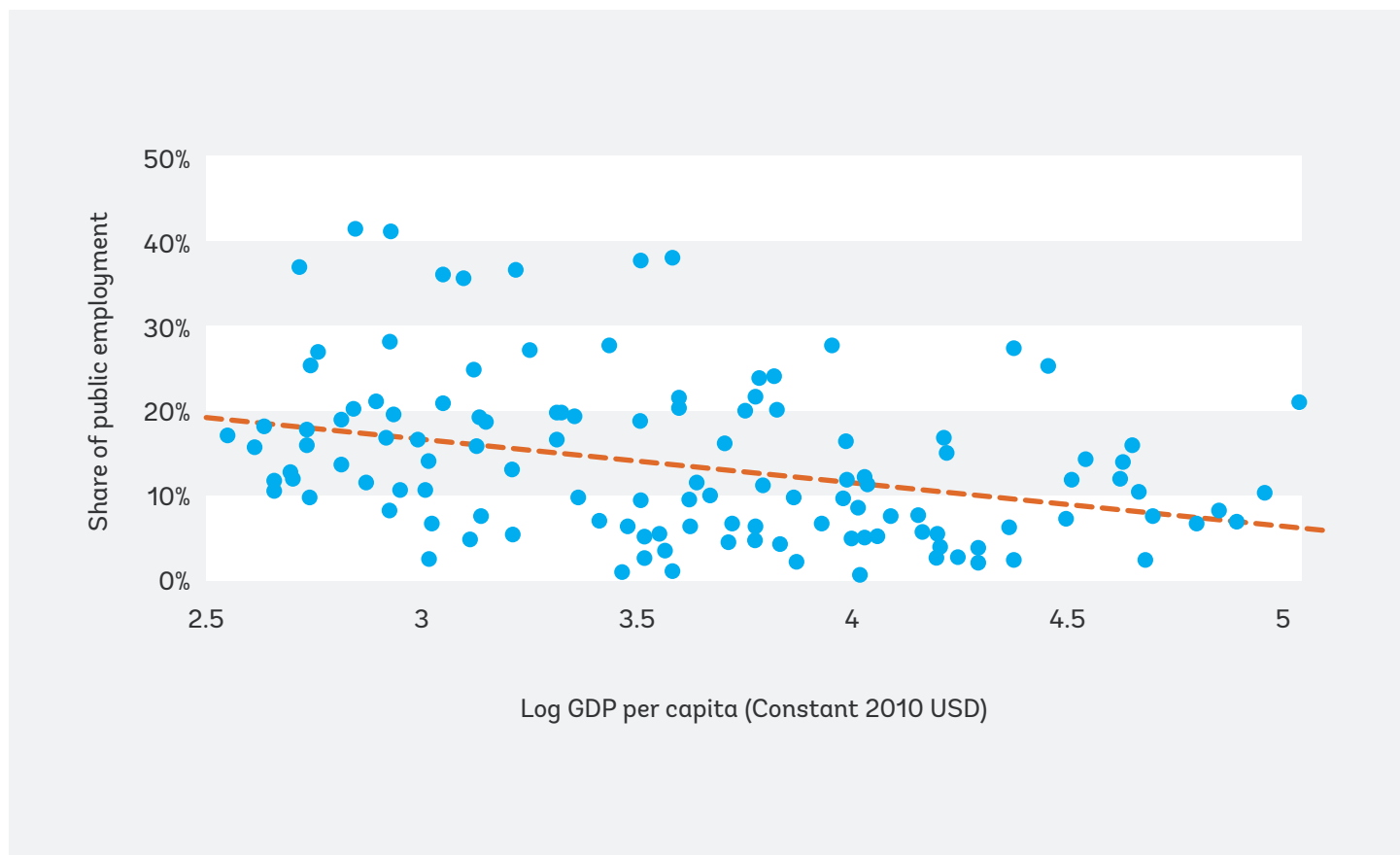
18. OECD (2014).



versus well connected) and the populations to be served, given that the distribution of these public sector workers in public administration, health, education, and security across localities can be unequal. One study found that a quarter of the variation in teacher allocation to schools could not be explained by the number of students.<sup>19</sup> While no such standards exist for policy or administrative staff, interregional variations can still point to staffing inefficiencies.

> > >

**FIGURE 7 - Proportion of Public Sector Workers with No or Primary Education**



Source: Worldwide Bureaucracy Indicators, latest observations per country (multiple years).

**The assessment should also explore the skill distribution of public sector employees.** While on average public sector workers are more educated than their private sector counterparts, there is variation in the proportion of public sector workers with tertiary education across countries. A high proportion of low-skilled workers points to the public sector serving a social welfare function and points to potential fiscal savings without compromising public sector productivity through outsourcing of some elementary functions. As Figure 7 shows, the proportion of public sector workers with no or only primary education declines with country incomes. Many low-income countries have on average 20 percent of such low skilled employees, with the proportions rising to as

high as 40 percent in some cases. A corollary to this high proportion of low-skilled workers is a high proportion of clerical or support jobs. A functional review of Serbia's executive branch found that approximately one-third of jobs were for internal administrative support functions in ministries and agencies which could potentially be consolidated into shared services centers.<sup>20</sup>

**The age, grade, and seniority profile of public sector workers can point to skills gaps.** For example, prolonged hiring freeze or disruptions to recruitment because of conflict, can result in missing cadres, as was the case in Cameroon and Sierra Leone. Another problem is having a large proportion of

19. Majgaard and Mingat (2012).

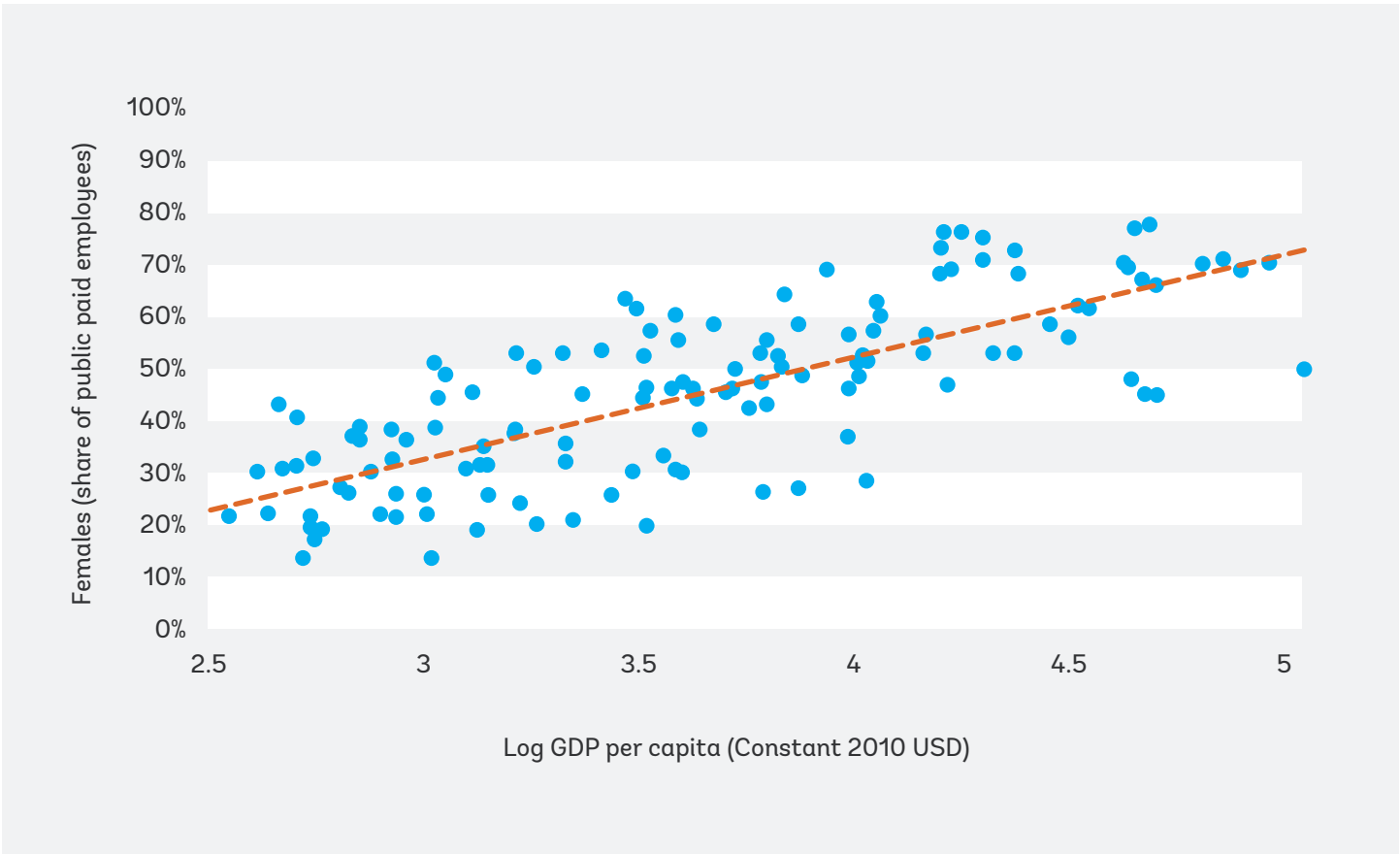
20. World Bank (2016).

older workers, as in Democratic Republic of Congo (DRC), where the inability to finance pensions has meant that many retirees stay on the payroll. An aging public sector workforce is also a problem in high income countries; in Romania, for example, 30 percent of public employees are approaching retirement in the next 10 years, which can have implications for staff motivation and productivity, and fiscal sustainability given growth in pensions expenditures.<sup>21</sup>

**Improving gender equality in public sector employment should be an important policy objective of governments.** The public sector’s large labor market footprint means that it can be a strategic leader in changing norms and behaviors and promote greater gender equality in employment. Globally, 46 percent of all public sector workers are women, and in most countries the proportion of public sector workers who

are female is higher than the proportion of private sector workers who are female. Women, however, are significantly underrepresented in the public sector in some low- and middle-income countries (Figure 8). There is also considerable horizontal and vertical occupational segregation with women concentrated in certain industries and positions. Globally, 74 and 69 percent of the public sector education and healthcare workforce, respectively, is female, but women occupy only 30 percent of senior official positions. The reasons for this inequality in public sector employment have not been studied, but drawing on the academic literature on the private sector, likely entail: differential caring responsibilities that limit women’s career progression; social norms and attitudes about what type of work women are more suited to; and biases in task assignments so that women are less likely to receive more visible and career-enhancing responsibilities.<sup>22</sup>

> > >  
**FIGURE 8 - The Proportion of Public Sector Employees Who Are Female**



Source: Worldwide Bureaucracy Indicators, World Development Indicators, latest observations per country (multiple years).

21. World Bank (2019).  
22. Czibor (2021).

**In many countries, there is a dual labor regime for public sector employees, with a large contingent of contract workers in service delivery sectors performing similar jobs as permanent employees.** Contract teachers and community health workers are very common in developing countries and are different from their civil servant counterparts in that they are paid less, often significantly so, enter employment through less rigorous recruitment criteria, and have time-bound appointments. While some rigorous impact evaluations have shown that in the short-term contract teachers can outperform regular teachers as they are ostensibly more accountable and

have an incentive to work harder in order to get civil servant status, there are question marks about the sustainability of this policy.<sup>23</sup> Most contract staff, with the backing of employee unions, successfully transition to permanent status and there are significant risks that the lower screening criteria risk more patronage-based hiring. In Indonesia, for example, hiring of contract teachers by subnational governments is highly politically motivated, spiking in election years and increasing in numbers after the introduction of direct elections of district heads.<sup>24</sup>

## GUIDANCE QUESTIONS FOR THE ASSESSMENT

1. Is the public sector over- or understaffed in aggregate and what have been the employment trends over time?
2. Is the public sector over- or understaffed for particular skills and occupations, both in aggregate and in specific organizational and territorial jurisdictions?
3. Are there a large proportion of public sector workers with low educational qualifications or in low-skilled jobs?
4. Is the public sector a gender-equal employer?
  - a. What are the proportion of women in aggregate?
  - b. Is there horizontal and vertical segregation in employment?
5. Is there a dual labor regime with a large segment of contract workers, and what are its implications for public sector employment?

## KEY INDICATORS

Indicator	Description	Data Sources
Public sector employment as a share of total employment	Public sector employment, as defined by the International Classification of Status in Employment (ICSE), <sup>25</sup> as a share of all currently employed individuals.	WWBI; labor forces surveys
Public sector employment as a share of paid employment	Public sector employment, as defined by ICSE, as a share of all individuals in paid employment, excluding non-paid, self-employed, and employers.	WWBI; labor forces surveys
Public sector employment as a share of formal paid employment	Public sector employment, as defined by ICSE, as a share of all individuals with formal contracts, social security, health insurance or union membership.	WWBI; labor forces surveys
Industry and occupational distribution of public sector employment	Decomposition of public sector employment by industry classification or occupational group.	WWBI; labor forces surveys

23. Bruns et al. (2011).

24. Pierskala and Sacks (2017).

25. <https://ilostat.ilo.org/resources/concepts-and-definitions/classification-status-at-work/>.

Indicator	Description	Data Sources
Industry and occupational distribution of public sector employment	Decomposition of public sector employment by industry classification or occupational group.	WWBI; labor forces surveys
Student-teacher ratios; per-capital health workers	Provides a measure of the adequacy of key service delivery staff compared to international norms.	Administrative data
Educational profile of public sector workers	Decomposition of public sector workers by educational qualifications.	WWBI; labor forces surveys
Distribution of public sector workers by pay grade	Decomposition of public sector workers by skill level and jobs.	Administrative data
Females as a share of public sector employees	Female employment within the public sector as a share of public sector paid employment.	WWBI; labor forces surveys
Females as a share of public sector employees by industry	Distribution of female employment in the public sector disaggregated by industry classification.	WWBI; labor forces surveys
Females as a share of public sector employees by occupation	Distribution of female employment in the public sector disaggregated by occupational group.	WWBI; labor forces surveys

### 3.4 Wage Competitiveness

**Public sector wage levels are crucial for attracting and retaining competent workers for expenditure efficiency, fiscal sustainability, and for equilibrium outcomes in the entire labor market.** Answering the question, “Does the public sector pay too much or too little?” naturally requires an appropriate comparator. There are three potential comparisons. First, how much does the public sector pay relative to the country’s private sector, given that the likely alternative work opportunities are in the domestic private sector? Estimating public-private wage differentials is the most natural comparison that has been explored in a large academic and policy literature. Second, how much does the public sector in that country pay for certain occupations, compared to the public sectors of other similar countries? This comparison is useful for public sector occupations that may not have a clear private sector comparator (such as the police); where there is a natural regional labor market for public sector jobs (such

as the European Union); or where significant migration – for example, of doctors and nurses – occurs.<sup>26</sup> Third, what is the distribution of public sector pay—that is, is there too much or too little pay for certain jobs relative to others within the public sector— which will be considered in the next section under wage inequity?

**Theoretically, public sector wages should be set at a level relative to private sector wages so that there is a small public sector wage penalty, and this penalty should be stable over time.**<sup>27</sup> Under the theory of “compensating wage differentials,” a particular job should pay more or less than another if there are other non-wage undesirable or desirable characteristics of that job that need to be compensated for. Given the pecuniary and non-pecuniary benefits of the public sector, the most important of which is job security, monetary compensation should be lower than in the private sector,

26. In countries with high levels of emigration, like the Philippines and Croatia, the appropriate comparator for certain occupations, like nurses and doctors, will also need to include the destination country private sector labor markets.

27. Gomes (2016).



for equivalent workers in equivalent jobs, so that the total compensation accounting for all attributes of jobs is roughly equal in the two sectors. Under this optimal compensation policy, the public sector will be competitive without being distortionary, and there will not be any shortage of skills in either sector. The same principle implies that the wage premium should be annually monitored to ensure that no gap emerges between the public and private sectors that can cause a departure from this theoretical optimum.

**Estimating public sector wage competitiveness, compared to the private sector, is methodologically complicated.** The standard approach in the academic literature is to measure differences in total compensation – basic wages, allowances, bonuses, and monetized in-kind payments like housing and transportation – between the public and private sector for statistically similar workers in similar jobs. Given the demographic differences of workers between the two sectors, this approach ideally requires controlling for observable worker characteristics, such as age, education, work experience, and gender that impact human capital and therefore earnings; accounting for unobserved characteristics such as ability, risk aversion, and public service motivation; and controlling for occupations given that similar workers can have very different responsibilities in different occupations. A simple, raw comparison of average wages in the private and public sectors is misleading as public sector workers are older and more educated than their private sector counterparts, have different career objectives and motivations, and work

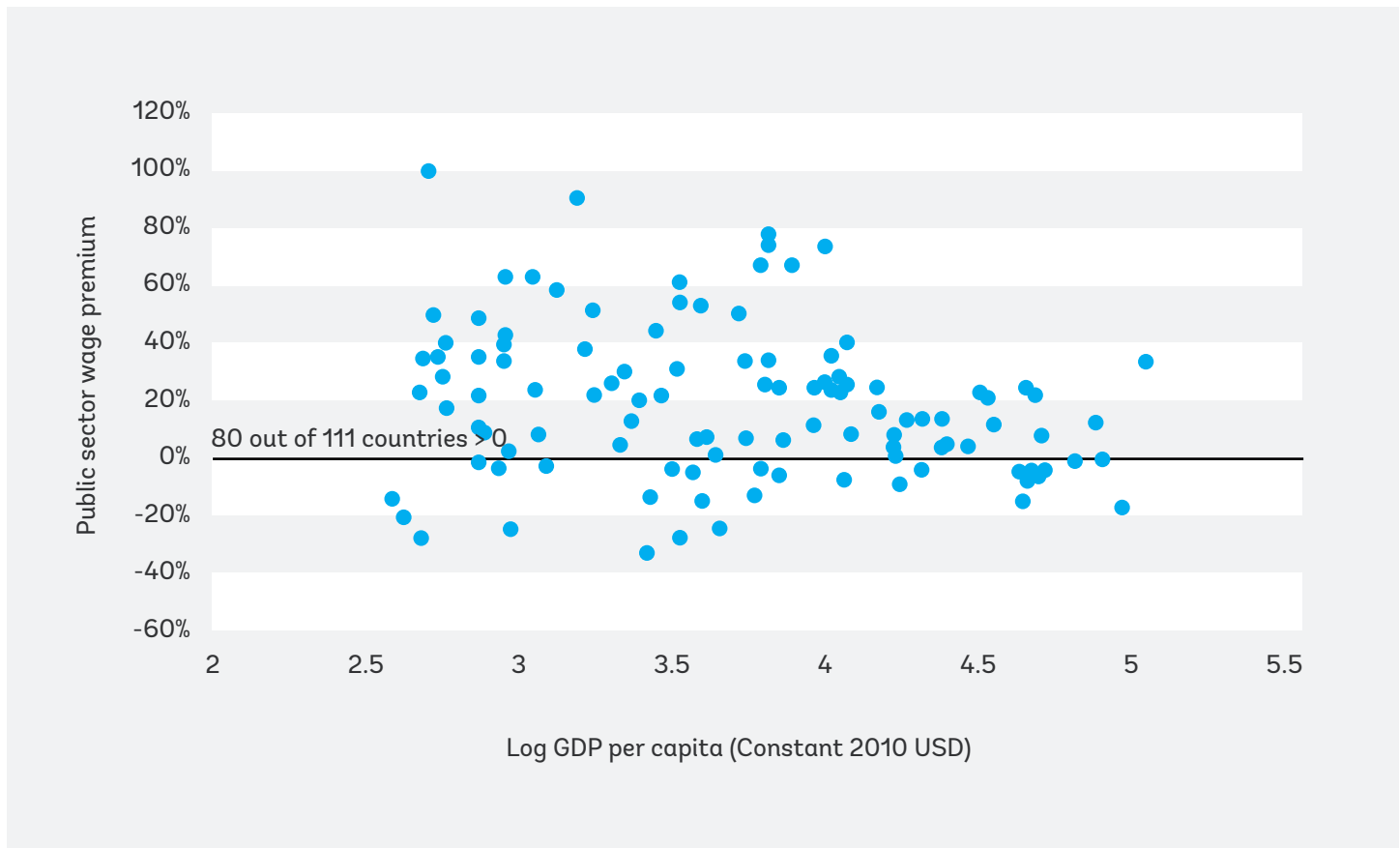
on occupations like administration, healthcare, security, and teaching that are not well represented in the private sector with its much higher proportion of agricultural and manufacturing jobs. Given that many public sector jobs are unique and may not have an obvious private sector comparator complicates this analysis. Another challenge is that the elements of total compensation, such as the proportion paid in wages versus bonuses or benefits, can be quite different between the two sectors and may not be accurately measured in labor force surveys.

**Cross-national wage regressions from labor force surveys reveal that public sector workers on average earn higher wages than observably similar private sector workers.** Using a wage regression, where wages are a function of observable worker characteristics, such as education, age (a proxy for work experience), gender, location, and the sector of employment (public sector or private sector), public sector workers have approximately 19 percent higher basic wages (excluding allowances and bonus payments) across the 111 countries for which the World Bank has data. Eighty of these countries have a positive premium, and there is no clear pattern in the size of the premium with country incomes (Figure 9). This finding also holds for gross wages that include employer social insurance contribution and allowances for the 27 European Union member states for which data is available.<sup>28</sup> Several academic studies, either single-country or cross-country, similarly find public sector wage premiums.<sup>29</sup>

28. WB staff calculations based on Eurostat EU SILC data.

29. Finan et al. (2017)



**FIGURE 9 - Public Sector Wage Premium (Compared to All Private Paid Employees, Excluding Benefits)**

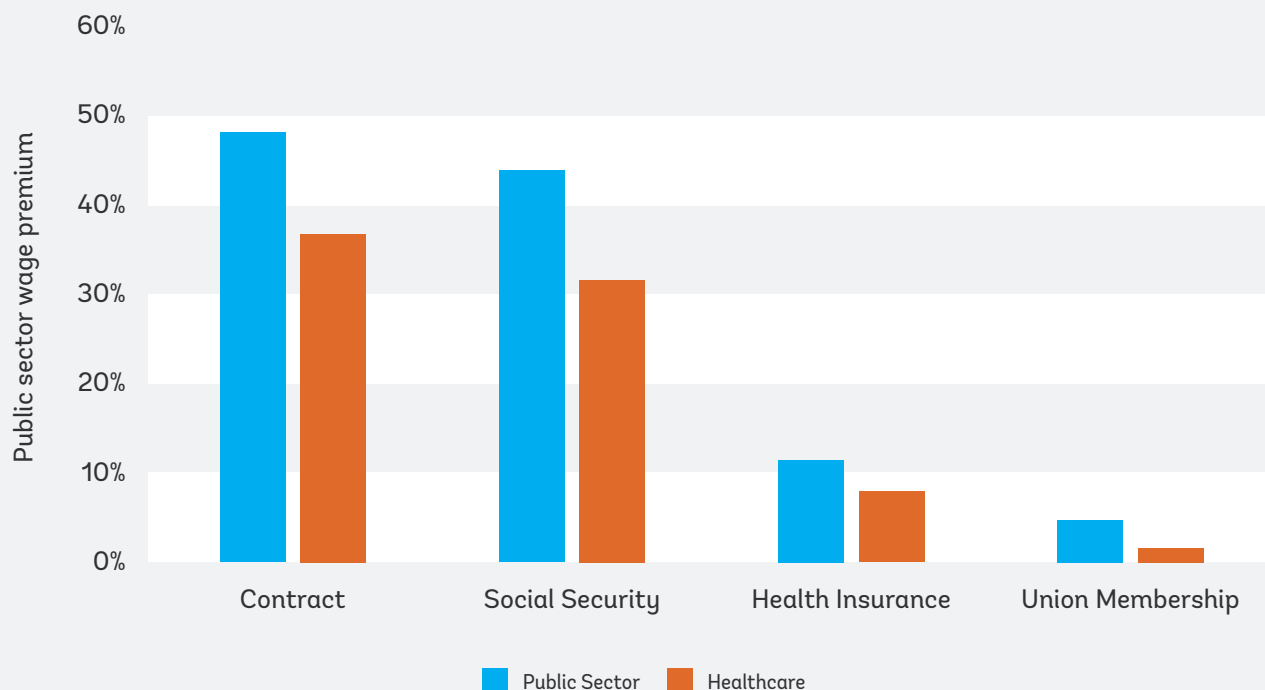
Source: Worldwide Bureaucracy Indicators, World Development Indicators, latest observations per country (multiple years).

**Public sector premia are likely to be higher globally when allowances and benefits, particularly pensions, are accounted for.** A much higher proportion of public sector workers receive a job contract, health insurance, and pensions (social security) than private sector workers (Figure 10). For example, in Indonesia, Pakistan, and Thailand the inclusion of expected pensions benefits, monetized annually, significantly increased the public sector wage premia; in the

case of Thailand, it rose from 15 percent to 42 percent.<sup>30</sup> Box 1 provides some examples of how including pensions can have a large impact on total compensation differentials between public and private sector workers. These differentials are likely to be even larger when non-pecuniary benefits, like job security, are factored in as public sector workers have much more stable jobs than their private sector counterparts.

30. Whitehouse (2006); Palacios and Jain (2020).



**FIGURE 10 - Access to Benefits in the Public and Private Sectors**

Source: Worldwide Bureaucracy Indicators, latest observations per country (multiple years).

### **BOX 1 - Accounting for Pensions in Public-Private Wage Differential Estimates**

A complete estimation of public-private compensation differentials using econometric methods needs to include pensions which are considered as deferred compensation and may exacerbate or offset earnings differentials. However, this is rarely done.

An early example is the analysis of compensation differentials between public and private sector workers in Pakistan produced by Whitehouse (2006). Pension wealth is calculated using the defined benefit formula from the separate schemes that cover each type of worker and assuming life expectancy at retirement. The way pensions are indexed after retirement is also factored. The pension wealth is discounted to present terms and divided by expected years of service to estimate pension rights accrued for each year of service. This present value of (marginal) pension entitlements is added to current earnings of workers in each sector to calculate the 'compensation' variable. Including this pension entitlement significantly offset the negative wage differential for workers with more education at higher grade levels. Instead of a wage penalty, these workers received a compensation premium.

More recently, a World Bank study of Indonesia (Jain and Palacios, forthcoming) revealed that the defined benefit scheme for public sector employees yielded higher replacement rates than the scheme that covers private sector workers, but allowances were not included in the public sector pensionable wage and allowances varied across the wage distribution. Adjusting for these differences, the wage premium for less educated workers in the public sector doubled from 15 to 30 percent after including pensions. In contrast to the case of Pakistan, the significant public sector wage premium

for university graduates, whose total remuneration includes a higher share of allowances, was reduced slightly by including pensions.

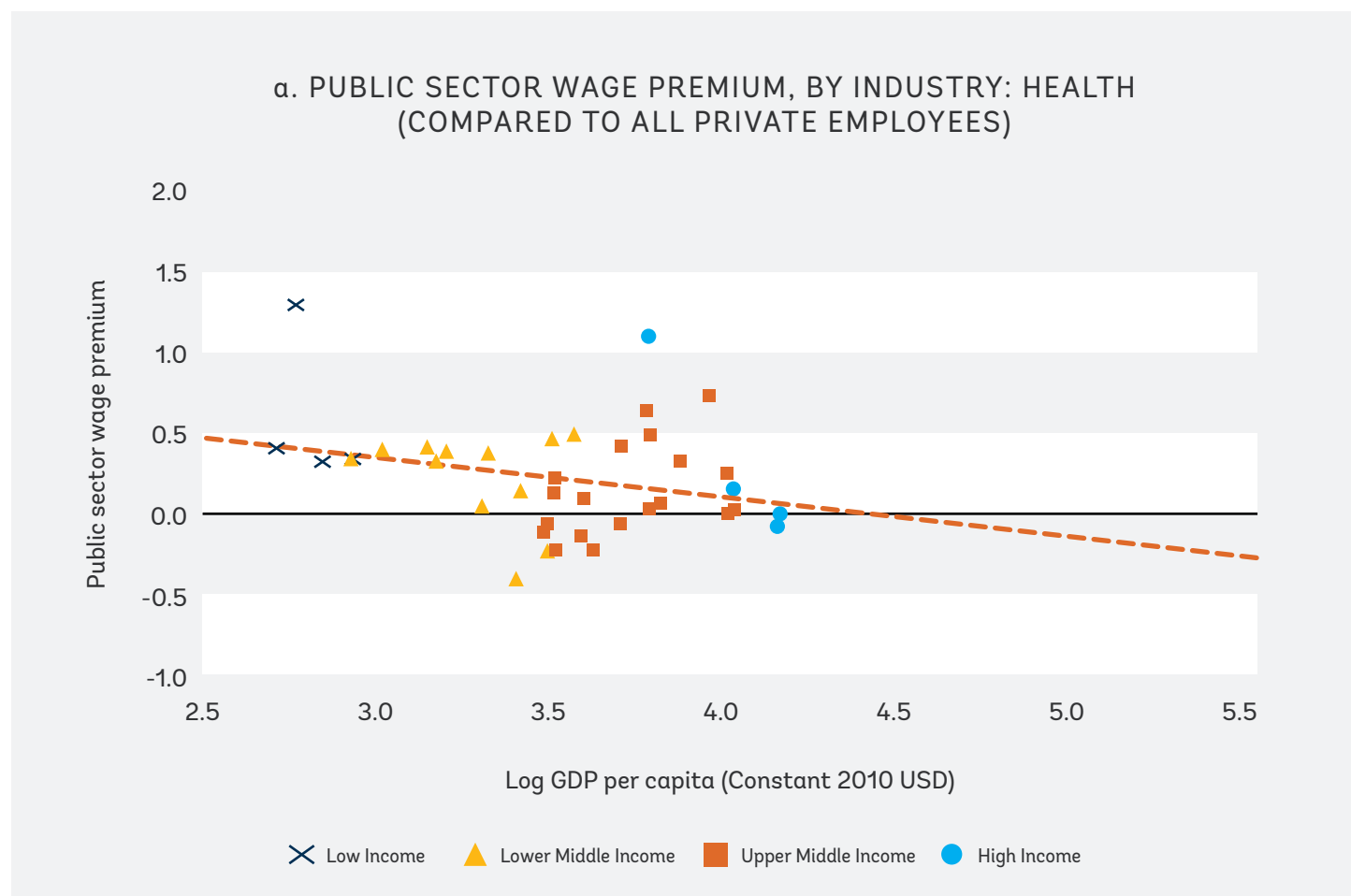
Including pensions in public sector compensation diagnostics becomes even more important in the context of reforms. Changes to the wage bill often have long run repercussions on pensions; including allowances in the pensionable wage base in Indonesia for example, would greatly increase public-private differentials. Meanwhile, sensible parametric reforms to civil service pension schemes like moving from final earnings to a longer earnings period can reduce these public-private compensation differentials while also improving equity across civil servants with different age-earnings profiles.

**The size of the wage premium is sensitive to the choice of the private sector comparator.** What matters for workers are their alternative employment prospects when applying for public sector jobs or when considering leaving public sector employment. The relatively few studies that have analyzed movements of workers between the two sectors suggest that the alternative to public sector employment is more likely to be the formal sector for relatively skilled workers, and the informal sector for relatively unskilled workers.<sup>31</sup> The average basic

wage premium globally decreases to seven percent, if public sector workers are compared only to formal sector workers, with 52 out of 84 countries having a positive premium. Similarly, for specialized occupations, the comparison should not be to the overall private sector but for those specific occupations in the private sector. For example, there is a wage premium for public sector education and health professionals compared to their private sector counterparts, though interestingly, the premium decreases with country income levels (Figure 11).

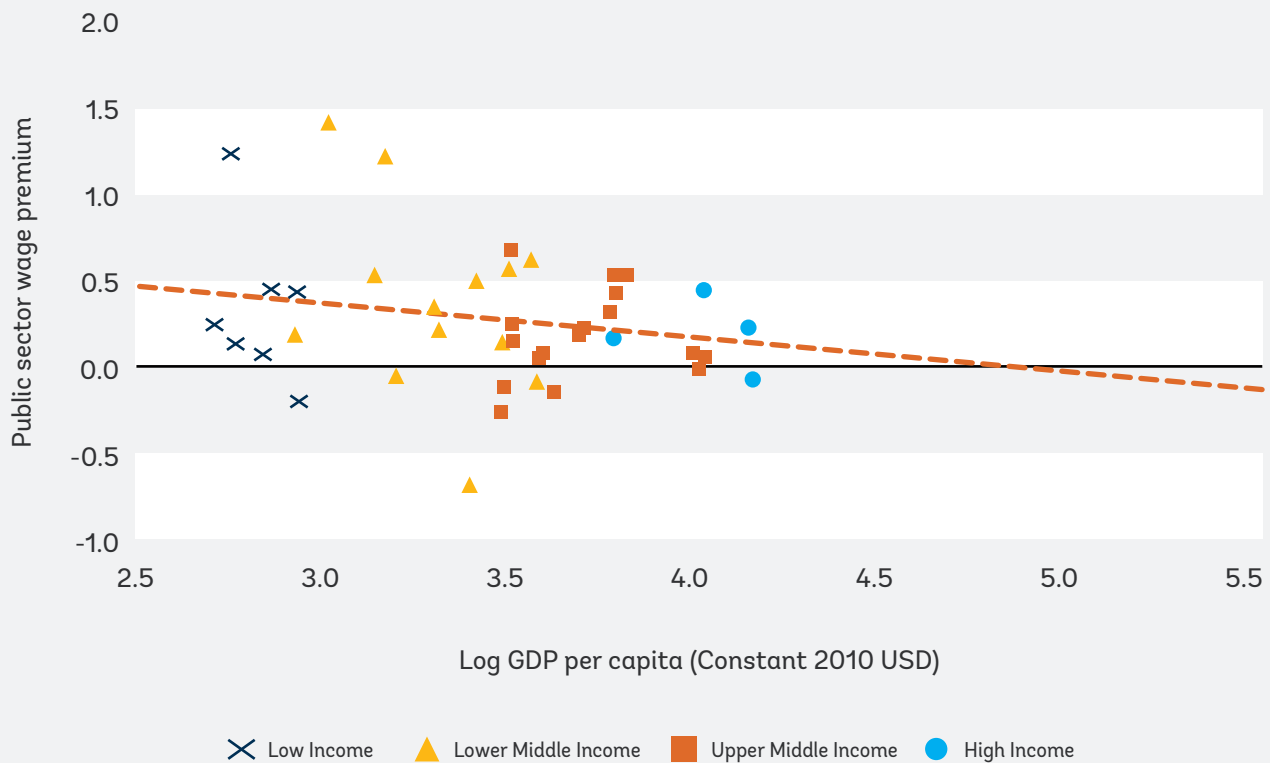
> > >

**FIGURE 11 - Public Sector Generally Pays a Premium for Education and Health Professionals**



31. Yassin and Langot (2018)

## b. PUBLIC SECTOR WAGE PREMIUM, BY INDUSTRY: EDUCATION (COMPARED TO ALL PRIVATE EMPLOYEES)



Source: Worldwide Bureaucracy Indicators, World Development Indicators, latest observations per country (multiple years).

**How the wage premium varies across different categories of public sector workers can reveal potential inefficiencies in the wage bill.** A common finding in several academic studies, confirmed in the WWBI data, is that the premium is higher for lower skilled workers and for lower wage occupations. Public sector workers with tertiary education have a wage premium of two percent as compared to a nine percent public sector wage premium for workers with primary education. Clerical occupations enjoy higher premia in the public sector than senior managerial occupations. In many countries, the public sector pays a wage penalty for the most skilled employees.<sup>32</sup> Studies have also noted that premiums are higher for entry-level civil servants than senior civil servants, which may be particularly disruptive to the overall labor market. For example, in Brazil, the public sector wage premium is 45 percent for new entrants in the federal civil service, and in Indonesia, entry level civil servants earn approximately 28 percent more than similarly situated peers in the private sector.<sup>33</sup> Given these high premia, it is not surprising that there is massive

demand for public sector jobs, with hundreds of applicants for each vacancy.

**Even if the public sector pays higher wages on average there may be rigidities in pay policies that prevent it from paying competitive wages for high demand occupations or for the most senior jobs.** As has been noted in many studies, pay dispersion in the private sector has increased greatly over the past four decades and some occupations like finance and information technology can pay multiples for similarly educated workers than other occupations. Private sector organizations also typically have steeper hierarchies than public sector organizations, with pay rising more sharply with seniority. One common metric for wage dispersion is the wage compression ratio which is the ratio of the 90th percentile wage to the 10th percentile wage in the salary distribution. This ratio is lower in the public sector for 70 out of 99 countries for which there is data in the WWBI (Figure 12). Studies show that when the wage structure in the public sector becomes

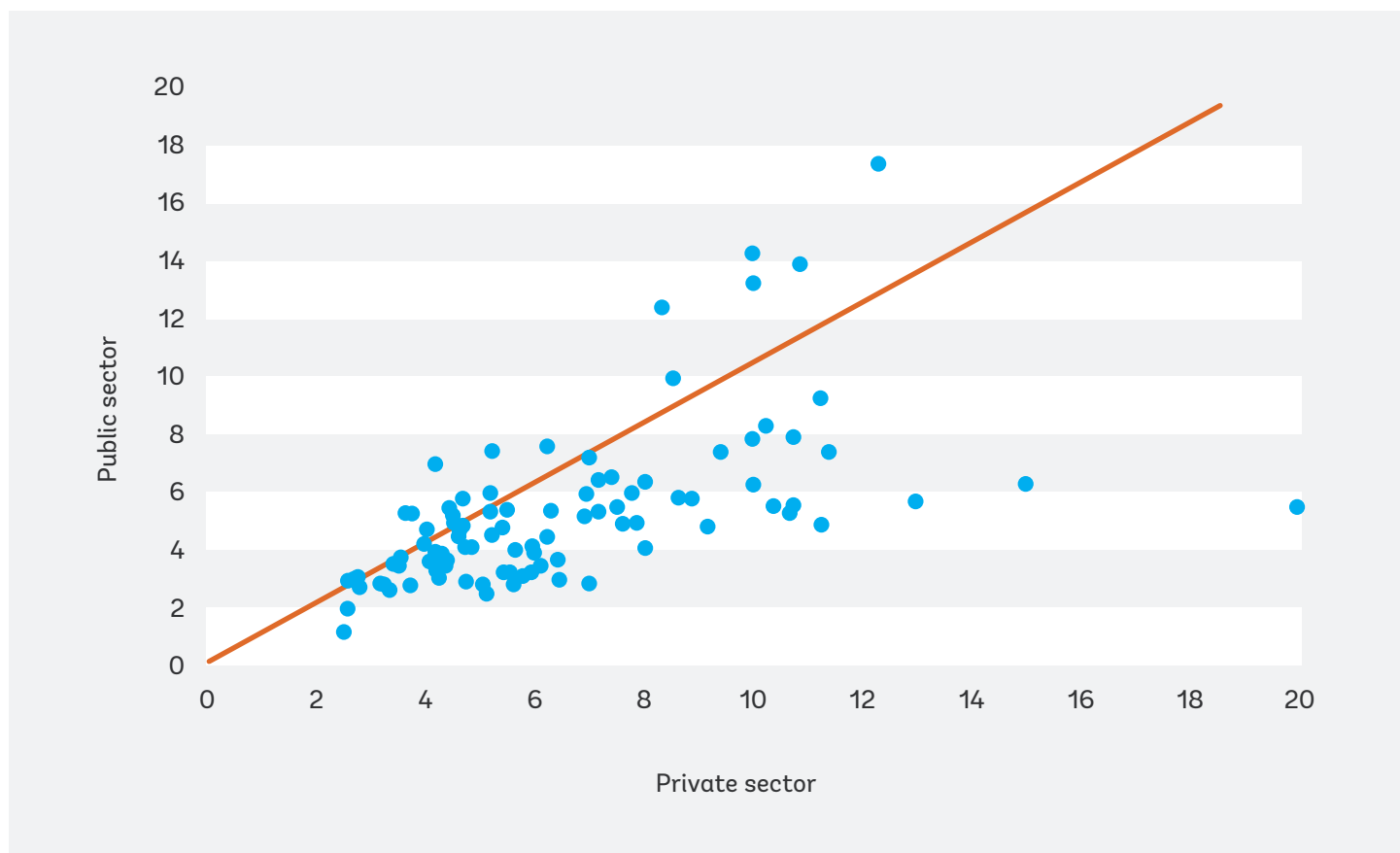
32. Hausman, Nedelkoska, and Noor (2020).

33. Kuipers (2020).

relatively more compressed, it is more difficult to attract and maintain high-skilled workers or skills that are in high demand in the labor market, such as for digital skills or other highly technical jobs.<sup>34</sup> The public sector will also likely pay less, often significantly so, for the most senior positions as compared to chief executives and senior management of private sector companies, and these differences are unlikely to be captured in labor force surveys as they are in the “tails” of the salary distribution.

> > >

**FIGURE 12 - Pay Compression Ratio: Public vs Private Sectors**



Source: Worldwide Bureaucracy Indicators, latest observations per country (multiple years).

Note: The 45-degree line represents equal values for the two axes.

**These changes in the structure of the labor market prompted moves towards greater pay flexibility in the public sector in the OECD countries, including greater discretion to ministries and agencies in setting pay scales and more individualization of pay.** Pay flexibility measures include having broad pay grade bands so that managers have more discretion in placing jobs in a pay range based on staff skills and demand; individual contracts determined by agency heads that enables pay to be set at any point of the pay band for that job; and higher pay scales for finance and regulatory agencies.<sup>35</sup> While such flexibility can better enable agencies

to attract and retain unique skills that are in high demand in the labor market, it also creates risks of pay fragmentation and inequity and underlines the tradeoff between equity and pay competitiveness that governments need to manage.

**For certain occupations, there may be no obvious private sector comparator and instead the appropriate benchmark may be the public sectors of other countries.** Police and security occupations have limited private sector alternatives. Similarly, globally, over 77 percent of all workers in the education sector work in the public sector, with higher ratios in

34. Borjas (2002).

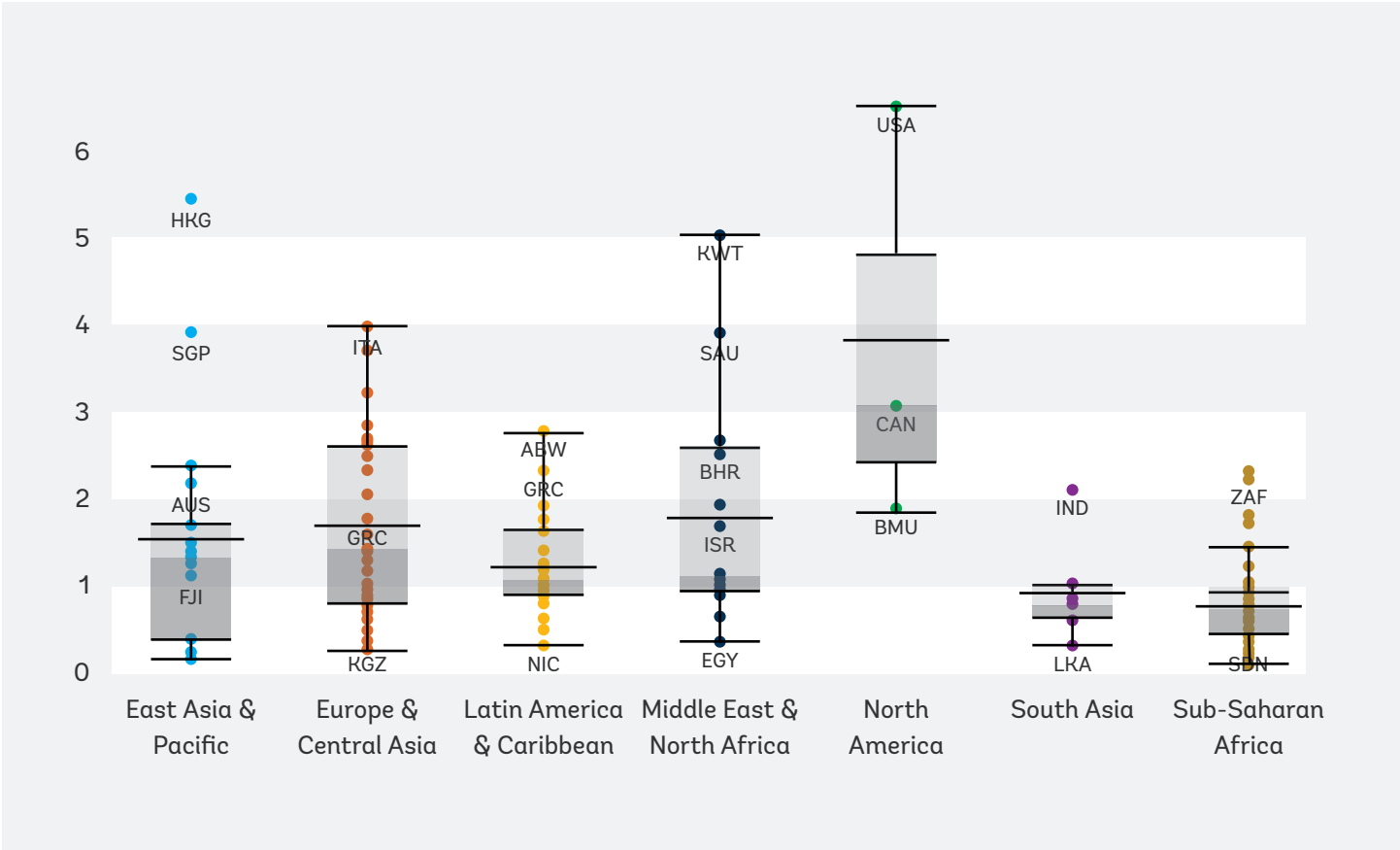
35. World Bank (2014)

low- and middle-income countries. Doctors and nurses have a high incidence of migration and retaining these workers requires tracking the wages for these occupations in destination countries.<sup>36</sup> The International Comparison Program’s wage data enables cross-national wage comparisons for specific occupations adjusted for purchasing power parity (PPP). They

reveal, for example, that South Africa pays the highest wages of hospital doctors relative to the global median among the countries in Sub-Saharan Africa (Figure 13). Such international public sector wage benchmarking for high demand jobs with relevant countries can be a valuable complement to public-private wage comparisons.

> > >

**FIGURE 13 - Wages of Hospital Doctors Relative to Global Median**



Source: Worldwide Bureaucracy Indicators based on ICP data, 2017.

### GUIDANCE QUESTIONS FOR THE ASSESSMENT

1. Does the public sector over or under-pay (taking into account all elements of compensation) compared to the private sector in aggregate and for different industries, occupations, locations, and demographic groups?
2. How does pay for occupations with limited domestic private sector comparators compare to that in the public sectors of other relevant countries?
3. Is there sufficient flexibility in wage practices to better align public sector wages to the needs of specific labor markets to attract specialized and high demand talent? How does this flexibility impact wage inequity and is the tradeoff well managed?
4. Does the government use data to model fiscal impact and identify salary mismatches and to inform wage policy?

36. Antwi and Phillips (2013).

## KEY INDICATORS

Indicator	Description	Data Sources
Public vs. private sector wage premia (controlling for worker and job characteristics)	Most widely used indicator of overall wage competitiveness.	WWBI; labor forces surveys
Public-private wage premia by occupation	Measures the difference between public and private sector pay for specific occupations.	WWBI; labor forces surveys; administrative data
Public-private wage premia by education level	Measures the difference between public and private sector pay for different skill levels.	WWBI; labor forces surveys
Public-private benefits premia	Measures the difference between public and private sector benefits (for example, health insurance, pensions, access to training).	WWBI; labor forces surveys
Pay compression ratios in the public and private sectors.	Measures pay dispersion and is an indicator for public-private wage differentials at different points in pay distribution.	WWBI; labor forces surveys
Pay comparisons for occupations across public sectors	Measures pay of a particular public sector occupation compared to global, regional, or benchmark country pay for that occupation.	ICP data; administrative data

## 3.5 Wage Equity

**Wage equity – whether workers in similar jobs, with similar skills, similar years of service, and similar performance are paid equally, and differences in salary between different occupations are deemed legitimate – has strong psychological roots and impacts worker motivation and productivity.** Studies have shown that wage equity is ingrained in peoples' sense of fairness and self-worth, that workers compare their wages to their peers in an organization, just as they do to the private sector, and wage differentials that are not perceived to be justifiable can be demotivating.<sup>37</sup> Surveys of public employees conducted by the World Bank reveal that this pay inequity is a major source of work dissatisfaction—for example, 65 percent of civil servants surveyed in the Liberia forestry agency stated that unequal and unfair pay was a source of conflict between staff.<sup>38</sup> Unjustifiably high wages for certain jobs

can also have significant implications for pension liabilities as many defined benefit schemes link pension payments to highest earned salaries.

**There are many sources of wage inequity, a common one being a fragmented wage setting regime with different salary laws for different occupational groups, territorial jurisdictions, and even ministries and agencies.** This pay differentiation may be a deliberate policy choice, as in several Western European and OECD countries, where responsibilities for pay setting have been devolved to ministries and agencies to better enable managers to individualize pay to the competencies of staff and to attract high-demand skills to the public sector. Or it may be an accumulation of ad hoc sector-specific changes reflecting bargaining by different interest groups. In Brazil for example, there are hundreds of

37. Rosenfeld (2021).

38. World Bank (2020b).



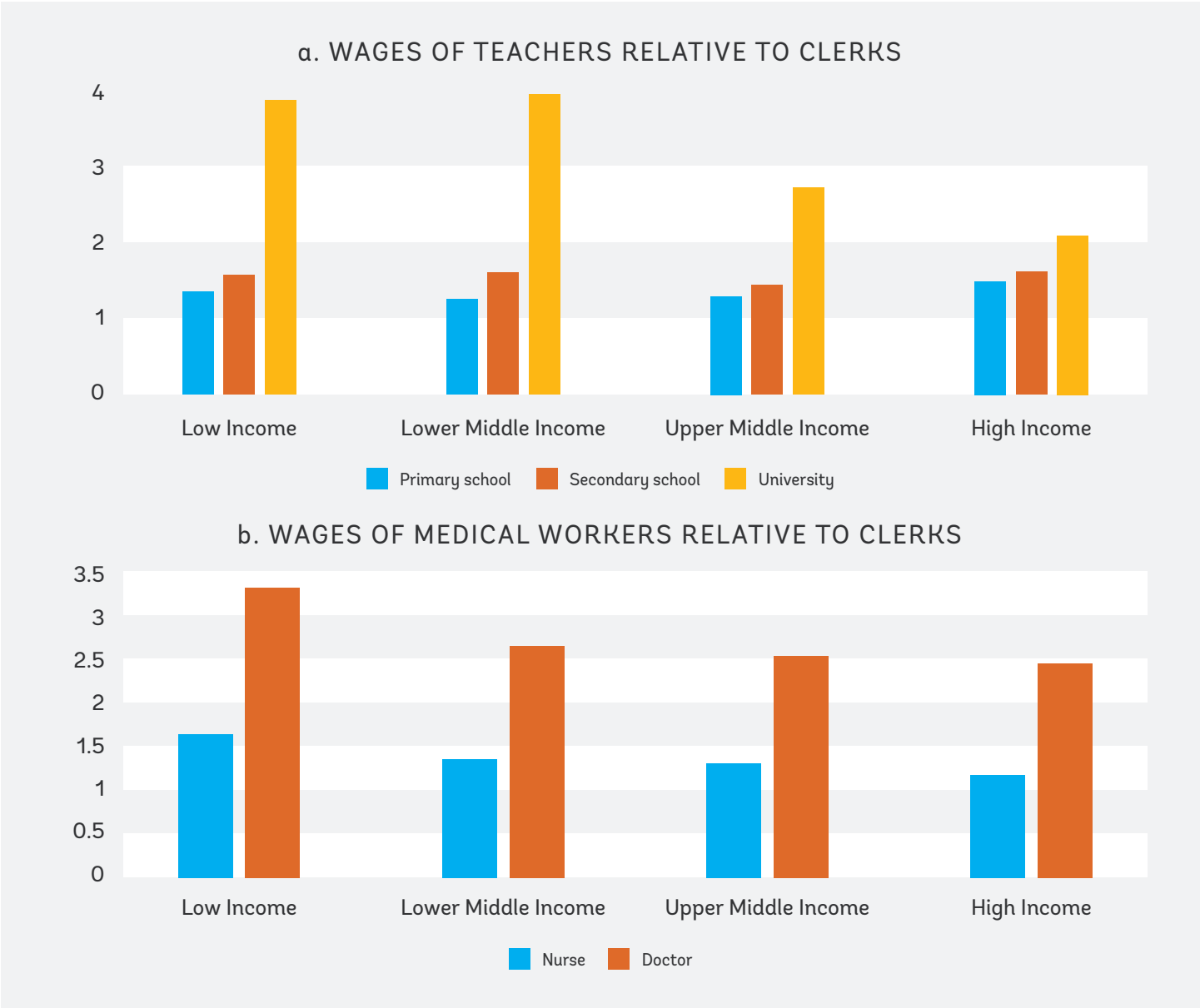
different pay scales, and associated employee unions, for different occupational groups in the federal government alone. Such fragmentation can cause considerable pay inequity between similar workers and can also create pressure for wage increases as it encourages competitive bargaining between the unions to increase salaries for their respective occupational groups.

**Wage inequity can also arise with unified pay scales if these are not grounded in a robust job evaluation methodology.** Ideally, different jobs should be “weighted” based on standard criteria like complexity of tasks entailed and other relevant traits, and positioned relative to each other either by grade on a single pay scale or on separate pay

scales for distinct occupational groups—for example, public administration, education, health, and security. Often, job evaluations are not systematically done or regularly updated. As public sector employment grows and new positions are created, relative pay between jobs can become ad hoc and not grounded in objective and credible criteria. For example, university teachers are much better paid relative to primary and secondary school teachers in low and lower-middle income countries, earning almost 4.5 times the wages of government clerks compared to 1.5 times for primary teachers (Figure 14). These disparities are much lower in high income countries. Similarly, nurses are relatively underpaid compared to doctors in low-income countries.

> > >

**FIGURE 14 - Relative Wages of Key Service Delivery Staff Can Vary Significantly**



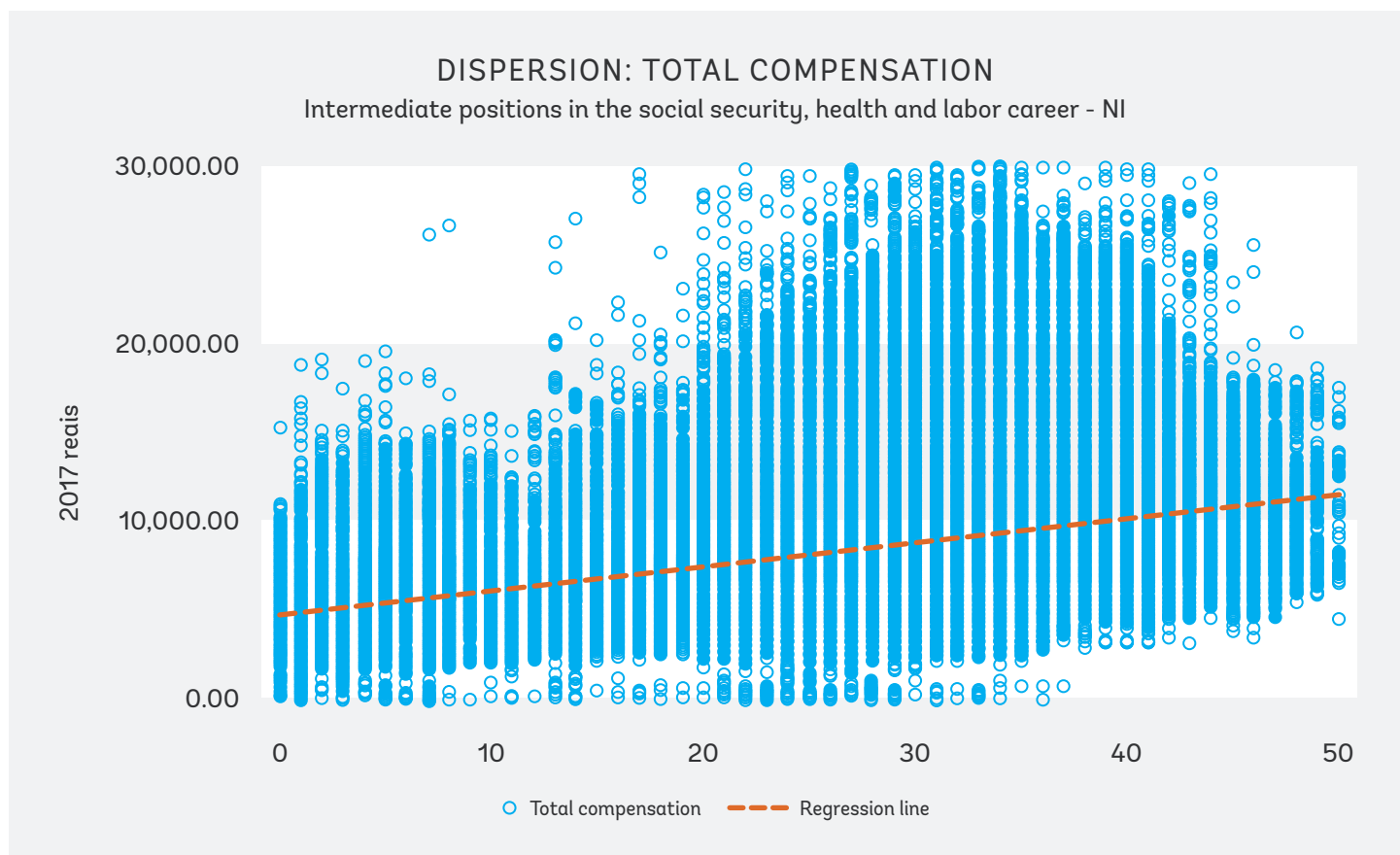
Source: Worldwide Bureaucracy Indicators based on ICP data, 2017.

**A high proportion of allowances can cause pay dispersion even between similar workers in similar jobs.** Brazil is a case in point. For example, in the Federal Social Security, Health, and Labor occupational group, gross pay can vary tenfold for workers with similar levels of experience, largely a result of non-performance related payments and not basic pay (Figure 15).<sup>39</sup> Many countries also have a high number of allowances or salary supplements. Often, these are at the discretion of a minister or agency head, and are often abused.

For example, it is common to pay public sector workers honoraria for attending board meetings and workshops, often paid in cash and charged to “goods and services” instead of the payroll, which can become a significant source of rents to those handing out the honoraria and create obvious perverse behavior. In Cameroon for example, these per diems for attending meetings were equivalent to civil servants’ base wages.<sup>40</sup>

> > >

**FIGURE 15 - Pay Inequity in the Brazilian Public Sector**



Source: World Bank 2020.

Note: Each dot is an employee; the horizontal axis is years of service; the vertical axis is wages.

**Pay inequity can be justifiable if the labor market requires it for the public sector to attract and retain talent.** Even if jobs across occupations have the same attributes and are graded similarly in the government pay scale, there may be higher demand for some jobs that require them to receive a higher wage than other jobs for which there is less demand in the private sector. For example, there is a high demand for doctors and nurses in the European Union member states which implies that these medical staff may need to be paid higher than, say, equivalently graded police officers in order to ensure that they remain in government service. There should be a clear empirical justification for this job specific premium so that the inequity it creates is not demotivating for other staff.

39. World Bank (2020a).

40. World Bank (2018).

**FIGURE 16 - Gender Inequity in Wages in the Public Sector**

Source: Worldwide Bureaucracy Indicators, World Development Indicators, latest observations per country (multiple years).

**Women earn less than men for doing the same work.** While the public sector has more gender-equal pay than the private sector, there remains a gender pay gap. Globally, women’s average wages are 88 percent of male wages in the public sector, as compared to 74 percent of male wages in the private sector. There is, predictably, considerable variation across countries on female-mean average wage ratios, though interestingly wage inequity persists in the higher income countries (Figure 16, top panel). One reason, as discussed, for the gender pay gap is occupational differences with women under-represented in senior positions. For example, in the state of Parana in Brazil, while women account for more than 60 percent of tenured employees across government, they occupy only 39 percent of leadership positions.<sup>41</sup> The wage gap however, persists even after controlling for occupations and worker characteristics like age and education. For example, women working in public administration, education, and health sectors have a wage penalty compared to similarly

qualified men (Figure 16, bottom panel). This gender pay gap for similar workers in similar jobs may be the outcome of differential access to allowances and salary supplements, different opportunities for promotion within an occupation, and the impact of differential norms on family care responsibilities.

**Quantifying these aspects of wage inequity requires an assessment of the public sector compensation structure.** A review of the salary legislation and pay grading structure, supplemented with the analysis of micro-level payroll data (i.e., anonymized individual salary records) can provide a complete picture of whether there is generally “equal pay for equal work” and coherence in compensation across the public sector. It can also clarify whether wage inequity is justifiable in certain cases and a necessary tradeoff to improve wage competitiveness for skills that are in high demand in the labor market.

### GUIDANCE QUESTIONS FOR THE ASSESSMENT

1. Is there “equal pay for equal work”? Do workers in similar jobs with similar skills get similar wages? Answering this question requires an assessment of the public sector salary structure.
2. Is there gender equality in pay in aggregate and across major occupations? Does government have a policy to address gender inequity?
3. What are the sources of wage inequity? Are pay relativities in salary scales derived from robust job evaluations? Are there discretionary elements of pay, such as cash payments or allowances?
4. Is there a justifiable tradeoff between wage inequity and wage competitiveness in order to attract high-demand talent while maintaining general coherence of pay across the public sector?

### KEY INDICATORS

Indicator	Description	Data Sources
Public sector pay compression ratio	Ratio of the 90th to 10th percentile of wages, which provides an estimate of wage dispersion.	WWBI; labor forces surveys; administrative data; review of salary legislation
Relative wages between different occupations	Provides an estimate of pay equity given the different responsibilities and demands of different jobs.	WWBI; administrative data; review of salary legislation
Within-occupation public sector pay dispersion	Provides estimates of wage differences controlling for occupational groups and worker characteristics.	Administrative data; review of salary legislation

41. World Bank staff assessment based on government administrative data.

Indicator	Description	Data Sources
Female-male wage ratio (public vs private sector)	Measures the raw wage difference between men and women.	WWBI; labor forces surveys
Gender wage premium	Measures the wage differences between men and women controlling for occupations and observable worker characteristics.	WWBI; labor forces surveys

## 3.6 Wage Incentives

**The extent to which wage increases are explicitly linked to performance is important for employee motivation and public sector productivity.** There is increasing rigorous evidence that unconditional salary increases have, unsurprisingly, no impact on staff performance. In Indonesia, for example, a doubling of teacher salaries had no effects on improving student learning outcomes.<sup>42</sup> The two main channels for wage growth that can potentially be conditioned on performance are pay progression linked to promotions, and annual bonuses or pay increments tied to the achievement of yearly goals. Both are dependent on the extent to which competencies and performance inform promotion decisions and performance pay, which in turn, depends on how objectively performance can be measured and the effectiveness of the broader human resource management processes. While these personnel management aspects are likely beyond the scope of employment and compensation assessments, what can be explored are some key stylized facts that can provide suggestive evidence of the productivity and fiscal implications of pay incentives. These include: the magnitude of promotion-based and seniority-based annual wage increases; the expected wage increases over a representative employee's career; and the coverage and key design features of performance bonuses.

**Seniority-based promotions and significant annual within-grade pay increases in many public sector bureaucracies weaken pay incentive effects.** Useful indicators of this problem are the percentage of staff undergoing annual performance appraisals and the percentage of staff that receive the highest performance ratings. In Liberia, for example, only 30 percent of civil servants surveyed by the World Bank stated that their manager had conducted their performance evaluation in the

past year; and in Romania 95 percent of staff self-reported receiving the highest rating in their annual evaluation.<sup>43</sup> These high performance ratings are ubiquitous in bureaucracies, though they do not rule out that promotion decisions may still reflect merit and be based on other sources of information than the annual performance evaluation. Many civil services pay scales have substantial automatic annual pay increases which are fiscally costly, limit governments' flexibility to respond to fiscal constraints, and have no incentives for performance. In Brazil, for example, generous automatic annual pay increases imply that most staff can more than double their real wages after 10 years of service.<sup>44</sup>

**An opposite and similarly pervasive problem arises from flat hierarchies and limited promotion opportunities.** In some countries, public servants quickly progress to higher grades and then exhaust any opportunities for further promotion. In Romania, for example, 70 percent of civil servants had reached the highest technical grades and were ineligible for promotion.<sup>45</sup> Limited promotion is common in teaching and healthcare, in part because of the specialized nature of the job. For example, in Bangladesh less than 10 percent of teachers were promoted to a higher position in their careers, and almost no teachers were able to double their salaries over a 30-year career in many African countries.<sup>46</sup>

**Performance bonuses can be an important incentive for jobs that have more easily measurable outputs.** Performance bonuses are quite rare in low and middle-income countries and face a variety of design and implementation problems when applied. By contrast, two-thirds of OECD countries have some form of performance pay for their public sector. Performance-related pay in the public sector is a

42. De Rhee et al (2017)

43. From World Bank surveys of public sector employees.

44. World Bank (2020a).

45. World Bank (2019).

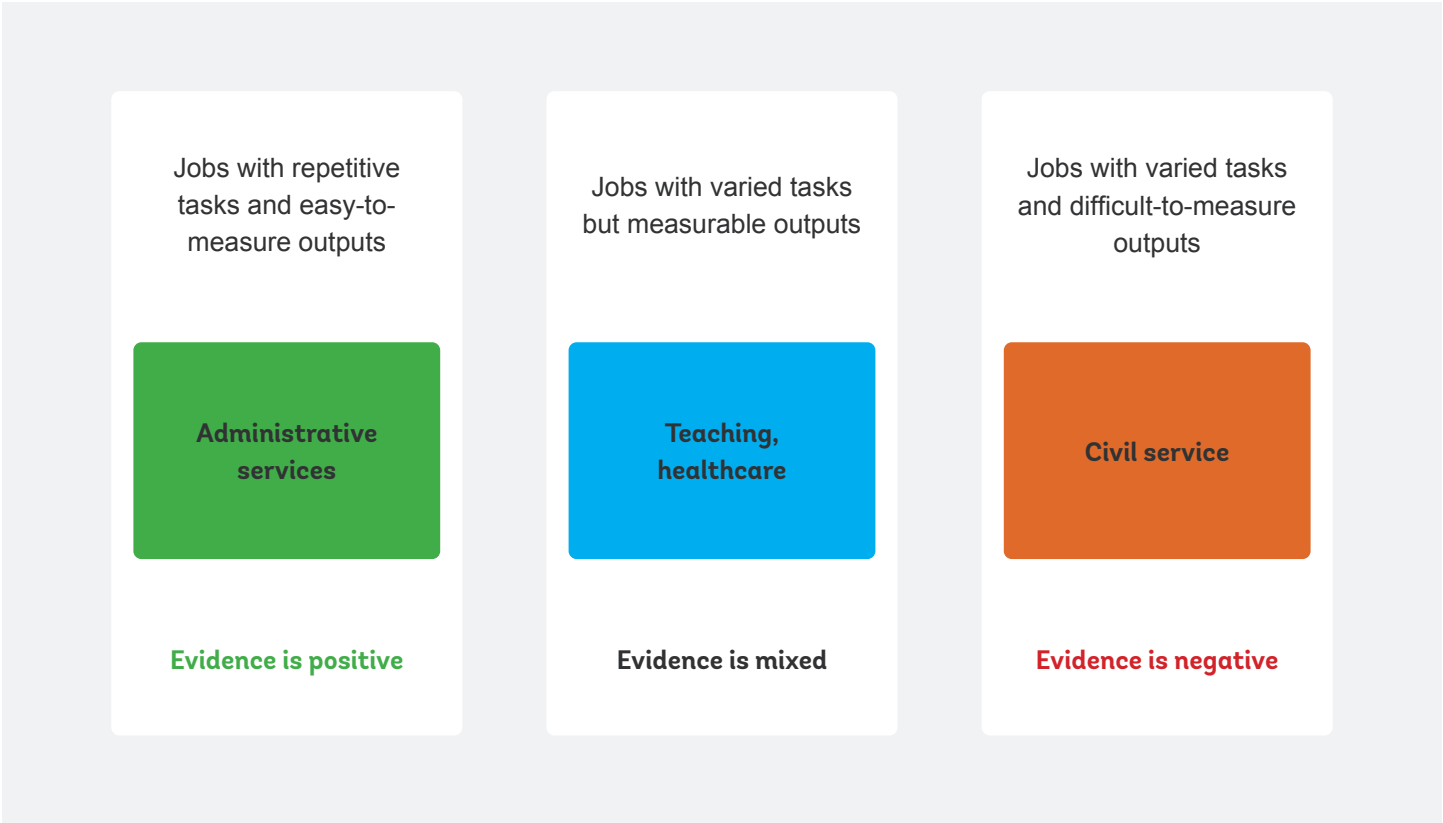
46. Evans and Yuan (2018).

controversial topic given the difficulties in measuring outputs, the multi-dimensional nature of work where measuring some activities can incentivize workers to ignore the unmeasured tasks, and risks of favoritism and pay inequity that can result in the absence of objective performance measures.<sup>47</sup> It is also an area of considerable academic research and the available evidence shows that performance incentives can improve productivity for tasks with standardized delivery processes and relatively easily measurable outputs. These include processing of welfare payments, licensing and registration, tax and customs administration and, more controversially, education and health. Figure 17 below summarizes the evidence from rigorous studies. Performance pay for senior civil servants can also complement measures to improve organizational performance management and results-based budgeting.<sup>48</sup>

**The design features of performance pay schemes that have direct wage bill and productivity implications irrespective**

**are the proportion of public sector staff eligible for receiving the incentive, the probability of receiving the incentive, and the size of the incentive.** Universal performance-pay schemes that do not factor the different attributes of jobs, especially the measurability of outputs, are likely to be costlier with unclear productivity impacts than targeted schemes. If all staff receive the performance bonus, as has been common in many countries, then the incentive disappears, and the bonus becomes just another salary supplement that staff are guaranteed to receive irrespective of performance. In the Brazilian federal government, for example, two-thirds of the occupational groups have a performance bonus scheme, and over 90 percent of staff in each of these groups received the incentive.<sup>49</sup> In some countries, such as the Philippines, there is a mandated distribution of rankings so that only a subset of staff are eligible for the reward. Also, if the performance incentive is too small, it will likely have no impact, but if it is too big it can create incentives for cheating or tensions between staff because of the high stakes involved.

> > >  
**FIGURE 17 - Summarizing the Evidence on Performance-Related Pay**



Source: Hasnain et al (2014).

47. Hasnain et al. (2014).  
48. World Bank (2014)  
49. Ibid.



**Another important type of wage incentive is additional payments to encourage health workers, teachers, and administrators to serve in rural areas or hardship locations, particularly in large and sparsely populated countries.** Living conditions are often difficult in rural locations and a small, but growing, body of experimental literature shows that higher salaries can help address these constraints and improve the recruitment and retention of employees in remote areas.<sup>50</sup> The size of the incentive though, needs to be

large and financial incentives alone are usually not enough of an incentive and need to be combined with non-financial and career incentives to work.<sup>51</sup> From a wage bill management perspective what is important is that financial incentives be targeted to essential workers that are scarce in particular localities, and to demographic groups, like younger doctors and nurses, who may be more willing to serve in hardship locations and would require lower incentive payments to compensate for opportunity costs.

## GUIDANCE QUESTIONS FOR THE ASSESSMENT

1. What wage growth is typical for public sector employees in different occupational groups over the course of their career? How of much of this wage growth is dependent on promotions and how much can occur “within grade”?
2. Does the annual performance management system distinguish between high and low performers? Are promotion decisions largely seniority based and/or automatic?
3. Are there performance bonus schemes and if so what occupation groups and percentage of the staff receive them; and how large is the bonus that staff are expected to receive?
4. Is there targeted, significant additional pay for essential workers to serve in hard-to-staff locations such as rural areas?

## KEY INDICATORS

Indicator	Description	Data Sources
Percentage of staff receiving the highest performance evaluations	Indicator of the robustness of performance-based promotions and performance bonuses.	Administrative data
The size of annual, within-grade pay increases	Measures the importance of seniority vis-à-vis performance for wage increases.	Administrative data; Salary legislation
Percentage of staff receiving a performance bonus	An indicator of whether performance bonuses are regular salary supplements or distinguish between good and poor performers.	Administrative data
The size of the performance bonus as a percentage of basic pay	An indicator of the magnitude of the incentive.	Administrative data; Salary legislation
The size of rural or hardship allowance and percentage of staff receiving it	An indicator of the magnitude of the incentive.	Administrative data; Salary legislation

50. Chelwa et al (2018).

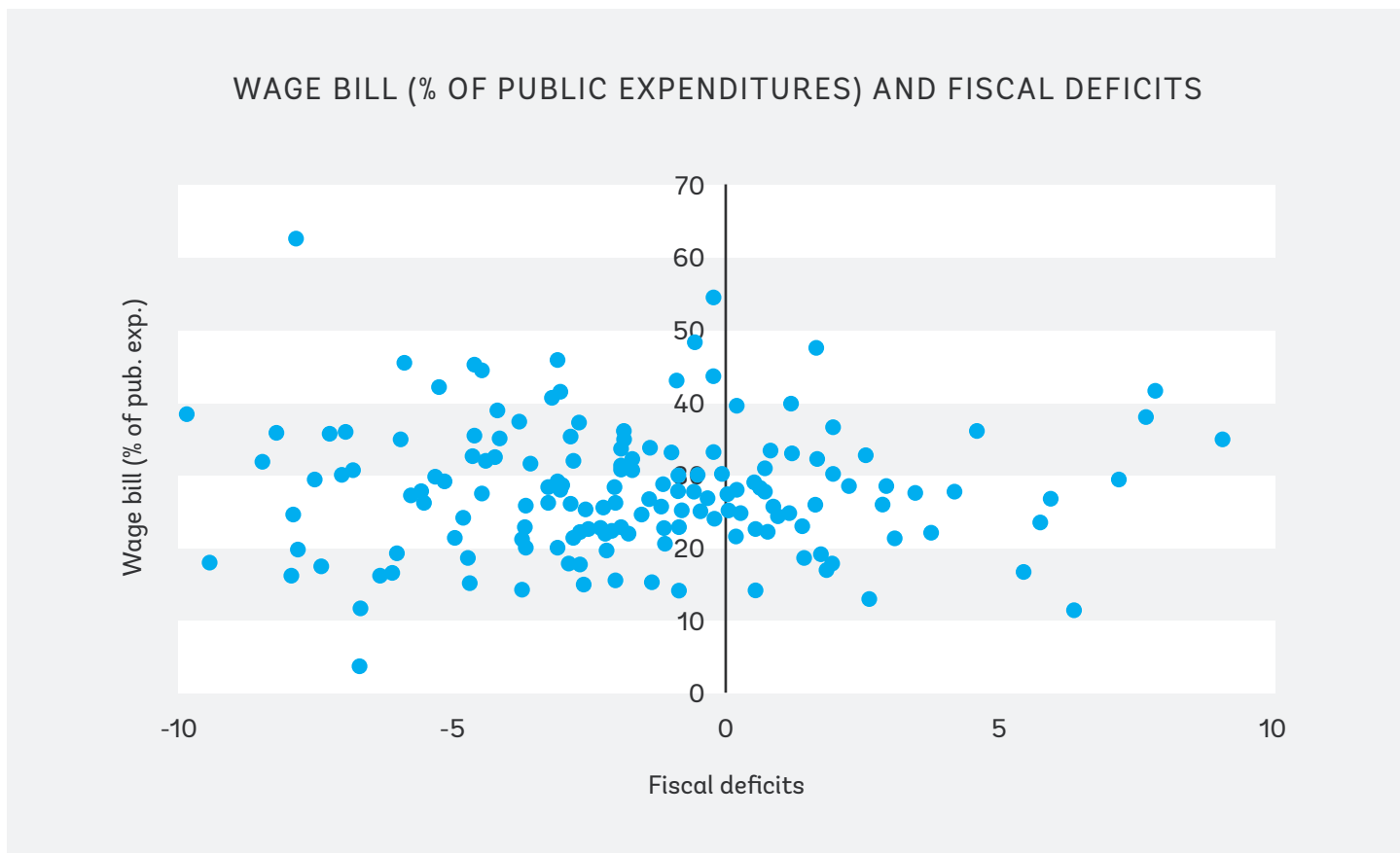
51. Bhatti and McDonald (2019).



# Measuring Impact

## 4.1 Fiscal Sustainability

**The wage bill can potentially have a major effect on fiscal balances, but there are no simple benchmarks for the “right” size of the wage bill.** The most used metric for estimating the size of the wage bill, the wage bill as a share of GDP, is not a good indicator of fiscal impact given the cross-national heterogeneity in government functions, scope, and size. While the global wage bill is approximately nine percent of GDP, it is incorrect to conclude that countries with wage bills below this number, or below some other average for comparable countries, have more fiscally sustainable wage bills than countries with higher averages. Cross-nationally, there is no correlation between the size of the wage bill, either as a share of GDP or expenditures, and fiscal balances (Figure 18). For example, Denmark has one of the highest wage bills in the world at over 17 percent of GDP, but has generally achieved budgetary surpluses. A better measure is the wage bill as a share of expenditures and revenues, but even here there is weak correlation with fiscal deficits.

**FIGURE 18 - There Is No Strong Correlation between the Size of the Wage Bill and Fiscal Balances**

Source: Worldwide Bureaucracy Indicators, IMF World Economic Outlook, latest observations per country (multiple years).

**Wage bill dynamics within countries are a better predictor of fiscal unsustainability, though the evidence is limited.** There are only a few studies that have explored the relationships between the wage bill, fiscal balances, and non-wage expenditures.<sup>52</sup> These find that increases in wage bill tend to worsen fiscal balances, and wage expenditures are procyclical, rising during periods of economic growth, but not falling as much during downturns due to structural rigidities. One study of 137 countries found that a one percentage point increase in wage-bill-to-GDP was associated with a 0.5 percentage point deterioration in fiscal balances.<sup>53</sup> Another study on the European countries found a similar pattern, where a one percentage point increase in the wage bill as a share of GDP correlates with an increase in the fiscal deficit of half a percentage point.<sup>54</sup> These studies also find that fiscal deterioration is less in high income countries, which that are more likely to finance wage bill increases by increasing revenues and reducing other categories of expenditures, in

contrast to low- and middle-income countries that tend to finance it by increasing deficits.

#### **The sources of wage bill growth vary across countries.**

An IMF review of 20 case studies revealed that the drivers can be increases in wages (Latvia, Moldova, Romania, and South Africa), expansion in government employment (El Salvador and Portugal), or a combination of the two (Kenya and Tunisia).<sup>55</sup> Sometimes, the growth is driven by increases in allowances and non-transparent salary supplements as a back-door means to increase salaries after a period of fiscal consolidation, as was the case in Cameroon. Wage expenditures also have a built-in momentum since public sector salary scales have seniority-based pay increments that result in a natural rate of wage bill growth, even if employment is held steady and there are no across-the-board salary increases. The example of Brazil is indicative, where micro-level data allows for modeling scenarios that can decompose

52. IMF (2016); Eckhardt and Mills (2014); Dybczak and Garcia-Escribano (2019).

53. Dybczak, K. and M. Garcia-Escribano (2019).

54. Eckhardt and Mills (2014).

55. IMF (2016).

the effects of wage bill increases due to additional hiring from those due to staff moving up the pay scale with increasing years of service. In some Brazilian states, for example, the wage bill increases by over two percent in real terms annually, even when staffing levels are fixed and there is a one-to-one replacement of relatively higher paid retirees with relatively lower paid new hires, and annual nominal increases to the salary scale are limited to inflation.<sup>56</sup>

**The type of wage setting arrangements can have implications for fiscal sustainability.** Although the studies are limited, the tentative findings suggest that the risk of “fiscal drift” – an increase in wage bill and an increase in budget deficit – is positively correlated with union density, the percentage of public servants who are members of a union. Also, the chances of fiscal tightening – reductions in the wage bill and deficits – during an economic recession as well as during election years decrease with higher union density. Decentralized collective bargaining agreements, where sectoral unions negotiate with their respective counterpart

agencies, as opposed to centrally negotiated collective bargains with “peak unions” (representing unified smaller unions), likely have higher transaction costs and compromise wage bill planning and the ability of governments to reduce wage bills in the face of crises.

**Wage bill modelling is useful for estimating the risk of fiscal unsustainability and for quantifying the savings from different reform options.** Many governments have integrated human resource and payroll systems that they use for undertaking transactions, but which are also a vital, but often under-used, resource for wage bill planning. The micro-data from these systems can form the basis for simulations that estimate the fiscal impact of different scenarios, such as freezing salaries or decreasing the rates at which salaries are readjusted; reducing the size of annual pay progressions or increasing the time interval between them; reducing staff replacement rates, a hiring freeze; and reducing pay dispersion. Brazil is a good example of such collaboration between World Bank and the authorities (Box 2).

> > >

## BOX 2 - Brazil's Wage Bill Micro-Data Analytics

The World Bank gained access to vast amounts of individual level administrative data to analyze the Brazilian federal and state wage bills, showing its immediate impact on the country's fiscal outlook. For the federal government, the analysis revealed that:

- Lowering starting salaries of new hires by 10 percent (the federal civil servants receive almost double the wages of private workers with similar characteristics) could lead to savings of approximately R\$26.4 billion and reduce the annual wage bill growth from 2.9 percent to 1.02 percent of GDP.
- Adjusting the current replacement rate of 1.29 new employees for every retiree to 1:1 would generate savings of approximately R\$44 billion.
- Limiting salary increases to promotions for three years could have cumulative savings of approximately R\$187 billion by 2030; and limiting salary increases to promotions for three years and thereafter adjusting the value of other salary increases not related to promotions to inflation could yield savings of over R\$230 billion by 2030.

The World Bank's analysis received significant media attention because most of the debate used to revolve around anecdotal evidence as opposed to data. This attention focused on certain elements of the findings, in particular the average retirement age of public servants, the wage premium, and the automatic wage increases in the public sector. The Ministry of Economy is finalizing an administrative reform, which would require a constitutional amendment, that is informed by the World Bank report.

Source: World Bank (2020a).

56. WB staff calculations based on micro-level payroll data.

## GUIDANCE QUESTIONS FOR THE ASSESSMENT

1. What are the wage bill dynamics and how are changes in the wage bill being financed— i.e., through deficits, raising revenues, or reducing other expenditures?
2. What are the main drivers of wage bill growth?
3. What are the wage bill projections for baseline and different policy option scenarios based on wage bill modelling?

## KEY INDICATORS

Indicator	Description	Data Sources
Correlation between wage bill growth and fiscal balances	To measure wage bill dynamics and fiscal sustainability.	Budget data
Correlation between wage bill growth and changes in capital and non-wage recurrent expenditures	Provides an indication of whether the wage bill crowds out other spending.	Budget data
Decomposition of wage growth: employment and wages	To understand the sources of wage bill growth.	Administrative data

## 4.2 Public Sector Productivity

**A key question is whether the public sector workforce is performing well and delivering high quality infrastructure, services, and regulations, which is really a question of public sector labor productivity.** Productivity measures the efficiency with which inputs, like labor, are converted into outputs, and is a more precise and economically meaningful concept than “performance,” since presumably performance can be improved by spending more while productivity measures whether more is produced and delivered for a given wage bill. For public employment and compensation assessments, the main measure should be labor productivity, though a more commonly used metric in academic studies is total-factor productivity, which is the ratio of the currency-value

of outputs to the currency-value of all inputs. Productivity is difficult to estimate for the public sector, mainly because of the difficulty in defining and measuring government outputs, particularly for functions such as defense, foreign relations, and environmental protection, and for calculating prices for services for which there are no market transactions.

$$\text{Total Factor Productivity} = \frac{\text{Outputs}}{\text{All Inputs}}$$

$$\text{Labor Productivity} = \frac{\text{Outputs}}{\text{Expenditure on Labor}}$$

**Given these difficulties, a diversity of approaches that go beyond the textbook definitions of outputs necessarily must be used, but which nevertheless provide useful proxies for productivity.** These alternative measures can be distinguished into “macro” approaches, which provide information at the level of an organization, sector, or service as a whole; and “micro” approaches, which can be applied to the individual employee, task, project, and process (Table 1).<sup>57</sup> A common macro approach is to use service delivery outcome indicators per service delivery staff, which, given the high proportion of education and health personnel in the public sector, provides a reasonably comprehensive measure for a large segment of the public sector. These measures of productivity include standardized test scores in the education sector, such as the OECD’s Programme

for International Student Assessment (PISA), divided by sectoral wage expenditures, or the number of teachers for a measure of per-teacher productivity, mortality rates or vaccines administered per health worker; and health outputs like number of consultations or patients discharged per doctor or wage spending in the health sector. The use of outcome measures is not without its flaws as it typically includes factors that are beyond the control of the public organization or public official—for example, quality of support outside of school for test results, and lifestyle choices for mortality rates, family and housing conditions and other demand-side factors. Budget execution rates can be another useful indicator to measure the productivity of public administration employees across a variety of sectors and organizations, with the caveat that fast spending does not necessarily imply good spending.

> > >  
**TABLE 1 - Approaches to Measuring Public Sector Productivity**

Macro (Organization, Sector, Service)
Cost-weighted output (Atkinson, 2005)
Service delivery indicators
Budget execution rates
Micro (Employee, Task, Process)
Revenue collection
Procurement outcomes
Staff and user satisfaction
Subjective assessments (by employees, by stakeholders)
Independent observers (‘mystery shoppers’) and process productivity
The knowledge/capacity of public officials

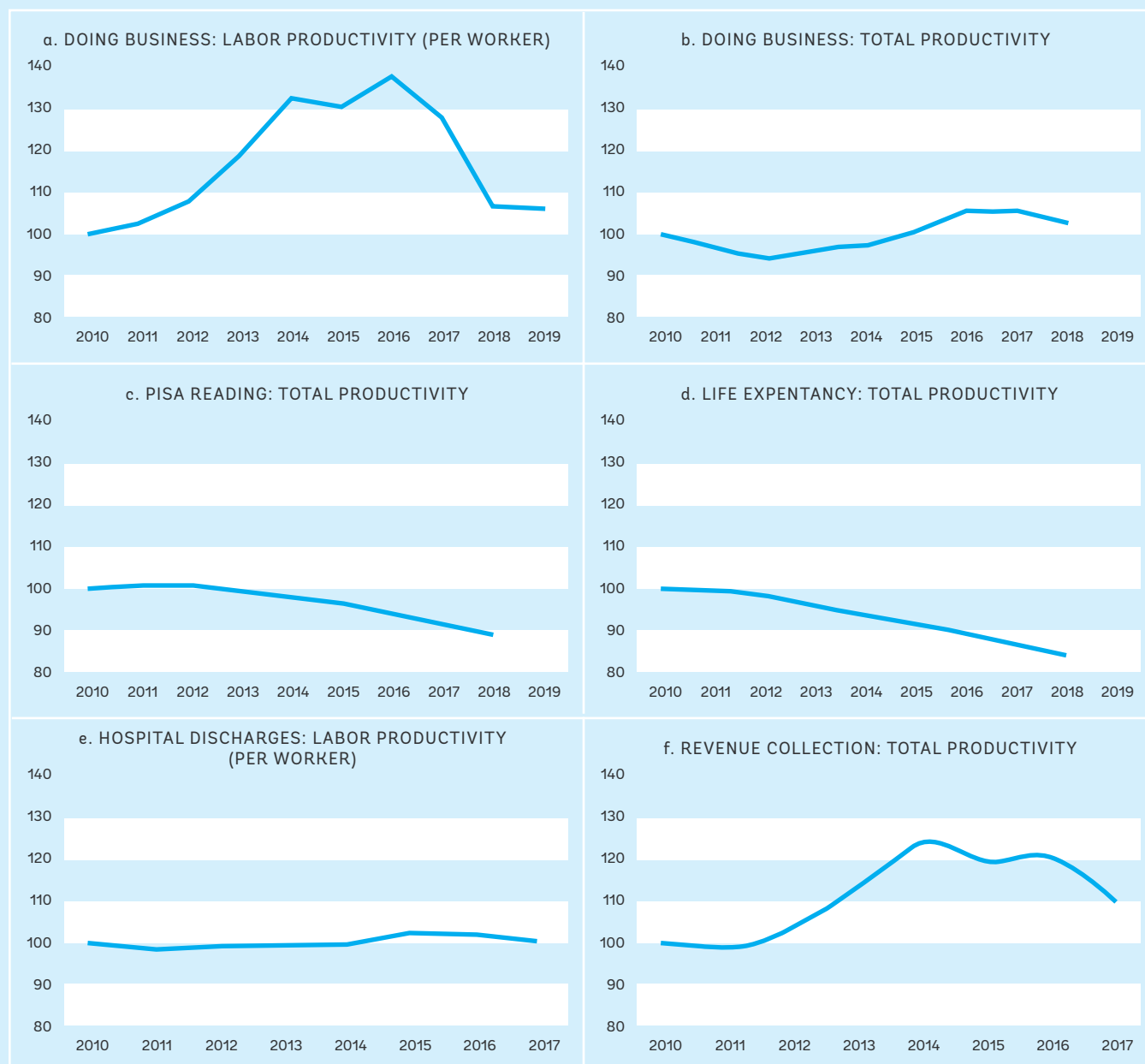
Source: Somani, 2021.

**Micro approaches can be a good complement by providing productivity estimates for large and important organizations like revenue and customs agencies, infrastructure agencies, and social security administrations.** Examples of outputs include revenue collection and tax audits conducted per revenue agency staff; project-completion rates for local public-infrastructure projects; organization-level road-construction-completion information; and individual employee-level case completion times in the social-security administration.<sup>58</sup> Box 3 provides an example of applying some of these macro and micro approaches in the European Union member states.

57. Somani (2021).  
58. Rasul and Rogger (2018).

### BOX 3 - Pay and Employment and Public Sector Productivity in the European Union

Below, we present trends in proxies of public-sector productivity for the EU as a whole, based on direct measures of public-sector output. We index the 2010 value at 100 and present the relative changes in the indicator over time.



The data is sourced from the World Bank's Doing Business Database, the OECD's PISA Database, and Eurostat. The top-left figure shows the trend in the Doing Business Score (DBS) divided by the total number of civil servants working in the central administration, as a proxy for labor productivity in the area of business regulation. The top-middle figure shows the DBS divided by government expenditure on general public services, as a proxy for total factor productivity in business regulation. The top-right figure shows PISA reading scores divided by expenditure on education; the bottom-left the life expectancy at birth expenditure on health; the bottom-middle hospital discharges over the number of hospital staff; and the bottom-right the ratio of government revenue to the number of civil servants in central public administration.



Bearing the caveats around such measures (presented above) in mind, these trends are still informative of important trends in the quality of public services in the EU, especially when the trends in outputs (numerators) and inputs (denominators) are analyzed separately. The evidence suggests a gain in productivity in business regulation; a decrease in total-factor productivity in social sectors, but evidence of a constant rate of labor productivity over the same period; and evidence of a substantial increase in revenue-collection productivity.

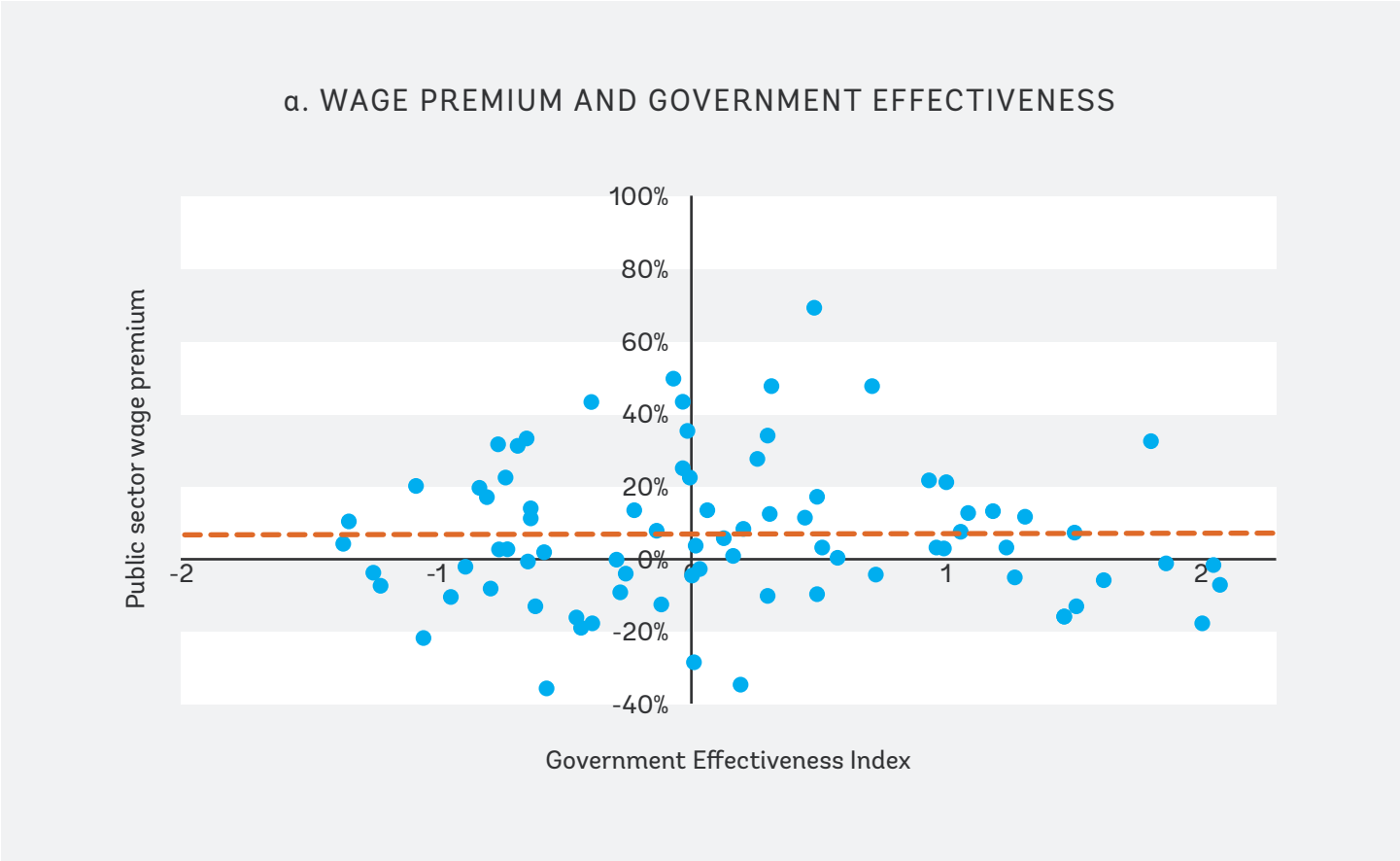
Source: WB staff calculations based on Eurostat, Doing Business, and PISA data.

**In the absence of productivity measures, public employment and compensation assessments can explore correlations between the wage bill and expert-based measures of institutional quality.** While we may expect better-paid public employees to be more motivated and less corrupt, or to have less of an incentive to supplement their salaries with bribes, cross-national estimates, using

the Worldwide Governance Indicators (WGI), reveal no clear relationship between the public sector wage premium and these measures of the quality of governance (Figure 19). In fact, some studies find that nepotism and corruption is higher in countries with large public sector wage premia, suggesting that the higher value of public sector jobs can create opportunities for rent-seeking in recruitment.<sup>59</sup>

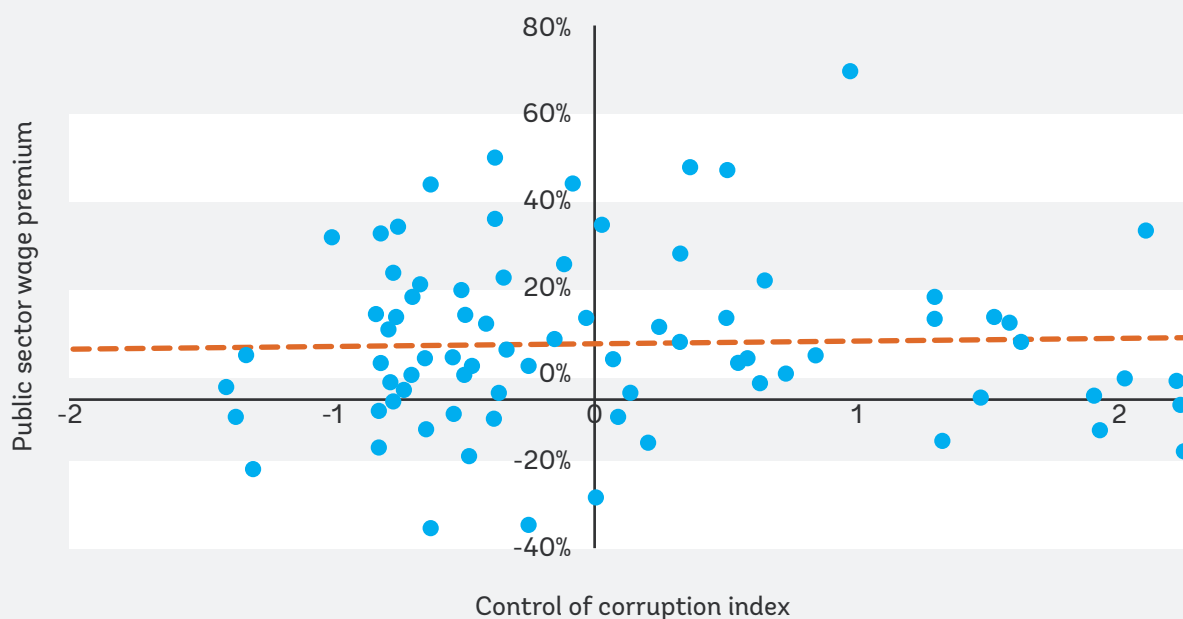
> > >

**FIGURE 19 - The Public Sector Wage Premium Is Not Correlated with Measures of Institutional Quality**



59. Rijkceghem and Weder (2001).

## b. WAGE PREMIUM AND CORRUPTION



Source: Worldwide Bureaucracy Indicators, World Governance Indicators, latest observations per country (multiple years).

### GUIDANCE QUESTIONS FOR THE ASSESSMENT

1. Is total labor expenditure in the sector, including staff wages, outsourced labor costs, and external consultancy fees, correlated with sector-specific improvements in public-sector outputs and outcomes, so that productivity measures are stable or increasing within sector over time?
2. Using subnational data, if available, are there any outliers in the current distribution of total labor expenditure, public-sector output measures, outcome measures, or measures of productivity? Are there any outliers in the trends of these subnational measures—for example, recent rapid growth or declines in a particular subnational entity)? What might be the underlying features explaining the existence of such outliers?
3. Are total labor expenditures and public sector wages correlated with measures of institutional quality over time? Measures of institutional quality include the Worldwide Governance Indicators, perceptions of the quality of governance through household surveys – such as Eurobarometer, Afrobarometer, or World Values Surveys – the OECD’s Government at a Glance Indicators, the Quality of Government Index, and the World Bank’s Doing Business Indicators. With household level data and any other subnational data on measures of institutional quality, are there any outliers across subnational entities in the current distribution of institutional quality or outliers in the trends of measures of institutional quality?

## KEY INDICATORS

Indicator	Description	Data Sources
Correlation between wage-bill growth and public-sector outputs and outcomes.	To measure trends in public-sector productivity and the impacts of wage-bill expenditure on desired outputs/ outcomes.	Budget data (wage-bill growth).  Administrative data; for example, agency annual reports, and statistics agencies for outputs and outcomes.

### 4.3 Labor Allocation between the Public and Private Sectors

**Public sector employment and compensation policies can have major impacts on the entire labor market, particularly in low- and middle-income countries where the public sector is the dominant formal sector employer.**

As noted earlier, globally, the public sector accounts for 38 percent of formal employment, reaching almost 50 percent for low-income and lower-middle and countries. This large labor market presence, combined with public sector wage premia and job security, can lead to unemployment, particularly for fresh university graduates who queue for public sector entry-level job openings and reject private sector job offers. There

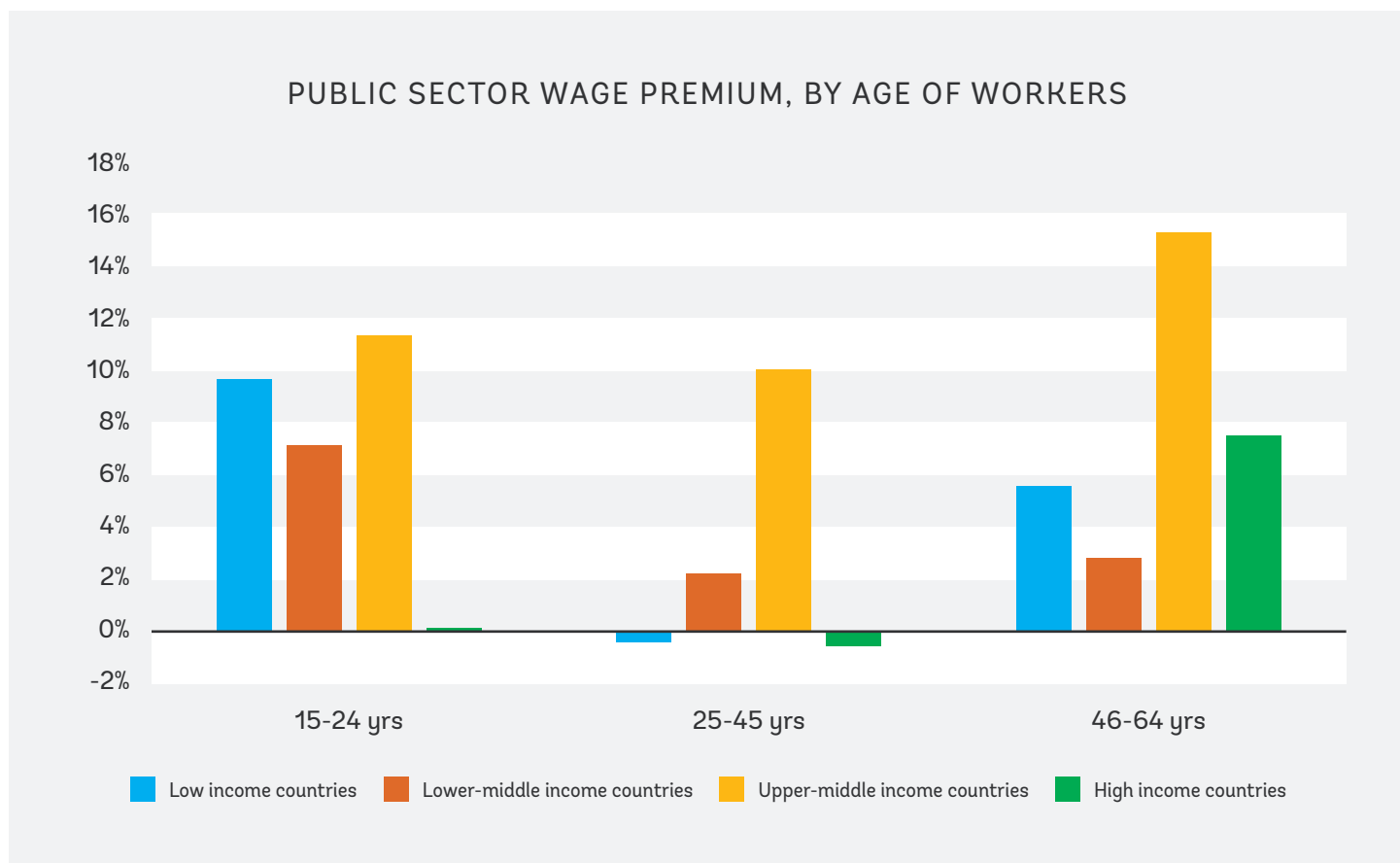
is much anecdotal evidence from even high-income countries of thousands of people applying for a few public sector vacancies.<sup>60</sup> In many contexts affected by fragility, conflict, and violence (FCV), there may be few formal sector alternatives to public sector employment, and a major challenge is how to gradually relax this social role of the state in employment to enable the private sector to grow. Box 4 provides an example of these labor market effects of public sector employment and compensation in Ethiopia; similar conclusions have been drawn based on research on the Colombian and West African labor markets.<sup>61</sup>



60. Garibaldi and Gomes (Forthcoming).

61. See Albrecht et al. (2018) for Colombia; and Girsberger and Meango (2018) for West Africa.

**FIGURE 20 - Younger Public Sector Workers in Low and Lower-Middle Income Countries Have a Higher Wage Premium**



Source: Worldwide Bureaucracy Indicators, latest observations per country (multiple years).

**Analyzing these labor market effects is technically complicated, but assessments can explore a few stylized facts that can give an indication of these impacts.** Given that public sector turnover is low, and vacancies are more likely to occur for entry-level positions, the public-private wage gap by age can provide evidence as to whether public sector wages are driving youth unemployment. Cross-nationally, we find that the youngest cohort of public sector workers in low- and lower-middle income countries – those in the 15 to 24 age group – have a higher wage premium compared to

older cohorts, which suggests that the distortionary effects of relatively high public sector wages are more pronounced for the youth. Figure 20 shows the data compared to formal sector private workers. Government administrative data can also be used to analyze these impacts by measuring the number of applications per job opening, with inordinately high numbers also suggestive of these distortions. Complementary data from investment climate assessments or enterprise surveys can be used to assess whether there are skills shortages in the private sector.

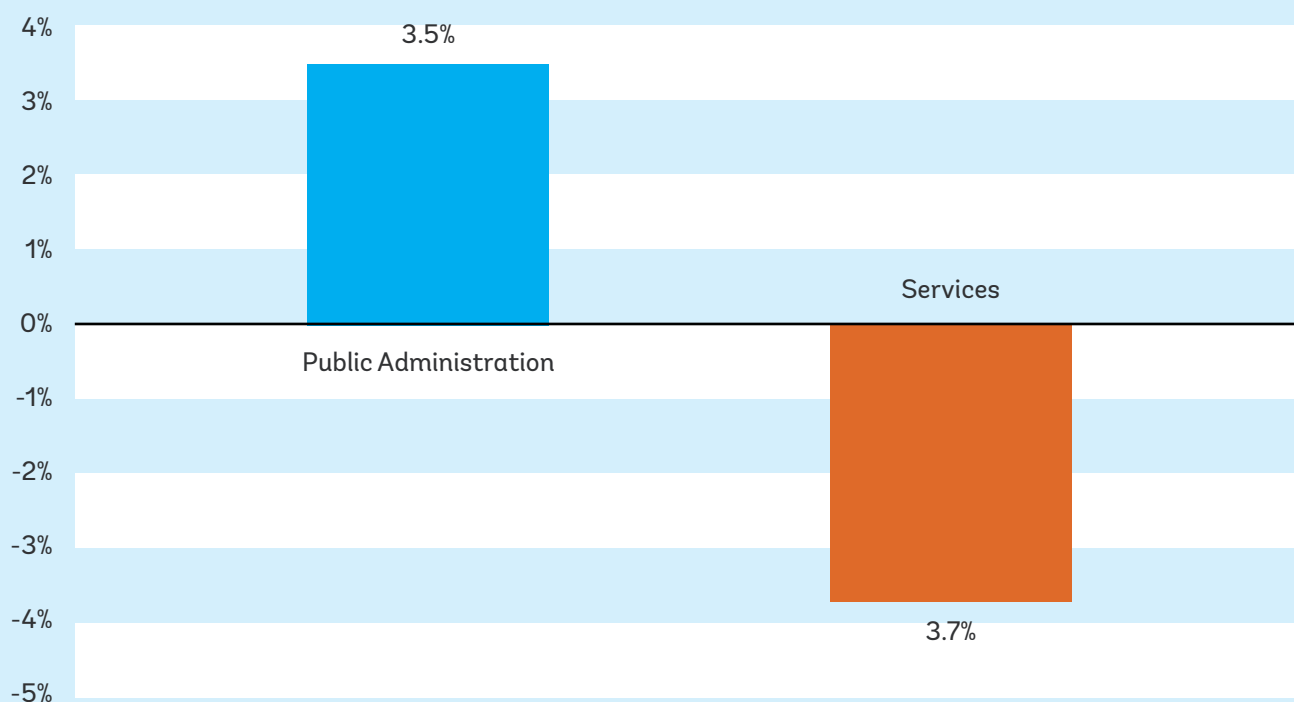
## BOX 4 - Public Sector Wages and the Labor Market in Ethiopia

The public sector is a highly attractive employment prospect in the Ethiopian labor market and favored towards those with a tertiary level of education. Wages are 50 percent higher in public administration than in services, the second best-paid industry, and individuals working in public administration are three times more likely to have a tertiary education than those working in services, the second-highest.

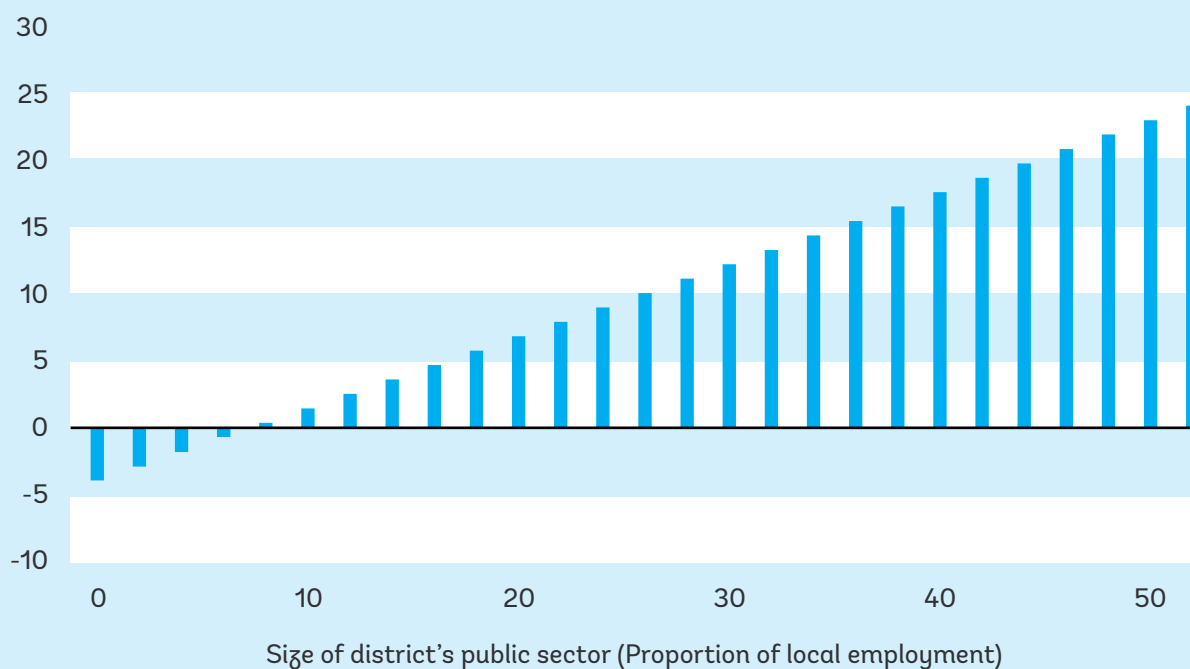
As a result of this large wage premium, as opportunities to access tertiary education grew (through an expansion in local public universities), many individuals left the private sector, mainly from service-based jobs, to search for public employment (see top figure among those shown below). Furthermore, it was only in localities where the public sector was a relatively larger employer, improving the chances of landing a public-sector job, and where the public-sector wage premium was larger (making it more attractive to join the public sector, and hence to undertake a tertiary education in the first place) where individuals chose to enter higher education after a local university was established (bottom figures, left and right, respectively). For example, in localities where the public sector accounted for 50 percent of local employment, tertiary education attainment increased by almost 25 percentage points when a new public university was established. Tertiary education attainment increased much less in districts where the public sector was a smaller employer. Similarly, in districts where the public sector paid double the private sector, local tertiary education attainment increased by 13 percentage points, but much less in areas where the public sector was less lucrative.

Together, this provides evidence that the number and wages of public-sector jobs impact: (i) education decisions—the types of skills and human capital in an economy; and (ii) private-sector labor supply.

### α. ESTIMATED EFFECTS ON EMPLOYMENT

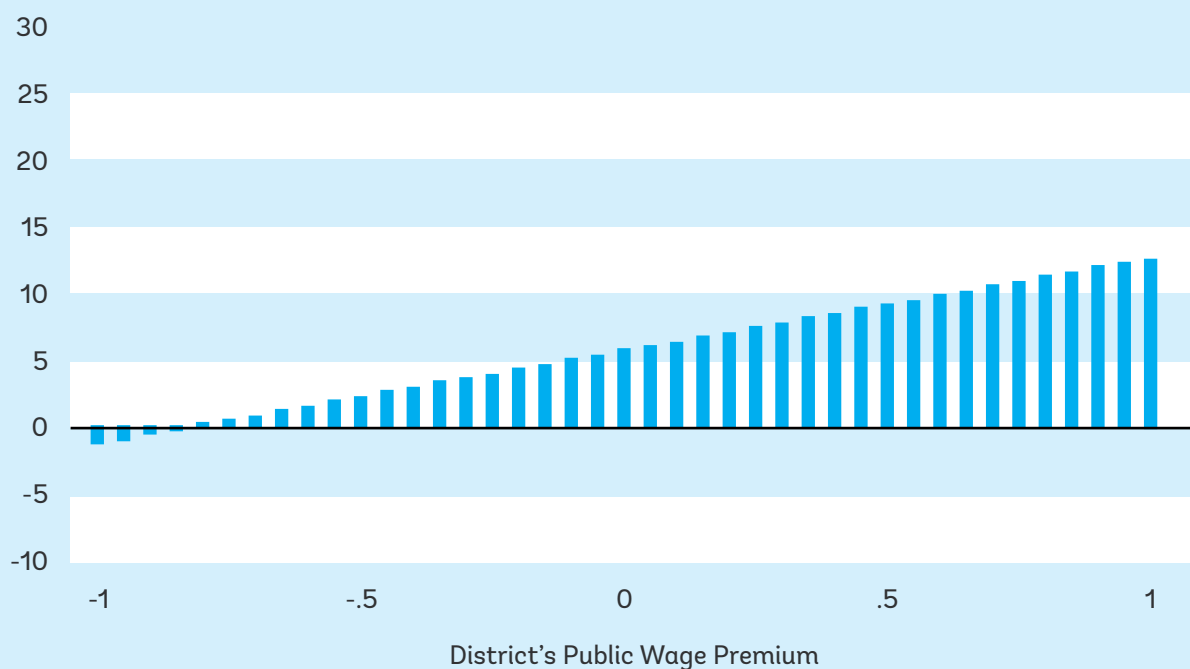


## b. PERCENTAGE INCREASE IN DISTRICT'S TERTIARY EDUCATION ATTAINMENT BY SIZE OF LOCAL PUBLIC SECTOR



Public wage premium: -1 = wages are twice as high in private sector;  
1 = wages are twice as high in public sector

## c. PERCENTAGE INCREASE IN DISTRICT'S TERTIARY EDUCATION ATTAINMENT BY PUBLIC WAGE PREMIUM



Public wage premium: -1 = wages are twice as high in private sector;  
1 = wages are twice as high in public sector

Source: Somani (Forthcoming).

## GUIDANCE QUESTIONS FOR THE ASSESSMENT

1. Is the public sector crowding out the labor market, impeding private-sector job growth for specific skills, occupation, demographic, and geographical groups?
2. Is the public sector having a distortionary impact on younger cohorts, particularly fresh university graduates, causing them to queue for public sector jobs and reject private sector jobs?

## KEY INDICATORS

Indicator	Description	Data Sources
Public sector wage premium by age cohorts	Provides an indicator of relative supply of young workers to the public and private sectors.	WWBI; labor force surveys
Number of applications per position (for a sample of positions)	Provides an indicator of queuing for public sector jobs.	Administrative data
Correlation between public-sector employment growth or recruitment patterns and private-sector employment growth or recruitment patterns (by skill, demographic, occupation, and geographical groups)	To identify whether public-sector employment or labor demand is crowding out private-sector labor demand or job growth (and the most-affected groups).	WWBI; labor force surveys; administrative data
Trends in educational profiles of public-sector workers relative to private-sector workers (by demographic, occupation, and geographical groups)	To understand trends in the skills and skill demands of the public sector relative to the private sector (the public-sector education premium) and whether specific skill groups are increasingly drawn to or away from the public sector.	WWBI; labor force surveys
Correlation between public-sector wage premium and relative employment growth in the public sector (by skill, demographic, occupation, and geographical groups)	To understand how the public-sector wage premium is impacting labor supply to the public and private sectors.	WWBI; labor force surveys
Skills shortages in the private sector (from firm surveys)	To understand if skills shortages are a constraint for the private sector.	Enterprise surveys and Investment Climate Assessments





## Conclusion

This paper has aimed to provide a comprehensive framework for conducting public sector employment and compensation assessments to help develop evidence-based answers to three policy questions that governments care about: how can employment and compensation policies (i) contribute to sound fiscal management, (ii) increase public sector productivity, (iii) and improve the competitiveness of labor markets and help grow jobs? The importance of these policy questions will vary by country context. Most governments pay more attention to their wage and employment policies in times of fiscal distress and, therefore, the fiscal sustainability impacts are likely to remain paramount in such assessments. What this paper has emphasized is the importance of a holistic approach since the wage bill is qualitatively different from other government expenditures and other inputs in the government production function, and assessments need to also explore the productivity and labor market impacts. Understanding all these dimensions are necessary for a rigorous diagnostic and for identifying feasible yet meaningful reforms.

**Political economy factors are a major reason why pay and employment reforms are difficult, but these have been discussed only briefly in this paper.** With some exceptions, such as on the political cycle in hiring, the assessment framework is largely technical, mainly because political economy factors are country specific and difficult to identify and standardize in a set of diagnostic questions. Political economy factors though are paramount, either explicitly so, as in the role of trade unions, or implicitly as in most countries public sector employees are a powerful stakeholder and have a significant voice in what reforms are on or off the table. The country-specific applications of the framework will need to enrich the technical analysis with the underlying political economy factors that result in the status quo practices, and what reforms are politically feasible or require a change in the political equilibrium to be implemented.

**The data needs are challenging, but these assessments can be an impetus for governments to invest in better**

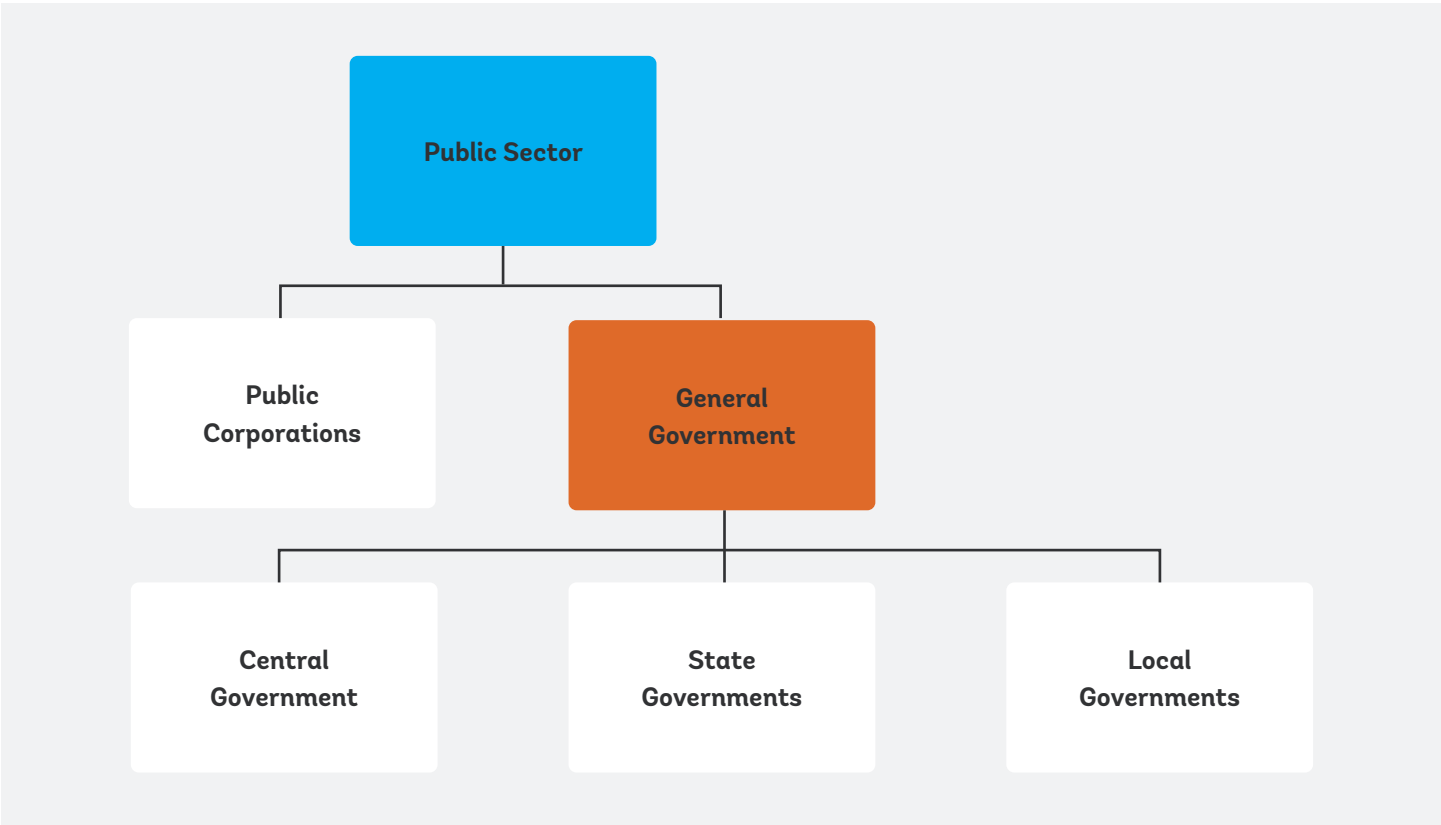
**data and to better use the data that they do collect.** Sometimes, robust data are not available but more often the data that is available is not used. The WWBI provides robust cross-national data, but there are gaps in country coverage due either to the absence of labor force surveys or restrictions in their use for research and policy purposes. Assessments can be used to advocate for improving national statistical capacity or for making the data collected publicly available with appropriate safeguards to protect sensitive individual data and abide by international data privacy standards. Many governments have invested heavily in payroll and human resource management information systems, often with World Bank and development partner support, but use these systems largely for conducting transactions rather than as a basis for informing policies. These administrative systems provide a rich source of data and can help governments devise the flexible and targeted reforms that are needed, and to monitor the impact of these reforms.



# Annex 1. Definitions and Data Sources

This report uses the standard definitions of the “general government” and “public sector” in the analysis of the six employment and compensation practices and their impacts. As the figure below depicts, the general government are all institutional units controlled directly, or indirectly, by central and subnational governments, and includes the wage bill of all workers employed by these units—for example, public administrators, service delivery personnel, military and security personnel). The public sector is general government plus public- or state-owned corporations. This conceptual distinction between the public sector and general government is purely to clarify concepts and in no way implies that responsibilities for employment and compensation policies so neatly divided in countries.

While limiting the analysis to the general government is likely appropriate and sufficient for most diagnostic assessments, in some countries the broader consideration of the public sector may be necessary, if there is a large state-owned enterprise sector that has significant claims on the general government budget, and these public corporations can have claims on the central, state, or local governments. Moreover, many household and labor force surveys do not allow for an accurate disaggregation between general government and public enterprises and, therefore, much of the analysis, particularly public-private comparisons, requires the broader definition of the public sector.



Source: Authors.

The main data source used for cross-national analysis is the [Worldwide Bureaucracy Indicators](#) (WWBI). The objective of the WWBI is to provide comprehensive, cross-national data on public sector employment and compensation to better enable researchers, development practitioners, and policymakers identify and implement evidenced-based reforms. The WWBI country-level indicators are constructed from nationally representative household surveys that are designed and implemented by national statistical agencies. The WWBI are based on microdata from 909 labor force and household welfare surveys, which translates to 53 million unique survey observations, and consist of 112,919 estimations across 192 indicators for 202 countries and territories between 2000 and 2018.

The WWBI encompass five categories of variables:

1. The size and demographics of the public and private sector workforces (107 indicators).
2. Public sector wage premiums (39 indicators).
3. Relative wages within the public sector (35 indicators).
4. Gender pay gaps (9 indicators).
5. The public sector wage bill (2 indicators).

The demographics of public and private employment track key characteristics, including the size of the public sector workforce in absolute and relative numbers, their age, and distributions across gender, rural and urban locations, academic qualifications, wage quintiles, industry categories and occupational groups. The indicators on public sector wage premiums capture the overall competitiveness of public sector wages (compared to the private sector) as well as the decomposed public-private wage differentials by gender, academic qualifications, industry category and occupation groups. Indicators on pay compression ratios present the relative wages of the top and bottom earners in the public and private sectors, the ratios of wages for employees of

occupational categories in the public and private sector, the relative wages of key occupations within the public sector, and the cross-country comparisons of the compensations of public sector workers by occupations. Indicators on gender pay gap compare the wages of females to their male colleagues in the public and private sectors as well as by industry of employment. Indicators on the relative size of the wage bill offer a glimpse into the structure and affordability of the public sector within the larger economy.

The wage data in the WWBI denote the income associated with the occupation of employment used in the analysis (which the individual dedicated most of their time in the week preceding the survey) and excludes both bonuses, allowances, and other in-cash/-kind payments from the same job as well as all additional sources of income (from other jobs) or investments and transfers. Due to the almost complete lack of information on taxes, the wage from primary job is not net of taxes. For all those with self-employment or owners of businesses, this corresponds to net revenues (net of all costs excluding taxes) or the amount of salary withdrawn from the business.





## **Annex 2. Streamlined Assessment for Poor Data Country Contexts**

This report has emphasized the advantages of using well-designed, nationally representative surveys of individuals in the labor force to assess public sector employment and compensation policies and their impact on productivity, labor allocation, and fiscal sustainability. However, the heterogeneous distribution of capacity within national statistical offices to collect this information may impact its usability in a wage bill assessment. Therefore, this section lays out a more limited approach for use in data-constraint environments, utilizing the same micro-foundations as the framework presented in the report.

The structure of the assessment remains unchanged, focusing on six core dimensions of pay and employment practices and their three impacts, with the same set of guidance questions

detailed in the report. The streamlined approach requires less data for the key indicators to help answer the guidance questions, including only for a few, critical organizations, and jurisdictions in cases where a complete picture of the general government is not available. It also limits the data sources to budget and administrative data that most governments collect as part of their daily operations, such as registering employees and processing salary payments. This reliance on only administrative data does significantly constrain the assessment, particularly on the dimensions of employment and wage competitiveness. Nevertheless, the following core sets of indicators combined with the guidance questions should provide an acceptably empirical assessment of public sector employment and compensation in such contexts.

## ASSESSING WAGE BILL DIMENSIONS - CORE INDICATORS

Indicator	Description	Data Sources
<b>1. Wage Bill Planning</b>		
Public expenditures across main expenditure categories	To measure expenditure dynamics in the wage bill vis-à-vis other expenditure categories like pensions, transfer, and good and services.	Budget data; IMF Article IV data annexes
Reported wage bill as share of GDP, expenditures, and revenues	To measure wage bill dynamics and fiscal sustainability, recognizing that the reported wage bill may not capture all expenditures.	Budget data; IMF Government employment and compensation dataset
Wage bill trends for education and health sectors	To understand the trends in usually the two largest public employment sectors.	Budget data
Public sector employment trends in key sectors	To understand the sources of wage bill growth for the largest public employment sectors.	Administrative data
<b>2. Wage Bill Controls</b>		
Deviations between budgeted and actual wage bill expenditures in the previous three fiscal years: For central government (or a sample of ministries) and a sample of local governments	This indicator measures the extent to which aggregate actual expenditure on the compensation of government workers reflects the amount originally approved, as defined in government budget documentation and fiscal reports. The data can be limited to a few, high spending ministries and local governments.	Budget and outturn data



Indicator	Description	Data Sources
Filled positions as a proportion of budgeted positions (for a sample of ministries and local governments)	This indicator measures the sanctity of wage expenditure ceilings as high percentage of vacant positions can create perverse incentives of using savings from vacant positions to finance compensation.	Administrative data
Ghost workers as a percentage of total workers in education and health sectors	Measures the effectiveness of payroll controls.	Payroll audits
Wage bill arrears as a percentage of total wage bill expenditures (for select ministries)	Measures delays in salary payments.	Administrative data
<b>3. Employment Levels and Distribution</b>		
Educational profile of public sector workers (for select ministries and local governments)	Decomposition of public sector workers by educational qualifications allows for an assessment of the level of skills in the public workforce.	Administrative data
Distribution of public sector workers by pay grade (for select ministries and local governments)	The distribution of public sector employment across clerical and ancillary staff, implementing staff, and managerial staff measures the quality of government workforce planning.	Administrative data
Student-teacher ratios; per-capital health workers	Provides a measure of the adequacy of key service delivery staff compared to international norms.	Administrative data
Share of public sector employees (across key personal demographics) for select ministries and local governments	Measures the representativeness of the public sector workforce.	Administrative data
<b>4. Wage Competitiveness</b>		
Public-private wage gap for select occupations (teachers, medical workers) based on raw (without controls) wage comparisons of jobs	Measures the wage difference between public and private sector pay for specific occupations. The premia are calculated for jobs without any demographic controls on the assumptions that this detailed micro-data is not available for the private service providers.	Administrative data; Data from a sample of private providers

Indicator	Description	Data Sources
Turnover rates for public sector employees (within occupations with private sector alternatives like teachers and health workers)	Indicator of the relative competitiveness between the public and private markets for key occupations where individuals can choose between the public and private sector workforces.	Administrative data
Pay comparisons for select occupations (e.g., teachers and medical workers) across public sectors	Measures pay of a particular public sector occupation compared to that in a few regional comparators for that occupation.	ICP data; administrative data
<b>5. Wage Equity</b>		
Public sector pay compression ratio (select ministries and local governments)	The ratio of salaries between the highest and lowest deciles in the pay scale.	Administrative data; review of salary legislation
Relative wages between different occupations (for a sample of occupations)	Provides an estimate of pay equity given the different responsibilities and demands of different jobs.	Administrative data; review of salary legislation
Within-occupation public sector pay dispersion (for a sample of occupations)	Provides estimates of wage differences controlling for occupational groups and worker characteristics.	Administrative data; review of salary legislation
<b>6. Wage Incentives</b>		
Percentage of staff receiving the highest performance evaluations (sample of ministries or local governments)	Indicator of the robustness of performance-based promotions and performance bonuses.	Administrative data
The size of annual, within-grade pay increases	Measures the importance of seniority vis-à-vis performance for wage increases.	Administrative data; Salary legislation
Percentage of staff receiving a performance bonus (sample of ministries or local governments)	An indicator of whether performance bonuses are regular salary supplements or distinguish between good and poor performers.	Administrative data
The size of the performance bonus as a percentage of basic pay	An indicator of the magnitude of the incentive.	Administrative data; Salary legislation.

Indicator	Description	Data Sources
The size of rural or hardship allowance and percentage of staff receiving it	An indicator of the magnitude of the incentive.	Administrative data; Salary legislation

## ASSESSING IMPACT - CORE INDICATORS

Indicator	Description	Data Sources
	<b>1. Fiscal Sustainability</b>	
Trends in wage bill and fiscal balances	To measure wage bill dynamics and fiscal sustainability.	Budget data
Trends in wage bill and capital expenditures	Provides an indication of whether the wage bill crowds out other spending.	Budget data
	<b>2. Public Sector Productivity</b>	
Correlation between wage-bill growth and socio-economic outcomes (for key public facing ministries/departments)	To measure trends in public-sector productivity and the impacts of wage-bill expenditure on desired outputs/ outcomes.	Budget data and service delivery indicators
	<b>3. Labor Allocation between Public and Private Sectors</b>	
Number of applications per vacancy in public sector (for a sample of ministries and positions)	Provides an indicator of queuing for public sector jobs.	Administrative data
Turnover of public sector employees (for a sample of ministries and positions).	An indicator of demand for private sector jobs.	Administrative data



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