Wage Bill and Pay Compression Summary Note

This note summarizes the state of knowledge on country level public sector wage bills, pay compression, and government employment. The note is partial and tentative as data remain scarce, both across countries and time periods, and there are uncertainties in definitions and issues with the units of analysis.

The purpose of this note is to provide operational World Bank staff with guidance concerning whether a country that they are rating for Country Policy and Institutional Assessment (CPIA) (or other operational purposes) is “unusual” by comparison with other similar countries in terms of its wage bill and pay compression. This exercise does not offer any normative perspective on whether being similar or different to others in the cluster is “good” or “bad”.

Definitions and data sources

1. Units of analysis

Entities covered
Wage bill data are available for general and central government as defined in the IMF’s Government Finance Statistics (GFS) database. Pay compression data are available for central government. Government employment is available for General Government. The CPIA questions refer to the core administration. It is important to understand the relationship between these units (Figure 1).

Figure 1: Employment in the public sector


1 Prepared by Zac Mills (Consultant, zmills@worldbank.org), with Sudyumna Dahal (Consultant), Colum Garrity (Public Sector Specialist) and Nick Manning (Adviser) of the PREM Public Sector & Governance unit.

2 GFS defines the non-financial public sector as general government sector plus non-financial public enterprises.
Core administration is taken to be civilian central government excluding health, education and police.

Pay

Public sector compensation has many elements (Figure 2).

**Figure 2: Elements of total compensation**

<table>
<thead>
<tr>
<th>Contractually-provided</th>
<th>Non-contractual/ intangible</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Monetary</strong></td>
<td></td>
</tr>
<tr>
<td>1. Base wage/salary</td>
<td>2. Health insurance,</td>
</tr>
<tr>
<td>4. Transportation,</td>
<td>employers' pension</td>
</tr>
<tr>
<td>4. Housing, meals,</td>
<td>contributions</td>
</tr>
<tr>
<td>5. Housing, meals,</td>
<td>6. Job security, prestige,</td>
</tr>
<tr>
<td>5. Transportation,</td>
<td>social privileges</td>
</tr>
<tr>
<td>5. Travel, cost-of-living</td>
<td>6. Trips abroad, training</td>
</tr>
<tr>
<td><strong>In-kind</strong></td>
<td></td>
</tr>
<tr>
<td>7. Pension</td>
<td>8. Housing, land, etc.</td>
</tr>
<tr>
<td>7. Reputation, re-</td>
<td>9. Reputation, re-</td>
</tr>
<tr>
<td>7. Employment after</td>
<td>employment after retirement</td>
</tr>
<tr>
<td>7. Retirement</td>
<td>9. Retirement</td>
</tr>
</tbody>
</table>

Source: Developed from World Bank, 2007.

The Administrative and Civil Service (ACSR) website (World Bank, 2007) uses a narrow definition of pay as all payments in cash, but not in kind, to employees in return for services rendered, before deduction of withholding taxes and employee pension contributions. Monetary allowances (e.g., for housing, transportation) are included in the wage bill. Pensions are not. In sum, the ACSR website has taken pay to mean *personal emoluments* (= cells 1 and 4 or current monetary rewards and allowances).

By contrast, the IMF GFS data captures wages, salaries (in cash and in kind) and social contributions made on behalf of employees to social insurance schemes (= cells 1, 2, 4 and 5) (IMF, 2001). This is also the OECD definition (OECD, 2011, pp.202-3).

Other definitions use *total compensation* (= cells 1, 2, 4 and 5 or contractually provided current rewards and allowances).

2. **Data availability**

Wage Bill

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3 GFA data are available separately for wages/salaries and social contribution but only for a limited number of countries.
The only comprehensive wage bill dataset is that provided by the IMF’s Government Finance Statistics (GFS) database which contains an indicator on the compensation of government employees. Specifically, the indicator is defined as:

\[ \text{The total remuneration, in cash or in kind, payable to a government employee in return for work done during the accounting period, except for work connected with own account capital formation. It includes both wages and salaries and social contributions made on behalf of employees to social insurance schemes. Excluded are amounts payable to contractors, self-employed outworkers, and other workers who are not employees of general government units.} \]

(International Monetary Fund, 2001, p. 63)

Clements et al (IMF, 2010) collected data for a paper on Evaluating Government Employment and Compensation. Their database spans from 2000 to 2008, and includes both central and general government compensation as percentages of GDP, revenues, and expenditures. It also contains additional observations derived from IMF staff reports. Data points were cross-checked with the Ghana 2009 Public Expenditure Review (Ecorys, 2009) which contains 2008 data for West African countries, the only other identified source of cross-country comparative data (Table 1). The figure reveals that the two sources are largely consistent, though small discrepancies still exist.

This data has been re-organized into a panel format (for easy data manipulation) and is available for staff in a master file (WAGE BILL DATA FINAL.xlsx). Additional variables of interest were also added, including region, income, population, freedom house ratings, and CPIA indicators.

### Table 1: Data Comparison: 2009 Ghana PER vs. IMF database (2008 data)

<table>
<thead>
<tr>
<th>Country</th>
<th>Ghana 2009 PER</th>
<th>IMF Database</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wage Bill % GDP</td>
<td>Wage Bill % Revenues</td>
</tr>
<tr>
<td>Niger</td>
<td>3.5</td>
<td>29.8</td>
</tr>
<tr>
<td>Guinea</td>
<td>4.2</td>
<td>25.3</td>
</tr>
<tr>
<td>Mali</td>
<td>4.7</td>
<td>35.7</td>
</tr>
<tr>
<td>Gambia</td>
<td>5.3</td>
<td>28.5</td>
</tr>
<tr>
<td>Togo</td>
<td>5.4</td>
<td>31.7</td>
</tr>
<tr>
<td>Benin</td>
<td>5.7</td>
<td>29.7</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>5.7</td>
<td>50</td>
</tr>
<tr>
<td>Senegal</td>
<td>5.8</td>
<td>30.7</td>
</tr>
<tr>
<td>Mauritania</td>
<td>5.9</td>
<td>27.2</td>
</tr>
<tr>
<td>Cote D’Ivoire</td>
<td>8.6</td>
<td>45.5</td>
</tr>
<tr>
<td>Liberia</td>
<td>8.7</td>
<td>33.9</td>
</tr>
<tr>
<td>Ghana</td>
<td>11.3</td>
<td>41.2</td>
</tr>
</tbody>
</table>

Source: National Statistics (various)  
Source: IMF Database

**Pay Compression**

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4 The IMF’s internal GFS database is much more comprehensive than the one available online to Bank staff.

5 The FAD database also contains employment and comparative wage data, and wage bills for the health and education sectors.
Pay compression is defined as the ratio of highest salary to lowest salary on the central government’s main salary scale. No identified global database encompasses this information. Therefore, data have been compiled from various sources, including IMF staff reports, World Bank public expenditure reviews, OECD documents, IADB reports, and SIGMA country assessments. Despite an intensive search, only 34 observations were found, spanning the mid-1990s to 2008 (data are available for staff as: WAGE COMPRESSION DATA.xlsx). Because the data came from different sources, there is no way of knowing if the different institutions used the same definition. The ratio for OECD countries is measured by dividing the 9th deciles to the 1st deciles of earnings (Lonti and Woods, 2008, p.99), but the other authors do not explicitly state their definition, which is problematic since compression ratios can be misleading if significant monetary allowances are not captured. Although this database presents a reasonable global comparison of pay compression across countries, the data should be interpreted with these caveats in mind.

**Employment**

Public Sector employment includes both General Government and SOEs employees, but only general government employment is captured in this note. The data were derived from the International Labor Organization Labor (ILO) Statistics Database (LABORSTA), the most comprehensive database of government employment, but still only manages to cover 74 countries (with low coverage across low-income countries). To provide a comparison across countries, the general government employment as a percentage of total population ratio was calculated in order to analyze “whether employment is adequate (or excessively) generous relative to what is needed to provide essential services to the population,” (Clements et al., 2010, p.4).

**Allowances as a proportion of total remuneration**

In principle, this would be measured as monetary allowances (= cell 4) as a proportion of either personal emoluments (=cells 1 and 4) or of the GFS notion of pay (=cells 1, 2 and 4).

In practice, no systematic collection of these data has been identified. There are some very limited data available on base pay and performance-related supplements within the OECD (typically less than 20%) (OECD, 2008, table 5.1).

### 3. Resultant picture

The Annex summarizes the few generalizations that can be made from currently available data.

Aggregate wage bills show significant variation by country type:

- Region: Sub-Saharan Africa higher than average;
- Income: High-Income countries spend more as a % of GDP, but less as % of revenue & expenditure;
- Population: Strong inverse relationship between country size and wage bill as % of GDP, revenue & expenditure;
- Freedom status: Countries deemed ‘Not Fair’ have the lowest wage bill as a % of GDP.

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6 There are some discrepancies on the definition of general government employment data reported by various countries.
There are very few data on pay compression. Available data shows high variation. The variation is less in the OECD, but the measure is likely different. Some of the OECD compression data suggest very flat pay structures (the UK is shown to have a 0.9 to 0.1 decile ratio of around 1.5). Most countries fall within 3-15 range.

General government employment as a percentage of population:
- Region: OECD countries, followed by MENA countries, have ratios above the regional average ratios, while the South Asia countries has the lowest ratio among the regions;
- Income: High-Income countries have higher government employment as a percentage of population, with high-income non-OECD countries having the highest ratio, followed by high-income OECD countries.

4. Future directions

There are three likely directions for future data collection work.

IMF-led consortium

The IMF (Government Finance Division, Statistics Department) are interested in including the World Bank in a consortium of international agencies that will be collecting public sector data (including wage bill and pay data) over the coming years. The IMF has started some initial work with the World Health Organization (WHO) for health sector employees and is piloting questionnaires in line with the GFS Manual 2001. Collaborating with the IMF and partners in this undertaking could be beneficial as it would allow the development of wage bill and pay data by sector.

International Comparison Program (ICP)

The International Comparison Program (ICP), coordinated within the World Bank by DEC, is a worldwide statistical partnership to collect comparative data on national accounts, prices and wages and compile detailed expenditure values of countries’ gross domestic products (GDP), and to estimate purchasing power parities (PPPs) for approximately 200 countries/economies. In the future 2012 round of the ICP, detailed government wage and employment data will be collected including on 44 typical occupations at four levels of experience each, as well as for Health, Education and Collective Services (see Figure 3). The ICP will also calculate pay and employment indicators (e.g., government wage bill per GDP for general/central/subnational government; compression ratios -- managerial-professional ratio; public sector remuneration per GDP/capita, and employment per capita, etc.). Resulting data will be available in early 2013.

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7 Initial conversation with Gary Jones, Senior Economist, GFS, IMF.
Exploiting household survey data

Household surveys can provide a useful source of data on public sector pay and hours worked (see Coppola and Calvo-Gonzalez, 2011 (forthcoming)) for a particularly compelling analysis). The use of household survey data has, however, been rather limited to date, perhaps because historically their primary audience has been academic researchers rather than public policy-makers (Panizza, 2001; Panizza and Qiang, 2005; Van Der Gaag et al., 1989). There is a significant opportunity to draw a more comprehensive dataset from household surveys.
References


ICP (2011) International Comparison Program (ICP).


Wage Bill by Region (Central Government)

2000-2008 average (Percent of GDP)

- Middle East & North Africa (n=12)
- Latin America & Caribbean (n=27)
- Sub-Saharan Africa (n=45)
- OECD (n=24)
- Eastern Europe & Central Asia (n=28)
- East Asia & Pacific (n=10)
- South Asia (n=8)

Source: IMF

n = # countries

Wage Bill % of Expenditures  Wage Bill % of Revenue  Wage Bill % of GDP
Wage Bill by Region (General Government)

- Middle East & North Africa (n=6)
- Latin America & Caribbean (n=13)
- Sub-Saharan Africa (n=9)
- OECD (n=25)
- Eastern Europe & Central Asia (n=25)
- East Asia & Pacific (n=4)
- South Asia (n=4)

2000-2008 average (Percent of GDP)

- Wage Bill % of Expenditures
- Wage Bill % of Revenue
- Wage Bill % of GDP

n = # countries
Source: IMF
Wage Bill by Income Level (Central Government)

- Low-Income Countries (n=358)
- Middle-Income Countries (n=468)
- High-Income Countries (n=278)

2000-2008 average (Percent of GDP)

- Wage Bill % of Expenditures
- Wage Bill % of Revenue
- Wage Bill % of GDP

n = # obs
Source: IMF
Wage Bill by Income Level (General Government)

Low-Income Countries (n=48)

Middle-Income Countries (n=396)

High-Income Countries (n=324)

2000-2008 average (Percent of GDP)

Wage Bill % of Expenditures  Wage Bill % of Revenue  Wage Bill % of GDP

n = # obs
Source: IMF
Wage Bill by Population (Central Government)

<table>
<thead>
<tr>
<th>Population Range</th>
<th>Wage Bill % of Expenditures</th>
<th>Wage Bill % of Revenue</th>
<th>Wage Bill % of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;100 million (n=9)</td>
<td>16</td>
<td>27</td>
<td>22</td>
</tr>
<tr>
<td>50-100 million (n=11)</td>
<td>20</td>
<td>26</td>
<td>23</td>
</tr>
<tr>
<td>20-50 million (n=24)</td>
<td>23</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>10-20 million (n=22)</td>
<td>22</td>
<td>26</td>
<td>23</td>
</tr>
<tr>
<td>5-10 million (n=30)</td>
<td>21</td>
<td>26</td>
<td>24</td>
</tr>
<tr>
<td>1-5 million (n=38)</td>
<td>21</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>&lt;1 million (n=23)</td>
<td>22</td>
<td>26</td>
<td>23</td>
</tr>
</tbody>
</table>

2000-2008 average (Percent of GDP)

n = # countries
Sources: IMF, World Bank
Wage Bill by Population (General Government)

<table>
<thead>
<tr>
<th>Population Range</th>
<th>Wage Bill % of Expenditures</th>
<th>Wage Bill % of Revenue</th>
<th>Wage Bill % of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;100 million</td>
<td>25</td>
<td>26</td>
<td>27</td>
</tr>
<tr>
<td>50-100 million</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>20-50 million</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>10-20 million</td>
<td>23</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>5-10 million</td>
<td>22</td>
<td>23</td>
<td>24</td>
</tr>
<tr>
<td>1-5 million</td>
<td>21</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>&lt;1 million</td>
<td>20</td>
<td>21</td>
<td>22</td>
</tr>
</tbody>
</table>

n = # countries

Sources: IMF, World Bank
Wage Bill by Freedom House Status (Central Government)

- **Free (n=515)**
- **Partially Free (n=368)**
- **Not Free (n=221)**

**2000-2008 average (Percent of GDP)**

- **Wage Bill % of Expenditures**
- **Wage Bill % of Revenue**
- **Wage Bill % of GDP**

Sources: IMF, Freedom House

n = # obs
Wage Bill by Freedom House Status (General Government)

Sources: IMF, Freedom House
The ratio for OECD countries is measured by dividing the 9th deciles to the 1st deciles of earnings. Sources: World Bank, IMF, OECD, IADB, SIGMA

N = 34
Employment by Region (General Government)

- South Asia Region (n=5)
- Sub-Saharan Africa (n=8)
- East Asia and the Pacific (n=4)
- Latin America & Caribbean (n=12)
- Eastern Europe & Central Asia (n=15)
- Middle East and North Africa (n=5)
- OECD (n=25)

2000-2008 Average (% of population)
Employment by Income Level
(General Government)

High Income (n=33)

Middle Income (38)

Low Income (n=3)

2000-2008 Average (% of population)
Employment by disaggregated Income Level (General Government)

- Low income (n=3)
- Lower middle income (n=17)
- Upper middle income (n=21)
- High income: nonOECD (n=8)
- High Income -OECD (n=25)

2000-2008 Average (% of population)