

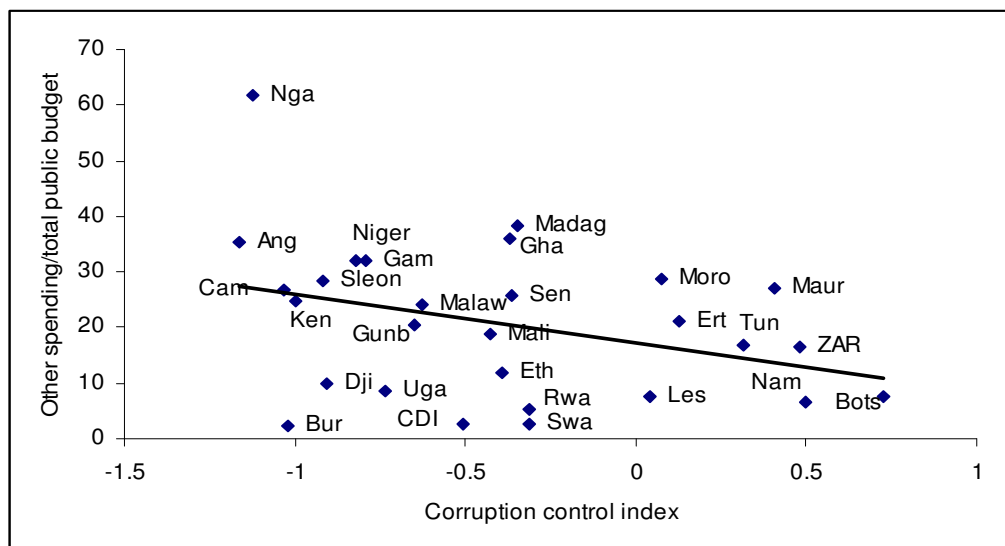
## CHAPTER TEN: 'OTHER' SPENDING

### 10.1 Introduction

Chapter 10 concludes the analysis with the final expenditure category, namely 'other' spending. It is divided into three sections: Section 10.2 contains a graphical representation of the relationship between the various governance indices and 'other' spending, Section 10.3 is devoted to empirical estimation results and section 10.4 contains a summary of the findings.

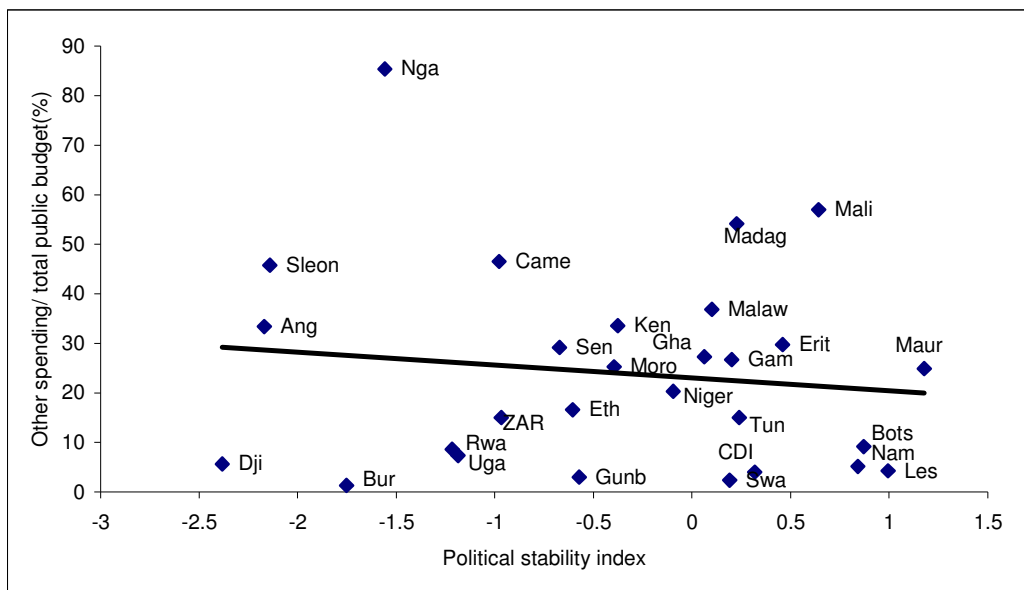
### 10.2 Relationship between governance and 'other' spending

'Other' spending includes several expenditure items: first, transfers from the national government to local authorities, which includes recurrent and capital transfers; second, expenditures on public debt, which includes foreign and domestic debt repayment of principal and interest; and third, miscellaneous or indivisible expenditures. The relationship between the various governance indices and 'other' spending are shown in Figures 50-56.



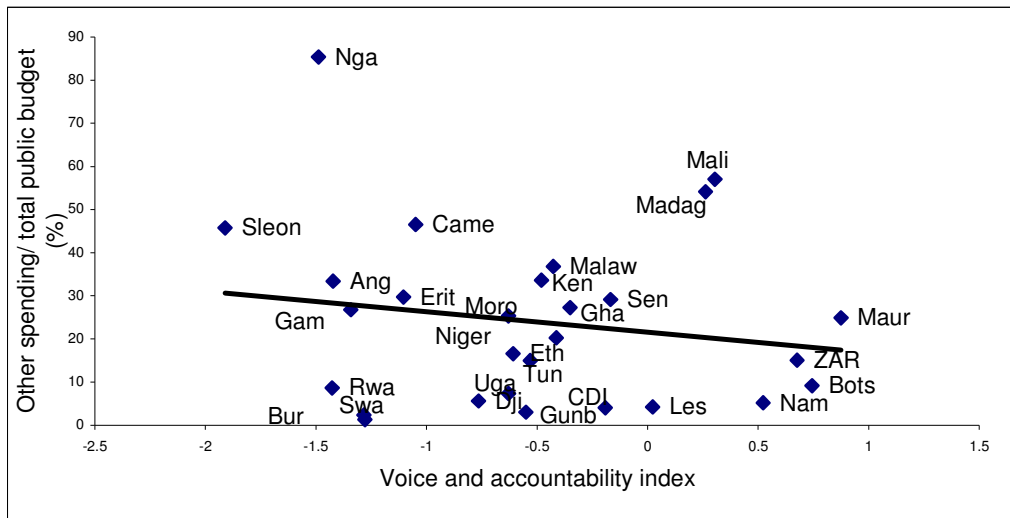
**Figure 50: Corruption control index and 'other' spending as a ratio of the total budget**

Figure 50 shows a weak negative relationship between the corruption control index and 'other' spending. This suggests that countries that are less corrupt tend to allocate smaller shares of their budgets to 'other' spending and vice versa. Nigeria, Angola, Niger and Sierra Leone are notoriously corrupt and allocate the largest budget shares to 'other' spending. In the 'less corrupt' sub-sample, Mauritius, Tunisia and South Africa allocate larger budget shares to 'other' spending, while Botswana and Namibia allocate the least.



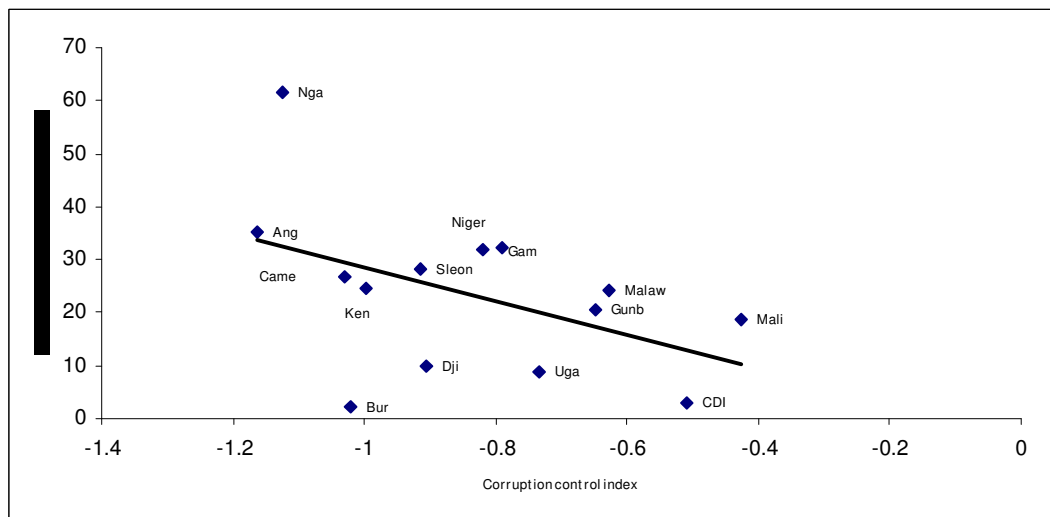
**Figure 51: Political stability index and 'other' spending as a share of the total budget**

Figure 51 shows the relationship between political stability index and 'other' spending as a share of the total public budget. A weak negative relationship can be seen between political stability index and 'other' spending, which suggests that countries that are politically more stable tend to allocate a smaller budget share to 'other' spending. Of the unstable countries, Nigeria, Sierra Leone, Cameroon and Angola have above average allocation to 'other' spending, while Djibouti and Burundi have below average allocations. Amongst the more politically stable countries, Madagascar and Mali allocate larger budget shares to 'other' spending while Namibia, Botswana and South Africa allocate the least.

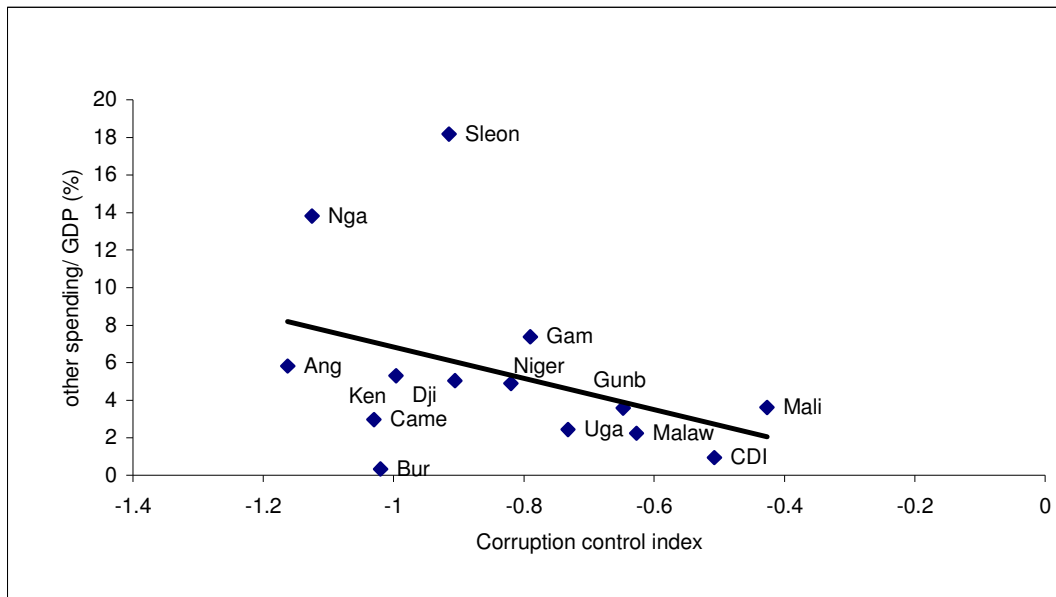


**Figure 52: Voice and accountability index and 'other' spending as a share of the total budget**

A negative relationship exists between the voice and accountability index and 'other' spending, as shown in Figure 52. The pattern seen with the political stability index is replicated here, with Nigeria and Sierra Leone allocating the largest budget share to 'other' spending amongst the most undemocratic and unaccountable countries and South Africa, Botswana and Namibia allocating the smallest budget shares among the most democratic and accountable countries.

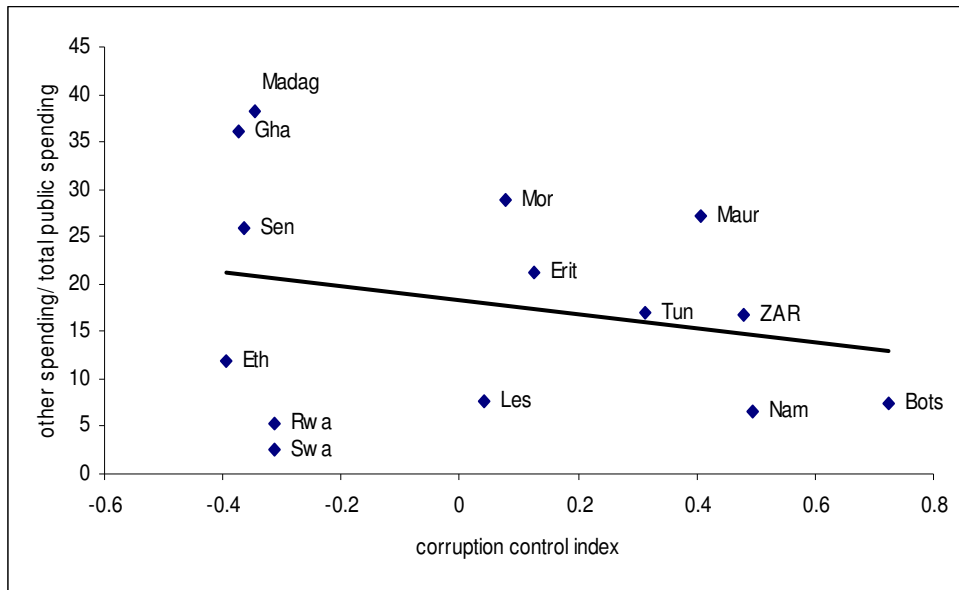


**Figure 53: Corruption control index and 'other' spending as a share of the total budget: 'most corrupt' sub-sample**

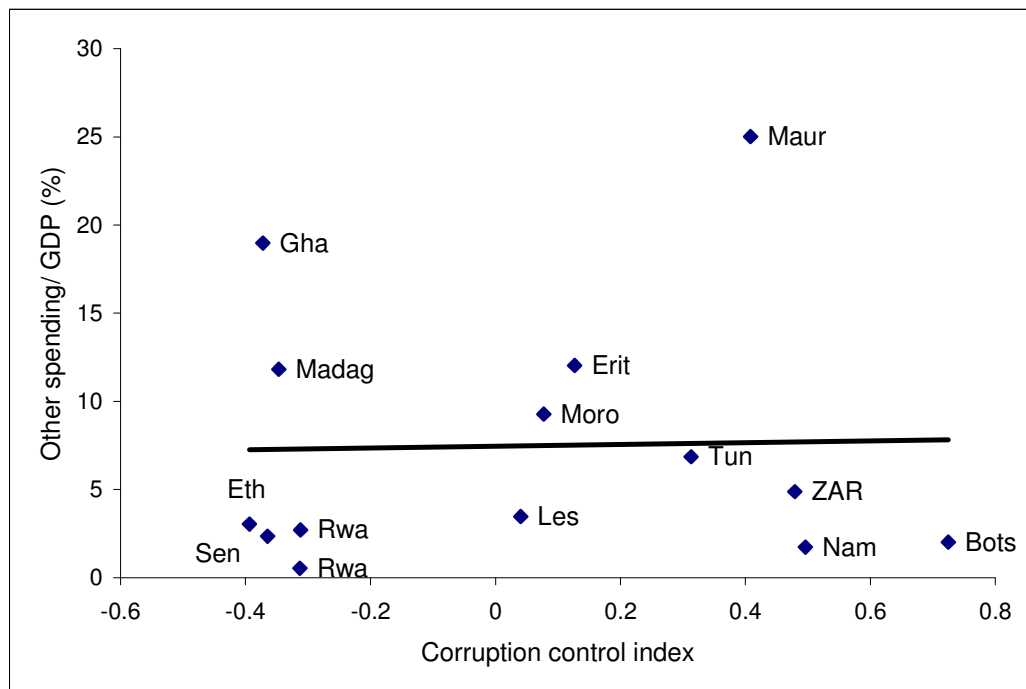


**Figure 54: Corruption control index and 'other' spending as a share of the GDP: 'most corrupt' sub-sample**

Figures 53 and 54 show the relationship between the corruption control index and 'other' spending in the 'most corrupt' sub-sample. There is a strong negative relationship between the index and 'other' spending. In the full sample (Figure 50) a negative relationship can be seen, which is replicated amongst the most corrupt countries. Figures 55 and 56 show the relationship between the corruption control index and 'other' spending in the full sample, which is a very weak relationship. Therefore, the weak relationship observed in the full sample is largely due to the spending behaviour of the less corrupt countries. This suggests that the more corrupt a country is the larger the budget share it allocates to 'other' spending. This is plausible because the bulk of 'other' spending consists of transfers from the national government to local authorities. Since corruption is found at all levels of government, a possible explanation of the results is that corruption at the local government level leads to higher transfers from the national government.



**Figure 55: Corruption control index and 'other' spending as a ratio of the total budget: 'less corrupt' sub-sample**



**Figure 56: Corruption control index and 'other' spending as a ratio of the GDP: 'less corrupt' sub-sample**

### 10.3 Estimation results of ‘other’ spending

This section reports the estimation results for ‘other’ spending as a share of the total public budget and of the GDP, as shown in Tables 21-23.

The estimation results for the category ‘other’ spending as a share of the public budget and of the GDP are reported in Tables 21-23. Those estimations where the dependent variable is expressed as a share of the public budget, the corruption control index is negative and significant at 1% level of testing. In those cases where the dependent variable is expressed as a share of the GDP, the coefficients are positive and significant at 1% level of testing. In those estimations where the dependent variable is expressed as a share of the public budget, the result suggests that as a country becomes less corrupt, it tends to allocate a smaller share of its budget to ‘other’ spending. In contrast, the results for cases where the dependent variable is expressed as a share of the GDP suggest that as the country becomes corruption-free, it tends to allocate more of its resources to ‘other’ spending.

The political stability index is found to be positively related to ‘other’ spending. This suggests that as a country becomes more stable, it tends to allocate more resources to ‘other’ spending. This is plausible because a country facing political problems will probably focus on security and so pass fewer resources on to other tiers of government or interest payments and capital redemption of both domestic and foreign loans.

**Table 21: Estimation results of ‘other’ spending: full sample**

|                     | Dependent variable expressed as a share of the total public budget |                       |                       |                        | Dependent variable expressed as a share of the GDP |                        |                        |                        |
|---------------------|--|-----------------------|-----------------------|------------------------|--|------------------------|------------------------|------------------------|
|                     | PM   | PM                    | PM                    | PM                     | PM   | PM                     | PM                     | PM                     |
| Cor                 | 0.106**<br>(2.095)   |                       |                       | -0.180***<br>(-3.294)  | 0.278***<br>(5.801)                                |                        |                        | 0.208***<br>(4.246)    |
| Pol                 |  | 0.188***<br>(7.814)   |                       | 0.175***<br>(5.619)    |  | 0.113***<br>(4.562)    |                        | 0.060**<br>(2.331)     |
| Acc                 |  |                       | 0.234***<br>(6.956)   | 0.155***<br>(3.871)    |  |                        | 0.157***<br>(4.685)    | 0.102***<br>(3.629)    |
| Lden                | 0.123***<br>(2.823)  | 0.153***<br>(3.847)   | 0.201***<br>(4.760)   | 0.193***<br>(4.817)    | 0.317***<br>(7.883)                                | 0.319***<br>(7.897)    | 0.374***<br>(8.364)    | 0.412***<br>(9.201)    |
| Ldebt               | -0.053*<br>(-1.776)  | -0.121***<br>(-4.263) | -0.051*<br>(-1.867)   | -0.114***<br>(-4.012)  | -0.085**<br>(-2.166)                               | -0.107***<br>(-2.882)  | -0.070*<br>(-1.928)    | -0.118***<br>(-3.013)  |
| Lgov                | -0.425**<br>(-2.342)   | -0.375**<br>(-2.308)  | -0.721***<br>(-4.304) | -0.666***<br>(-3.939)  |  |                        |                        |                        |
| Lpop                | -1.104***<br>(-8.427)  | -1.091***<br>(-9.723) | -1.149***<br>(-9.934) | -1.015***<br>(-8.728)  | -1.445***<br>(-11.287)                             | -1.260***<br>(-10.433) | -1.290***<br>(-10.384) | -1.597***<br>(-11.431) |
| Lypc                | -0.547***<br>(-6.466)  | -0.659***<br>(-9.989) | -0.705***<br>(-9.794) | -0.630***<br>(-8.237)  | -0.703***<br>(-8.578)                              | -0.457***<br>(-6.873)  | -0.520***<br>(-7.631)  | -0.802***<br>(-9.016)  |
| IMF                 | -0.801***<br>(-4.088)  | -0.742***<br>(-4.161) | -1.102***<br>(-5.881) | -0.9925***<br>(-5.281) | -0.073<br>(-1.581)                                 | -0.051<br>(-1.228)     | -0.122***<br>(-2.780)  | -0.082*<br>(-1.807)    |
| IMF*Lgov            | 1.396***<br>(4.285)  | 1.325***<br>(4.466)   | 1.786***<br>(5.797)   | 1.562***<br>(5.281)    |  |                        |                        |                        |
| Lurb                | 1.283***<br>(10.654)   | 1.342***<br>(12.887)  | 1.309***<br>(12.384)  | 1.254***<br>(11.837)   | 1.526***<br>(12.293)                               | 1.379***<br>(11.121)   | 1.316***<br>(11.441)   | 1.664***<br>(12.345)   |
| C                   | 2.186***<br>(5.155)  | 2.071***<br>(5.896)   | 2.904***<br>(7.451)   | 2.137***<br>(5.349)    | 2.466***<br>(7.009)                                | 1.423***<br>(4.772)    | 2.130***<br>(5.838)    | 2.853***<br>(7.143)    |
| R <sup>2</sup>      | 0.38   | 0.48                  | 0.46                  | 0.52                   | 0.82   | 0.84                   | 0.82                   | 0.88                   |
| Adj. R <sup>2</sup> | 0.36   | 0.47                  | 0.45                  | 0.50                   | 0.81   | 0.83                   | 0.81                   | 0.87                   |
| Diagnostic tests    |  |                       |                       |                        |  |                        |                        |                        |
| Hausman test        | 8.42<br>[0.4922]   | 15.92<br>[0.0683]     | 21.84<br>[0.0094]     | 29.56<br>[0.0019]      | 34.58<br>[<0.0001]                                 | 29.06<br>[0.0001]      | 25.35<br>[0.0007]      | 56.94<br>[<0.0001]     |

\*\*\* Significant at 1%; \*\* significant at 5%; and \* significant at 10%; t-statistics in bracket. PM is the pooled model.

**Table 22: Estimation results of ‘other’ spending as share of the total public budget**

|                         | ‘Most corrupt’ sub-sample |                       |                       |                       | ‘Less corrupt’ sub-sample |                       |                       |                       |
|-------------------------|---------------------------|-----------------------|-----------------------|-----------------------|---------------------------|-----------------------|-----------------------|-----------------------|
|                         | PM                        | PM                    | PM                    | PM                    | PM                        | PM                    | PM                    | PM                    |
| Cor                     | -0.005<br>(-0.037)        |                       |                       | -0.262**<br>(-2.143)  | 0.185***<br>(2.671)       |                       |                       | 0.019<br>(0.273)      |
| Pol                     |                           | 0.221***<br>(6.251)   |                       | 0.397***<br>(7.831)   |                           | 0.203***<br>(3.930)   |                       | 0.072<br>(1.306)      |
| Acc                     |                           |                       | 0.151*<br>(1.920)     | -0.354***<br>(-3.294) |                           |                       | 0.196***<br>(6.317)   | 0.170***<br>(4.579)   |
| Lden                    | -0.071<br>(-0.814)        | -0.014<br>(-0.189)    | 0.035<br>(0.352)      | -0.259***<br>(-2.784) | 0.226***<br>(5.572)       | 0.225***<br>(5.751)   | 0.277***<br>(7.383)   | 0.274***<br>(7.294)   |
| Ldebt                   | -0.030<br>(-0.481)        | -0.165***<br>(-2.899) | -0.004<br>(-0.060)    | -0.299***<br>(-4.221) | -0.081**<br>(-2.552)      | -0.119***<br>(-3.785) | -0.095***<br>(-3.347) | -0.104***<br>(-3.490) |
| Lgov                    | -1.137***<br>(-3.520)     | -1.276***<br>(-4.639) | -1.345***<br>(-4.120) | -0.735***<br>(-2.632) | 0.330<br>(1.450)          | 0.064<br>(0.301)      | -0.166<br>(-0.817)    | -0.139<br>(-0.632)    |
| Lpop                    | -1.319***<br>(-6.181)     | -1.262***<br>(-6.813) | -1.465***<br>(-6.619) | -0.808***<br>(-4.006) | -1.574***<br>(-8.652)     | -0.963***<br>(-4.343) | -1.319***<br>(-8.043) | -1.160***<br>(-5.334) |
| Lypc                    | -1.388***<br>(-7.026)     | -1.172***<br>(-6.983) | -1.380***<br>(-7.334) | -0.905***<br>(-5.430) | -0.708***<br>(-6.443)     | -0.513***<br>(-5.122) | -0.712***<br>(-7.681) | -0.679***<br>(-6.421) |
| IMF                     | -1.388***<br>(-3.989)     | -1.488***<br>(-5.354) | -1.643***<br>(-4.859) | -0.668***<br>(-2.176) | -0.246<br>(-1.229)        | -0.439**<br>(-2.283)  | -0.574***<br>(-3.182) | -0.679***<br>(-6.421) |
| IMF*Lgov                | 2.369***<br>(4.183)       | 2.461***<br>(5.377)   | 2.709***<br>(4.991)   | 1.281***<br>(2.625)   | 0.426<br>(1.213)          | 0.896**<br>(2.576)    | 0.889***<br>(2.807)   | 0.948***<br>(2.847)   |
| Lurb                    | 1.503***<br>(7.194)       | 1.507***<br>(8.412)   | 1.629***<br>(7.698)   | 1.123***<br>(6.057)   | 1.659***<br>(10.676)      | 1.245***<br>(7.070)   | 1.453***<br>(10.325)  | 1.350***<br>(7.948)   |
| C                       | 4.834***<br>(6.703)       | 4.423***<br>(7.050)   | 5.221***<br>(7.159)   | 2.940***<br>(4.409)   | 2.979***<br>(5.244)       | 1.009<br>(1.514)      | 2.807***<br>(5.683)   | 2.257***<br>(3.249)   |
| R <sup>2</sup>          | 0.43                      | 0.56                  | 0.45                  | 0.63                  | 0.64                      | 0.66                  | 0.71                  | 0.71                  |
| Adj. R <sup>2</sup>     | 0.39                      | 0.53                  | 0.41                  | 0.60                  | 0.61                      | 0.64                  | 0.69                  | 0.69                  |
| <b>Diagnostic tests</b> |                           |                       |                       |                       |                           |                       |                       |                       |
| Hausman                 | 21.66<br>[0.0100]         | 1.93<br>[0.9325]      | 0.32<br>[0.9914]      | 33.29<br>[0.0005]     | 5.06<br>[0.8295]          | 5.91<br>[0.7489]      | 9.43<br>[0.3989]      | 8.58<br>[0.6607]      |

\*\*\* Significant at 1%; \*\* significant at 5%; and \* significant at 10%; t-statistics in bracket. PM is the pooled model.



**Table 23: Estimation results of ‘other’ spending as share of the GDP**

|                     | ‘Most corrupt’ sub-sample |                        |                        |                        | ‘Less corrupt’ sub-sample |                       |                       |                       |
|---------------------|---------------------------|------------------------|------------------------|------------------------|---------------------------|-----------------------|-----------------------|-----------------------|
|                     | PM                        | PM                     | PM                     | PM                     | PM                        | PM                    | PM                    | PM                    |
| Cor                 | -0.174**<br>(-2.116)      |                        |                        | -0.294***<br>(-3.148)  | 0.181**<br>(2.070)        |                       |                       | 0.233***<br>(2.627)   |
| Pol                 |                           | 0.024<br>(0.643)       |                        | 0.074<br>(1.563)       |                           | 0.279***<br>(4.735)   |                       | 0.183***<br>(2.806)   |
| Acc                 |                           |                        | -0.015<br>(-0.334)     | 0.070<br>(1.103)       |                           |                       | 0.178***<br>(4.771)   | 0.125***<br>(3.587)   |
| Lden                | -0.201***<br>(-4.146)     | -0.140**<br>(-2.331)   | -0.148**<br>(-2.357)   | -0.128**<br>(-2.364)   | 0.518***<br>(8.526)       | 0.532***<br>(8.457)   | 0.617***<br>(10.586)  | 0.600***<br>(11.401)  |
| Ldebt               | 0.418***<br>(4.034)       | 0.337***<br>(3.053)    | 0.396***<br>(4.165)    | 0.368***<br>(2.894)    | -0.147***<br>(-3.129)     | -0.165***<br>(-3.199) | -0.158***<br>(-3.419) | -0.153***<br>(-3.323) |
| Lpop                | -1.729***<br>(-12.646)    | -1.886***<br>(-9.984)  | -1.734***<br>(-12.794) | -2.032***<br>(-10.366) | -1.296***<br>(-7.625)     | -0.195<br>(-0.804)    | -1.486***<br>(-8.002) | -0.790***<br>(-2.746) |
| Lypc                | -1.422***<br>(-11.461)    | -1.478***<br>(-10.109) | -1.333***<br>(-11.799) | -1.624***<br>(-10.367) | -0.487***<br>(-4.751)     | -0.192*<br>(-1.878)   | -0.692***<br>(-6.109) | -0.609***<br>(-4.108) |
| IMF                 | -0.079*<br>(-1.678)       | -0.074*<br>(-1.696)    | -0.077**<br>(-2.115)   | -0.091*<br>(-1.831)    | -0.010<br>(-0.128)        | -0.015<br>(-0.194)    | -0.149*<br>(-1.825)   | -0.071<br>(-0.768)    |
| Lurb                | 1.832***<br>(12.976)      | 1.997***<br>(10.935)   | 1.842***<br>(13.862)   | 2.084***<br>(6.565)    | 1.318***<br>(8.428)       | 0.501**<br>(2.588)    | 1.453***<br>(8.821)   | 0.962***<br>(4.260)   |
| C                   | 3.754***<br>(6.697)       | 4.156***<br>(5.967)    | 3.604***<br>(6.583)    | 4.758***<br>(6.535)    | 1.918***<br>(4.068)       | -1.285*<br>(-1.719)   | 2.964***<br>(5.079)   | 1.018<br>(1.067)      |
| R <sup>2</sup>      | 0.92                      | 0.94                   | 0.96                   | 0.92                   | 0.87                      | 0.86                  | 0.86                  | 0.87                  |
| Adj. R <sup>2</sup> | 0.91                      | 0.92                   | 0.93                   | 0.91                   | 0.86                      | 0.85                  | 0.85                  | 0.86                  |
| Diagnostic tests    |                           |                        |                        |                        |                           |                       |                       |                       |
| Hausman test        | 26.57<br>[0.0004]         | 29.64<br>[<0.0001]     | 27.75<br>[0.0001]      | 21.93<br>[0.0050]      | 25.01<br>[0.0008]         | 29.44<br>[<0.0001]    | 61.24<br>[<0.0001]    | 35.05<br>[<0.0001]    |

\*\*\* Significant at 1%; \*\* significant at 5%; and \* significant at 10%; t-statistics in bracket. PM is the pooled model.

The voice and accountability index is found to produce coefficients that are positive and significant in all the estimations. This suggests that as a country becomes more transparent it tends to allocate an increasing share of its budget to ‘other’ spending. This is plausible because transfers to local authorities, for example, are more important in democratic governments than in less democratic ones. Low levels of transfer to local authorities by the national government imply

poor service delivery by local authorities, which may jeopardise the political position of the ruling party.

Population density and urbanisation are positively correlated to 'other' spending. This suggests that as a country becomes more populated and, therefore, urbanised it tends to increase budgetary allocations to 'other' spending. These results are plausible because a population increasing in size and urbanisation requires more funding at local government level. In many instances such expenditure is financed through transfers from the national government. Also, in some instances, governments have to assist with infrastructure expenditure at lower tiers of government.

The coefficients for size of government are found to be positive and significant in those estimations where the dependent variable is expressed as a share of the total public budget. This suggests that as a government becomes larger it tends to allocate more resources to 'other' spending. This result is plausible because the larger the government the more transfers there will be to be included in 'other' spending.

In all the estimations the coefficients of income per capita are negative and significant at the 1% level. This suggests that as a country develops, it tends to allocate less budgetary resources to the 'other' spending category. This result is plausible because as a country becomes more developed it tends to need local authorities that are more financially viable and therefore less reliant on the national government. This negative trend is also true for interest payments, because as a country develops, it tends more be self-sufficient in saving and so relies less on financial assistance from borrowed funds.

### 10.3 Summary

The coefficients of the corruption control index are negative and significant in all the estimations. In contrast, the coefficients of the political stability index are positive and significant at the conventional levels of testing, both for the full sample and the sub-samples. Similar results are obtained for the voice and accountability index. The estimated coefficients of population density are positive and insignificant. The size of government is found to be positive and significant at the 1% level. The size of the population is positively related to 'other' spending and significant at the 5% level of testing. The coefficients of the GDP per capita (level of economic development) are negative and insignificant at conventional levels of testing.

## CHAPTER ELEVEN: PANEL SYSTEM APPROACH ESTIMATIONS

### 11.1 Introduction

In this chapter results from Chapters 4 to 10 are validated by conducting the estimations within a panel systems framework. Estimations are conducted using the iterative seemingly unrelated regression (ITSUR) procedure. Section 11.2 presents and discusses the estimations results and Section 11.3 contains the conclusions.

### 11.2 Panel systems estimation results

**Table 24: Panel system estimation results**

|                    | General public services | Defence              | Education           | Health               | Social welfare       | Economic services   | Other           |
|--------------------|-------------------------|----------------------|---------------------|----------------------|----------------------|---------------------|-----------------|
| Cor                | -0.004<br>(-0.31)       | 0.004<br>(0.37)      | 0.036***<br>(4.02)  | 0.011**<br>(2.87)    | 0.039***<br>(5.35)   | -0.018<br>(-1.26)   | -0.068<br>(n/a) |
| Ldefn              | 0.085***<br>(4.00)      | 0.125***<br>(6.37)   | 0.013<br>(0.87)     | 0.007<br>(1.07)      | -0.018<br>(-1.43)    | -0.007<br>(-0.27)   | -0.205<br>(n/a) |
| Ldebt              | -0.006<br>(-0.80)       | -0.002<br>(-0.27)    | -0.007<br>(-1.24)   | 0.002<br>(1.00)      | -0.006<br>(-1.35)    | 0.035***<br>(3.77)  | -0.016<br>(n/a) |
| Lgov               | -0.106**<br>(-2.32)     | -0.413***<br>(9.80)  | 0.127***<br>(3.91)  | 0.052***<br>(-3.82)  | 0.057**<br>(-2.15)   | -0.064<br>(-1.20)   | 0.347<br>(n/a)  |
| Lpop               | -0.094***<br>(-8.97)    | -0.008<br>(-0.79)    | 0.013*<br>(1.76)    | -0.004<br>(-1.12)    | 0.011*<br>(1.74)     | 0.003<br>(0.27)     | 0.079<br>(n/a)  |
| IMF                | -0.098<br>(-0.88)       | -0.668***<br>(-6.44) | 0.152*<br>(1.91)    | 0.145***<br>(4.31)   | -0.233***<br>(-3.58) | 0.313**<br>(2.38)   | 0.389<br>(n/a)  |
| IMF*Lgov           | 0.074<br>(0.94)         | 0.491***<br>(6.73)   | -0.122**<br>(-2.18) | -0.105***<br>(-4.44) | -0.164***<br>(-3.57) | -0.235**<br>(-2.54) | 0.043<br>(n/a)  |
| Lypc               | -0.021<br>(-1.24)       | -0.098***<br>(-6.39) | 0.010<br>(0.84)     | 0.002<br>(0.39)      | 0.044***<br>(4.54)   | 0.063***<br>(3.24)  | 0.000<br>(n/a)  |
| C                  | 0.996***<br>(7.280)     | -0.268**<br>(-2.120) | 0.231**<br>(2.37)   | 0.152***<br>(3.70)   | -0.000<br>(-0.00)    | 0.001<br>(0.01)     | -0.112<br>(n/a) |
| R <sup>2</sup>     | 0.33                    | 0.50                 | 0.16                | 0.12                 | 0.40                 | 0.12                | -               |
| Adj R <sup>2</sup> | 0.31                    | 0.48                 | 0.14                | 0.10                 | 0.39                 | 0.10                | -               |

\*\*\* Significant at 1%; \*\* significant at 5%; and \* significant at 10%; t-statistics in bracket.

The results in Table 24 show that corruption plays an important role in the allocation of public resources to different sectors on the budget. In the general public services spending category, the estimated coefficient of the corruption control index is negative and insignificant. Although not significant, it supports the

findings in Chapter 4 where the estimated coefficient was found to be negative and significant at the 1% level of testing in the full sample estimation. This finding, therefore, suggests that countries that suffer high levels of corruption tend to allocate a larger share of their budgets to general public services.

The estimated coefficient of the corruption control index is not significant and does not have the expected sign in the case of defence spending. This is in contrast to the findings in Chapter 5, where the estimated coefficient was found to be negative and significant at the conventional levels of testing. Thus, although corruption has been highlighted as one of the main factors prompting larger budget allocations to defence, available evidence is not conclusive.

The estimated coefficient of the corruption control index is found to be positive and significant at the 1% level in the case of education spending. This suggests that as a country becomes less corrupt, it tends to spend a larger share of its budget on education. This finding supports the results of Chapter 6, which suggest that education spending is greater in countries where corruption is not rampant. These findings further support those of Mauro (1998). The estimated coefficient of the corruption control index is positive and significant in the case of health spending, which supports the findings of Chapter 7. The social welfare spending category also seems to be positively correlated with the corruption control index, which supports the findings of Chapter 8. All these results, therefore, suggest that corrupt governments spend a smaller share of their budgets on social welfare.

The estimated coefficient of the corruption control index on the economic services spending category is negative, as expected. However, it is not significant at the conventional levels of testing. The negative sign obtained here supports the findings of Chapter 9, which suggests that economic services are affected by corruption.

**Table 25: Panel system estimation results**

|                    | General public services | Defence               | Education          | Health               | Social welfare       | Economic services    | Other           |
|--------------------|-------------------------|-----------------------|--------------------|----------------------|----------------------|----------------------|-----------------|
| pol                | -0.018**<br>(-2.56)     | -0.044***<br>(-7.42)  | 0.002<br>(0.41)    | 0.010***<br>(5.09)   | 0.017***<br>(4.10)   | 0.010<br>(1.23)      | 0.023<br>(n/a)  |
| Ldefn              | 0.072***<br>(3.35)      | 0.095***<br>(5.17)    | 0.018<br>(1.12)    | 0.015**<br>(2.37)    | -0.002<br>(-0.18)    | -0.001<br>(-0.05)    | -0.197<br>(n/a) |
| Ldebt              | -0.002<br>(-0.30)       | 0.007<br>(1.09)       | -0.008<br>(-1.39)  | -0.000<br>(-0.04)    | -0.011**<br>(-2.24)  | 0.033***<br>(3.51)   | -0.019<br>(n/a) |
| Lgov               | -0.093**<br>(-2.11)     | -0.458***<br>(-12.17) | 0.096***<br>(2.93) | 0.052***<br>(4.00)   | 0.037<br>(1.38)      | 0.090*<br>(1.73)     | 0.276<br>(n/a)  |
| Lpop               | -0.101***<br>(-9.44)    | -0.024***<br>(-2.61)  | 0.015*<br>(1.87)   | 0.001<br>(0.18)      | 0.018**<br>(2.78)    | 0.007<br>(0.53)      | 0.084<br>(n/a)  |
| IMF                | -0.067<br>(-0.60)       | -0.754***<br>(-7.94)  | -0.132<br>(-1.60)  | 0.157***<br>(4.80)   | 0.239***<br>(3.57)   | 0.344***<br>(2.61)   | 0.213<br>(n/a)  |
| Imf*Lgov           | 0.052<br>(0.66)         | 0.553***<br>(8.29)    | -0.108*<br>(-1.87) | -0.114***<br>(-4.96) | -0.169***<br>(-3.60) | -0.258***<br>(-2.78) | 0.044<br>(n/a)  |
| Lypc               | -0.008<br>(-0.57)       | -0.057***<br>(-4.58)  | 0.035***<br>(3.26) | 0.001<br>(0.30)      | 0.059***<br>(6.71)   | 0.040**<br>(2.31)    | -0.07<br>(n/a)  |
| C                  | 0.991***<br>(7.88)      | -0.334***<br>(-3.11)  | 0.088<br>(0.95)    | 0.120***<br>(3.24)   | -0.138*<br>(-1.83)   | 0.088<br>(0.59)      | 0.185<br>(n/a)  |
| R <sup>2</sup>     | 0.34                    | 0.58                  | 0.11               | 0.18                 | 0.38                 | 0.12                 | -               |
| Adj R <sup>2</sup> | 0.32                    | 0.57                  | 0.09               | 0.15                 | 0.36                 | 0.10                 | -               |

\*\*\* Significant at 1%; \*\* significant at 5%; and \* significant at 10%; t-statistics in bracket.

Table 25 shows that the estimated coefficient of the political stability index is negative and significant at the 5% level of testing in the public services spending category. This supports the findings of Chapter 4 that the political stability index is negatively related to public services spending. Thus, countries that are politically stable tend to devote smaller shares of their public resources to general public services. The coefficient of the political stability index in the defence category is also negative and significant at the 1% level of testing. This supports the findings of Chapter 5 indicating that countries that are politically stable spend a smaller share of their budgets on defence.

Similar to the findings of Chapter 6, the estimated coefficient of the political stability index relative to education spending is not significant at the conventional levels of testing. However, the coefficient was found to be negative and insignificant in Chapter 6, but here positive and insignificant. This suggests that education spending may not be influenced very greatly by political stability in a country. In contrast, the estimated coefficient of the political stability index on

health spending is positive and significant at the 1% level of testing, which supports the earlier findings of Chapter 7. These findings are, therefore, conclusive and show that countries with low instability tend to spend less of their budgets on health and vice versa.

Confirming the findings of Chapter 8, the estimated coefficient of the political stability index is positive and significant at the 1% level in the case of social services spending. This finding, therefore, lends credence to other findings indicating that stable countries tend to allocate more resources to social development. However, the estimated coefficient is not significant at the conventional levels in the case of economic services spending.

Table 26 shows that the estimated coefficient of the voice and accountability index is not significant in the case of general public services spending. This confirms results reported in Chapter 4. In the case of defence spending, the coefficient is negative and significant, which contradicts the findings of Chapter 5, where the estimated coefficients were found to be positive at the conventional levels. Thus, the findings can give no conclusive indication of the role of the voice and accountability index in the allocation of budget to defence.

**Table 26: Panel system estimation results**

|                     | General public services | Defence               | Education          | Health               | Social welfare services | Economic services   | Other           |
|---------------------|-------------------------|-----------------------|--------------------|----------------------|-------------------------|---------------------|-----------------|
| Acc                 | 0.000<br>(0.00)         | -0.039***<br>(-4.75)  | 0.005<br>(0.74)    | 0.007**<br>(2.49)    | 0.010*<br>(1.77)        | 0.007<br>(0.61)     | 0.010<br>(n/a)  |
| Ldefn               | 0.084***<br>(3.91)      | 0.107<br>(5.59)       | 0.019<br>(1.18)    | 0.011*<br>(1.68)     | -0.010<br>(-0.73)       | -0.005<br>(-0.20)   | -0.206<br>(n/a) |
| Ldebt               | -0.006<br>(-0.78)       | -0.007<br>(-1.00)     | -0.007<br>(-1.21)  | 0.003<br>(1.27)      | -0.006<br>(-1.21)       | 0.003<br>(1.27)     | 0.020<br>(n/a)  |
| Lgov                | -0.109**<br>(-2.47)     | -0.399***<br>(-10.13) | 0.091***<br>(2.82) | 0.039***<br>(2.93)   | -0.016<br>(-0.60)       | -0.078<br>(-1.50)   | 0.472<br>(n/a)  |
| Lpop                | -0.094***<br>(-8.94)    | -0.003<br>(-0.33)     | 0.013*<br>(1.74)   | -0.004<br>(-1.28)    | 0.010*<br>(1.62)        | 0.002<br>(0.18)     | 0.076<br>(n/a)  |
| IMF                 | -0.100<br>(-0.90)       | -0.655***<br>(6.58)   | -0.126<br>(-1.54)  | 0.135***<br>(4.00)   | 0.202***<br>(2.98)      | 0.323**<br>(2.45)   | 0.221<br>(n/a)  |
| IMF*Lgov            | 0.076<br>(0.97)         | 0.471***<br>(-6.73)   | -0.102*<br>(-1.78) | -0.096***<br>(-4.05) | -0.140***<br>(-2.92)    | -0.240**<br>(-2.59) | 0.031<br>(n/a)  |
| Lypc                | -0.024<br>(-1.43)       | -0.055***<br>(-3.78)  | 0.032***<br>(2.67) | 0.003<br>(0.64)      | 0.064***<br>(6.35)      | 0.042**<br>(2.17)   | -0.062<br>(n/a) |
| C                   | 1.012***<br>(7.78)      | -0.399***<br>(-3.45)  | 0.101<br>(1.06)    | 0.129***<br>(3.29)   | -0.129*<br>(-1.63)      | 0.096<br>(0.63)     | 0.190<br>(n/a)  |
| R <sup>2</sup>      | 0.32                    | 0.54                  | 0.11               | 0.12                 | 0.35                    | 0.12                | -               |
| Adj. R <sup>2</sup> | 0.30                    | 0.52                  | 0.09               | 0.09                 | 0.33                    | 0.09                | -               |

\*\*\* Significant at 1%; \*\* significant at 5%; and \* significant at 10%; t-statistics in bracket.

In the case of education spending, the estimated coefficient of the voice and accountability index is positive but not significant at the conventional levels of testing. This finding confirms the results of Chapter 6, indicating strongly that public spending on education is not influenced by the level of accountability of a government. In the health spending category, the estimated coefficient is positive and significant at the 5% level of testing. In Chapter 7, similar results were reported, except that the estimated coefficient was not significant at the conventional levels of testing. Social welfare spending is positively correlated to the voice and accountability index. This finding is similar to that reported in Chapter 8. Similarly, the estimated coefficient is positive and insignificant in the case of economic services spending. This finding supports the results of Chapter 9. These findings suggest that public decisions on whether or not to allocate more resources to economic services are not affected by the level of transparency of a government and the extent to which it accommodates the voice of its people.



Other than the governance indicators discussed above, a number of other important findings can also be derived from Tables 24 to 26. The estimations show that defence spending of neighbouring countries has a strong positive influence on expenditure decisions on general public services and defence spending. This may be because as neighbouring countries increase their spending on defence, this heightens regional tension and prompts countries to increase their own defence spending. Such an increase in defence spending also spills over into increased expenditure on general public services which include the police and security departments.

Although public debt was found to be a highly significant factor in the estimations presented in Chapters 4-10, it is now only significant in the case of economic services spending. This is plausible in the African context, where most of the infrastructure projects undertaken by government such as road building, water systems and other public works are largely driven by borrowed capital.

The IMF dummy variable is found to be negative and significant in most cases in the general public services, defence and social services spending categories, which supports earlier findings. It is also positive for the education, health and economic services spending categories. This suggests that countries that implement IMF programmes tend to structure their public budgets in favour of education, health and economic services and against sectors such as general public services and defence spending.

Countries with IMF programmes are also found to lower their spending on public services and defence when the ratio of the public budget to the GDP is reduced. This supports the findings of Chapters 4-10. However, in this case the reduction is less than proportionate compared to the earlier results. Furthermore, spending on education, health, social welfare and economic services tends to benefit more when the overall budget is reduced relative to the GDP. Although these results conform with the findings of Chapters 5-10, the estimated elasticities are

relatively small, which suggests that all these budget components are resilient to changes in the ratio of the total public budget to the GDP.

In conformity with earlier findings, the estimated coefficients of the GDP per capita are negative in the case of the general public services and defence spending categories, which suggests that as countries develop they allocate a smaller share of their budgets to these categories. In contrast, the coefficients are positive for education, health, social welfare and economic services.

### **11.3 Concluding remarks**

In essence, the purpose of this chapter was to validate the findings of Chapters 4-10. The results of the systems approach used in this chapter generally agree with those arrived at earlier. The most important points will now be briefly summarised.

Firstly, corruption tilts the budget in favour of defence, although the evidence is not conclusive. Also, countries that are less corrupt tend to allocate a larger share of their budgets to education, health and social services.

Secondly, political stability strongly affects budget allocations. Countries that suffer from instability allocate a larger share of their budgets to general public services and defence, while countries that are stable allocate more to the health and social welfare categories.

Thirdly, IMF programmes also tend to increase spending on social issues rather than on general public services and defence.