The Local Public Sector: composition, determinants and issues of definition and measurement

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The use of the concept of the local public sector (LPS) to examine the importance of localized activities has grown in importance over the last three years since first being put forward by Boex and Yilmaz (2010) and being clarified by Boex (2012a). In this paper we first briefly clarify the concept of the LPS, and then present the most recent results on its policy importance. We then turn to an empirical aspect that has largely been neglected until now: what determines the size (and composition of the LPS)? We then examine how the concept of the LPS fits in with the public finance literature and what aspects of its definition and measurement should perhaps be investigated further as it now occupies a larger space in policy making.

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1. Introduction

The use of the concept of the local public sector (LPS) to examine the importance of localized activities has grown in importance over the last three years since first being put forward by Boex and Yilmaz (2010) and being clarified by Boex (2012a). In this paper we address an empirical aspect of the local public sector that has largely been neglected until now: what determines the size and composition of the LPS? Whereas the previous decentralization literature has sought to answer this question by identifying the determinants of devolved local government spending, until recently, the data was unavailable to answer this question for other mechanisms for achieving decentralization and localization.

After exploring this relevant policy question, we examine how the concept of the LPS fits in with the public finance literature and what aspects of its definition and measurement should perhaps be investigated further as it now occupies a larger space in policy analysis and policy making, especially within the debate surrounding the localization of the post-2015 sustainable development agenda.

We begin our discussion by briefly recalling the concept of the LPS, and by presenting the most recent results on its policy importance.

2. The Local Public Sector and its most recent measurement

In its first empirical presentation on the size and composition of the local public sector at the NTA, Boex (2012) presented preliminary empirical analysis of the composition of the local public sector for 9 countries. Since then, the concept of the LPS has been applied to a far greater number of countries. This paper presents evidence on the size and composition of the local public sector for two key sectors (education and health) in 24 countries.

Before presenting these results, however, we recall that the LPS methodology was developed to answer several key research questions regarding the vertical structure of the public sector in different countries, including: how big is the local public sector in different countries, and what is the composition of local public sector expenditures in health and education? Have public sector resources (and possible, development resources) for MGD-relevant services remained stuck at the central government level? The LPS methodology sought to address these questions more accurately by moving beyond the traditional approach of classifying public sector finances into two groups: devolved local government finances versus all other public sector finances (classified as “central government finance”). This latter category included not only truly centralized expenditures, but also all sorts of non-devolved local public sector

expenditures, such as deconcentrated public expenditures. This approach is not wrong, *per se*, but rather is incomplete, as it does not take into account all the expenditures made at the local level.

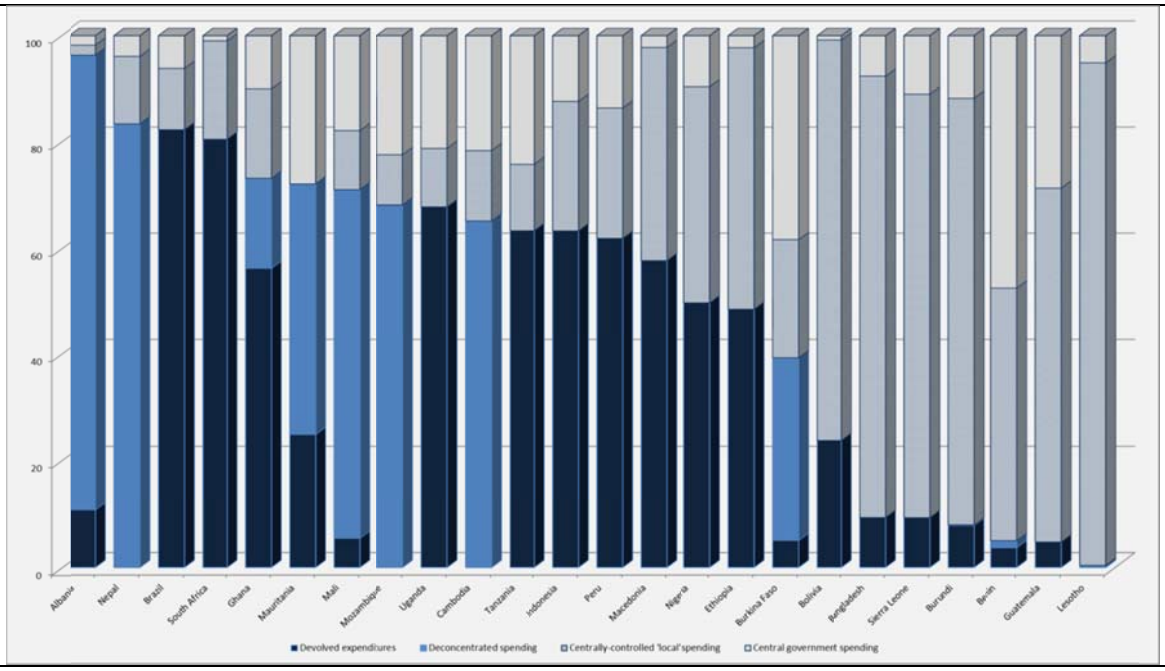
In response to these definitional weaknesses and in order to gain a better understanding of the local public sector, the LPS methodology introduced a more nuanced classification of local public sector expenditures that specifically acknowledges and measures four different approaches to the decentralization and localization of service provision. For the purposes of this research, our measures of the local public sector includes not only the activities and spending of these devolved regional (province, state,…) and local governments (as has traditionally been the case), but also encompasses the activities of any deconcentrated administrative bodies below the central level, as well as spending by central government line ministries (or other central government agencies) that support the front-line delivery of public services in a direct and localized manner. The inclusion of these latter types of localized spending, and the general perspective that local service delivery is a multi-level government process, allows this study both to capture localized resources that have not been analyzed to date, and to make direct comparisons between countries with devolved systems of governance and those with deconcentrated systems of governance, which are often overlooked by studies which focus more narrowly on municipal or devolved finances.

In fact, until very recently, no comparative information or data were available at all on the size of non-devolved local public sector expenditures in different countries, or on the degree to which central government expenditures have been used to support localized service delivery outcomes.

In order to create the evidence-basis for a more rigorous and detailed analysis on the decentralization and localization of public services and development interventions, a number of development agencies, united under the Development Partner Working Group on Decentralization and Local Governance (DeLoG), supported the adaptation of the research methodology by the Urban Institute's Local Public Sector Initiative to focus specifically on the role of the entire local public sector in achieving development results in two sectors: health and education. In addition, through DeLoG, numerous development partners supported or participated directly in the collection of LPS Country Surveys on Health and Education, resulting in a cross-sectional data set for the year 2010 based on data for 24 countries. The data collection process was informative, revealing both the availability (or unavailability) of relevant data on local public expenditures, as well as the degree to which non-devolved local public sector activities and expenditures have largely been overlooked by the Community of Practice on decentralization and local governance.

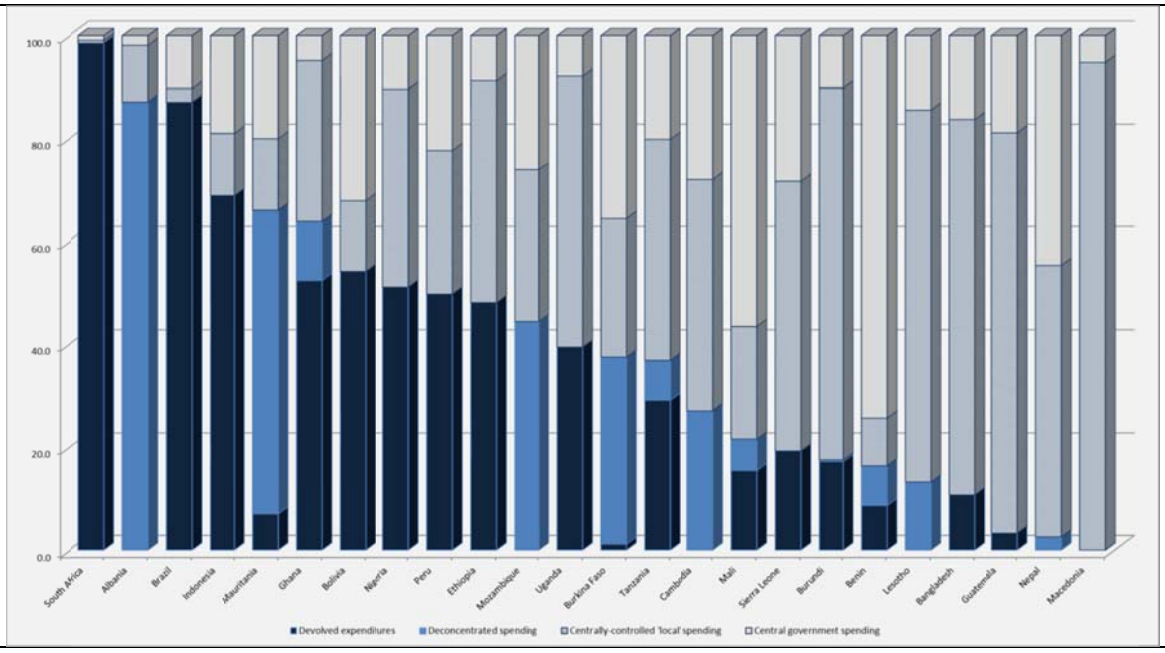
Figures 1 and 2 below present evidence on the importance of four types of spending in 24 developing and transition countries, covering devolved, deconcentrated, centrally-controlled localized spending and central spending for education and health. The figures show wide variations in the composition of local public sector expenditures, suggesting considerable differences across countries in the relative importance of these four kinds of spending. In fact, the data underlying these figures reveal that local government expenditures merely account for 35 percent of local public sector expenditures. This validates the initial concern that merely considering devolved expenditures gives an incomplete and likely biased view of public spending at the local level.

Figure 1 Education spending by type, 24 countries,2010



Source: Boex and Edwards (2014).

Figure 2 Health spending by type, 24 countries , 2010



Source: Boex and Edwards (2014).

3. What determines the level of decentralization and localization? A look at its determinants

The work within the public finance literature that considers the determinants of decentralization is relatively limited.[1] Finding its conceptual underpinning in the Tiebout hypothesis (1956), this literature speculates that countries which are large (both in terms of population as well as territory); countries that are more heterogeneous (e.g., ethnically, linguistically or culturally); countries that are wealthier; and countries that have a federal intergovernmental political structure are likely to be more decentralized in terms of the public sector's expenditures and revenues. Within the traditional public finance literature (which considers local government spending only), some empirical evidence is found in support of these propositions.

Using the newly available local public sector finance data, we would like to similarly explore the determinants of decentralization. In contrast to the previous empirical analyses, however, we are able to consider not only the determinants of devolution or devolved local government expenditures within a country, but also, the determinants of *all* localized public sector expenditures within a country. In addition, in contrast to the previous empirical analysis, the newly available data allow us to analyze this question on a sectoral basis for health and education, as different sectors have clearly different decentralization and localization patterns.[2]

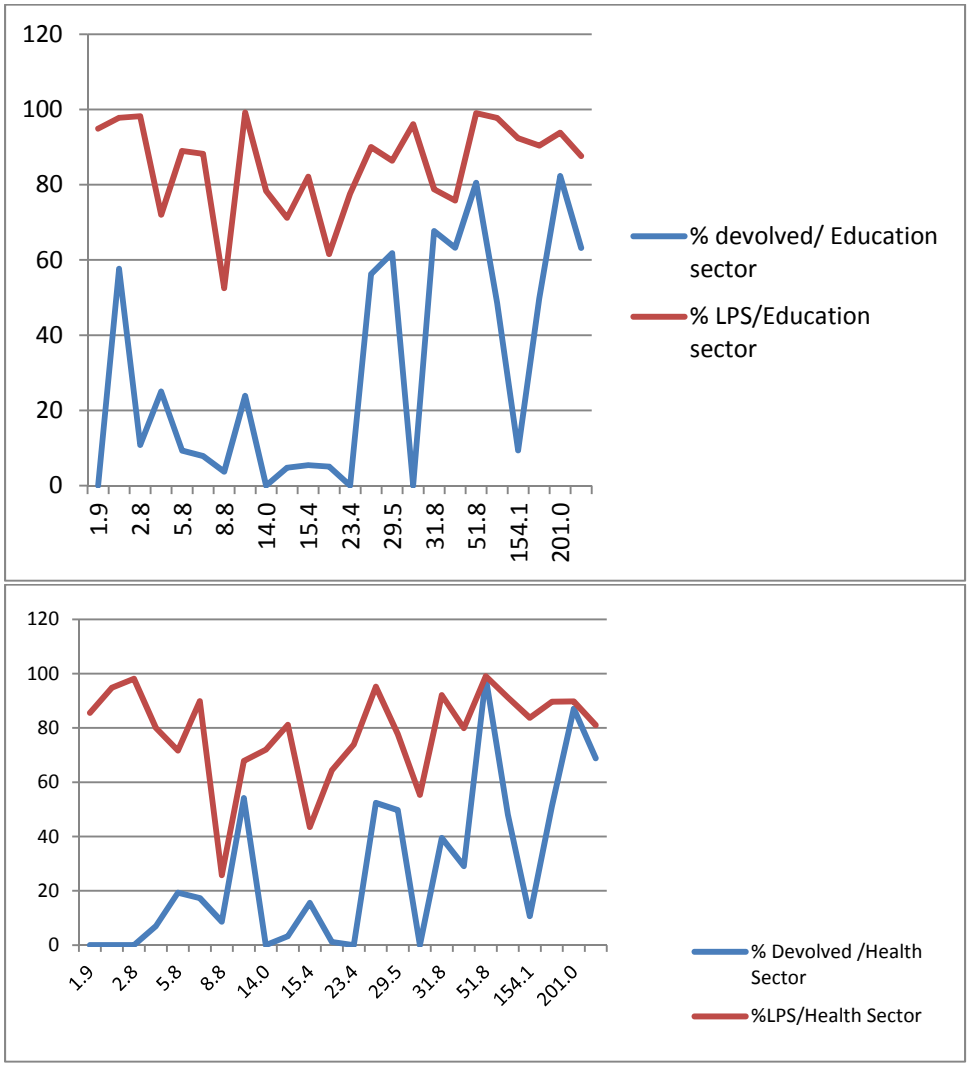
We begin by some simple graphical analysis for the education sector and the health sector. Our intent in the analysis is to identify any obvious patterns between the degree of decentralization and the various potential determinants of decentralization. In order to detect whether there are differences between the determinants of devolution and the determinants of localization, each graph compares the pattern of the local government share in total education spending (showing whether a factor is a potential determinant of devolution) with the pattern of the total local public sector's share in sectoral spending, taking into account all funding flows to the local level (showing whether a factor is a potential determinant of localization). In each figure, the left-hand-side graph reveals the situation for the education sector, whereas the right-hand-side graph shows the situation for the health sector.

First, we examine if there is any relationship between the devolved share of sectoral spending and the total localized share of sectoral spending on one hand, and the population size of the country and its wealth measured by GDP per capita (US $) on the other hand.

[1] For instance, see Bahl and Linn (????); <<other citations>>.

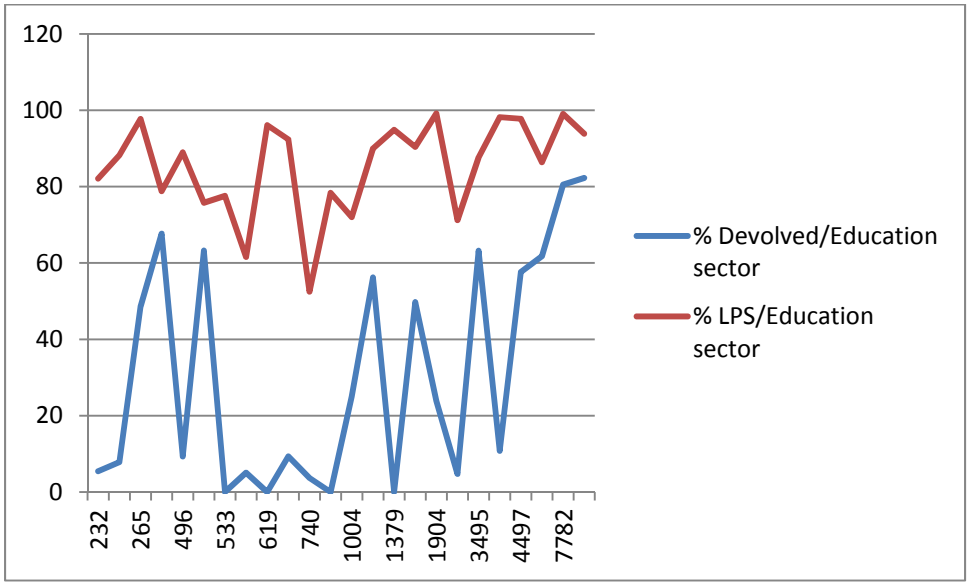
[2] As such, the results from the previous literature may be biased by the difficult-to-observe *de facto* expenditure assignments in different countries.

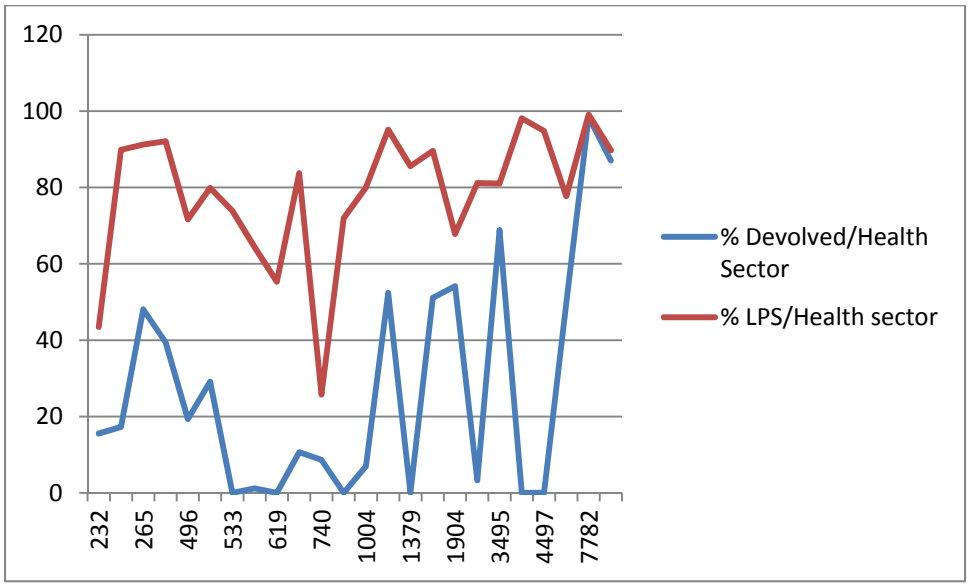
Figure 3 Share Local Government / LPS in sector spending (countries ordered by population size)



Source: Prepared by authors

Figure 4 Share Local Government / LPS in sector spending (countries ordered by per capita GDP)





Source: Prepared by authors.

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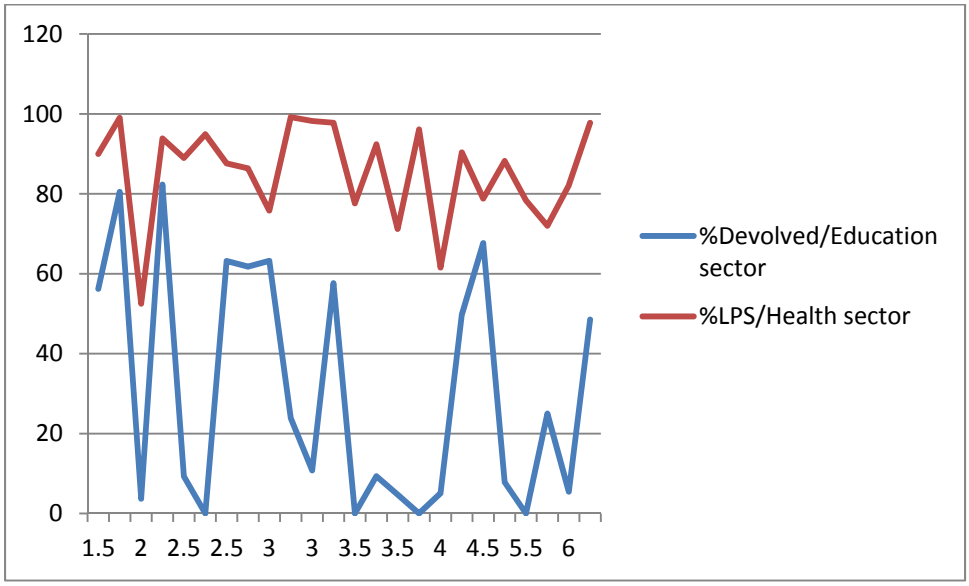
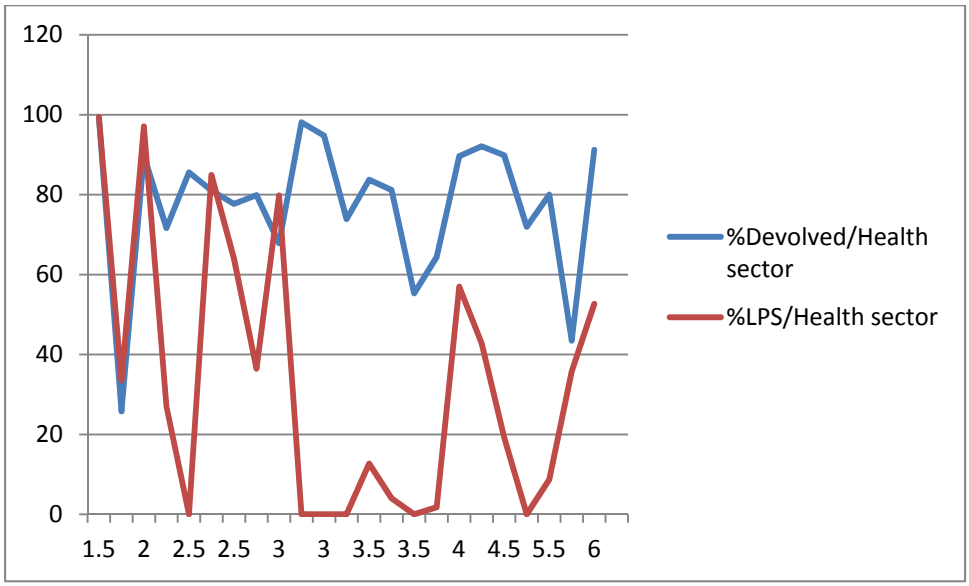
Neither figure 3 or 4 show a clear relationship between devolved spending and these two indicators.

We now turn to governance indicators using the Freedom House index for political representation and civil liberties, then two structural indicators: French tradition countries and federal countries.

Figure 5 Share Local Government in sector spending (countries ordered by Freedom House Index)

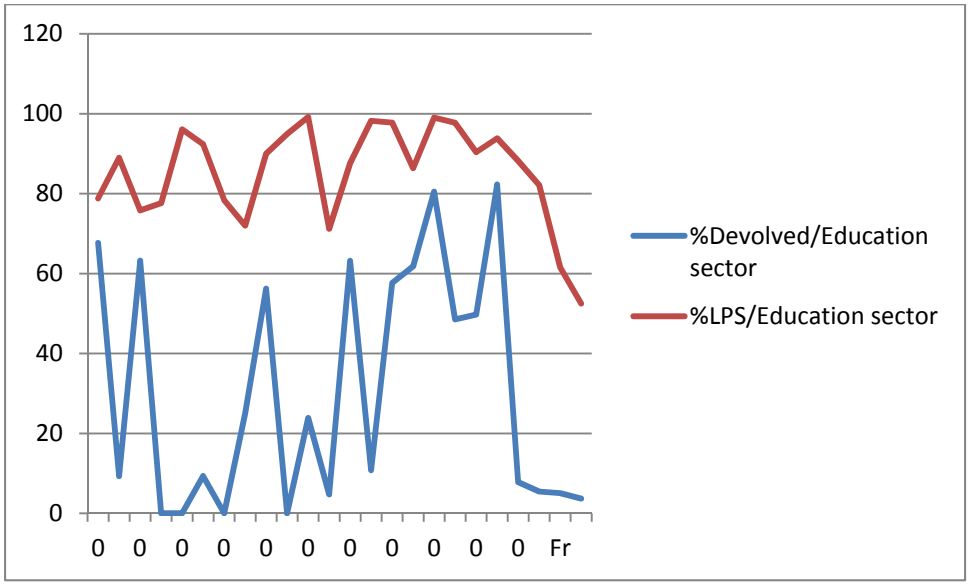


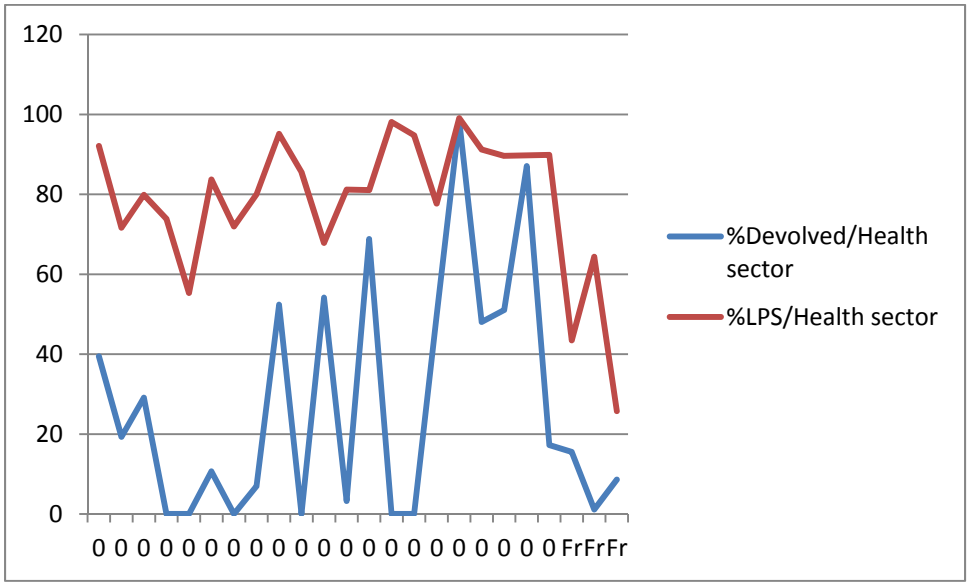


Source: Prepared by authors. Note: A decreasing lower Freedom house index indicates a more democratic country (greater political representation and civil liberties).

Finally we look at two institutional arrangements; French tradition country and federal de facto or de jure or not countries. French tradition countries do appear less devolved while federal ones are perhaps more devolved than others.

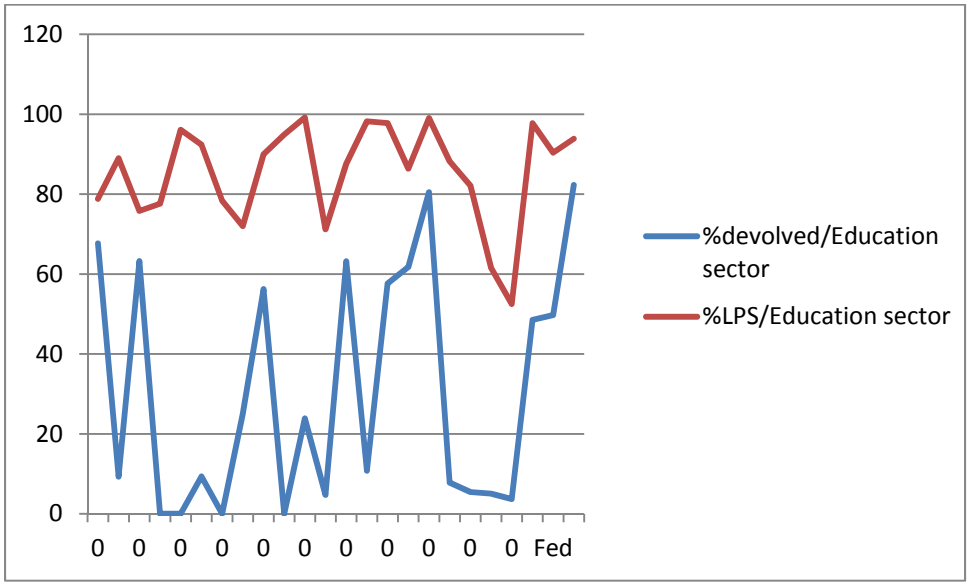
Figure 6 Share Local Government / LPS in sector spending (countries ordered by French administrative tradition)

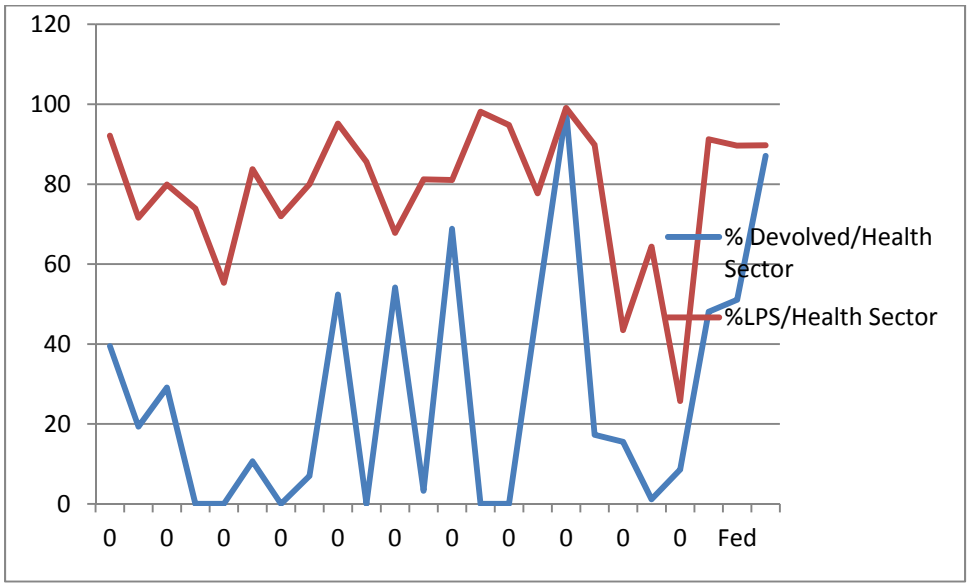




Source prepared by authors the French countries are Benin, Burkina Faso, Mali and Mauritania

Figure 7 Share Local Government / LPS in sector spending (countries ordered by federal system)





Source: Prepared by authors. Federal (or federal-like) countries: Brazil, Ethiopia and Nigeria.

Of course, graphical examination of bivariate relationships is not a substitute for more thorough quantitative analysis. We thus present a multivariate analysis of the combined education and health sample in table 1. This implies that each sector can be treated as an independent data point. We use three dependent variables: (i) devolved local government expenditures, expressed as a share of total sectoral expenditures; (iii) devolved local government expenditures, expressed as a share of total *local* sectoral expenditures; and (iii) total *local* sectoral expenditures expressed as a share of total sectoral expenditures. The first measure is a classic indicator of decentralization while the second and third measures are new indicators made possible by the new LPS data set.

In the regression analysis, we use the following independent variables as potential determinants of decentralization and localization:

- Population: we expect larger countries to show greater decentralization since it is more difficult to govern large countries in a centralized fashion;
- GDP: the impact of GDP per capita (in US$ equivalent) on decentralization measures is conceptually uncertain. On one hand, poor countries may concentrate their limited spending on centralized ''regalian'' functions (defense, law and order, border security and so on). Furthermore, the demand for localized public services may be weaker in low-income countries. On the other, lower-income countries may be able to obtain a greater impact of their limited social spending by decentralizing it;
- Government effectiveness: the causality between this variable and decentralization measures is not clear; decentralization may lead to more effectiveness (proxied by outcomes) but the quest for more effectiveness may lead to greater decentralization.
- Political representation and civil liberties: More democratic countries are expected to be more decentralized as this allows for a better matching of preferences and spending, something that less democratic systems will not care about;
- Size of sector/GDP: the effect of this variable is uncertain. On one hand, the larger the sector, the more interesting it is for central line ministry officials to control it to extract both political benefits, and perhaps economic rents. On the other, when the sector represents a large share of GDP, there is more to share so it may be easier to decentralize;
- Federal countries; we expect federal countries to be more decentralized as this is the political essence of federalism;
- French administrative tradition: given the traditional centralization of such countries, we expect them to have lower indicators of decentralization;
- Sector (health): a dummy variable taken on the value one for the health sector; given the technical nature of the health sector relative to that of education, we expect less of an impact on decentralization in this sector.

Table 1. Determinants of decentralization and localization

	(i) Devolved LG Spending (share of total sector)		(ii) Devolved LG spending (share of *local* sector sp.)		(iii) Local sector spending (share of sector spending)	
	COEFF	TSTAT	COEFF	TSTAT	COEFF	TSTAT
POP	**0.106**	**1.792**	**0.120**	**1.676**	0.024	0.693
GDP	0.002	0.962	0.001	0.708	0.000	0.517
GOV_EFF	**39.645**	**3.316**	**43.305**	**2.986**	0.709	0.100
FREEDOM	0.919	0.299	0.490	0.131	0.903	0.498
SECTOR/GDP	**-4.105**	**-1.832**	**-5.688**	**-2.093**	**3.538**	**2.674**
FEDERAL	17.342	1.459	17.187	1.192	3.139	0.447
FRENCH	-0.135	-0.015	5.399	0.501	**-24.001**	**-4.575**
SECTOR DUMMY	-11.903	-1.576	-13.172	-1.437	0.584	0.131
INTERCEPT	**55.458**	**3.390**	**68.784**	**3.466**	**68.385**	**7.078**
R^2	0.607		0.537		0.506	

Table 1 presents our initial regression results. We find that:

- The ability of the models to predict the degree of decentralization and localization (judged by the R^2) are quite reasonable;
- GDP and the indicator of political representation have no impact worth noting;
- Population has a positive and significant at the 10% level impact on the degree of devolution, but has no statistically significant impact on the overall degree of localization (the size of a country's local public sector). In other words, more populous countries tend to be more devolved, but not more localized.
- This initial set of results shows that there is a strong positive relationship between government effectiveness and the size of the devolved sector; however, as was noted above, the directionality of this relationship is unclear. Does this means that devolved countries have a more effective public sector, or that countries with more effective public sector systems are able to devolve more?
- The larger the size of the sectoral spending relative to the economy, the less devolved the sector becomes. At the same time, the larger the sector (relative to GDP), the more decentralized or localized it becomes. This appears to suggest that central government officials may be seeking out both greater efficiency and more influence for itself;
- Federal countries and countries with a French administrative tradition are not more devolved than others, but the latter have a smaller LPS. It is unclear whether this is due to anomalies in the reported data, or whether francophone countries are less effectively deconcentrated than other countries;
- All else equal, the health sector is not significantly different from education.

In sum, we find that the determinants of devolution (equations (i) and (ii)) appear to be quite different from the determinants of overall decentralization (or localization), as expressed in equation (iii). One concern with this initial set of regression results, however, is the lack of clarity over the directionality of government effectiveness. Therefore, as an alternative scenario, we ran the same set of regressions excluding the government effectiveness measure. These results are presented in Table 2.

Table 2. Determinants of decentralization and localization (revised specification)

	(i) Devolved LG Spending (share of total sector)		(ii) Devolved LG spending (share of *local* sector sp.)		(iii) Local sector spending (share of sector spending)	
	COEFF	TSTAT	COEFF	TSTAT	COEFF	TSTAT
POP	0.098	1.490	0.112	1.428	0.024	0.698
GDP	**0.004**	**2.490**	**0.004**	**2.128**	0.001	0.641
FREEDOM	-2.529	-0.782	-3.277	-0.854	0.842	0.499
SECTOR/GDP	-1.609	-0.682	-2.961	-1.057	**3.583**	**2.911**
FEDERAL	13.895	1.049	13.422	0.854	3.077	0.446
FRENCH	-6.233	-0.642	-1.262	-0.109	**-24.110**	**-4.757**
SECTOR DUMMY	-6.561	-0.795	-7.336	-0.749	0.679	0.158
INTERCEPT	**32.195**	**1.949**	**43.373**	**2.210**	**67.970**	**7.886**
R^2	0.497		0.431		0.506	

The exclusion of the government effectiveness indicator only has a minimal impact on the regression results for equation (iii). However, the results for equations (i) and (ii) are drastically impacted. In the

absence of government effectiveness, the positive impact of GDP on devolution increases and gains statistical significance, while the coefficient of determination drops. At the same time, the statistical significance of the sector's size (as a share of GDP) is lost.

4. The Local Public Sector: conceptual and institutional dimensions

The increasing use of the LPS concept, as well as the results above—which suggest that the patterns of decentralization and localization are considerably different when we use a broader metric of "local" spending—leads us to re-examine it from both a conceptual and institutional viewpoint. The following points appear worth raising as we explore how the analysis of LPS may be refined over time, or how its implications on public sector reforms may be more accurately interpreted:

1. The link between household incidence analysis and LPS analysis

The notion of the local public sector tries to capture what share of public sector resources somehow reaches the local level. However, rather than measuring the resources that are available locally, the LPS methodology to a large extent measures the share of resources that are sent down from the top . In order to improve the measurement of the local public sector, one could consider linking the measurement of the LPS to metrics used when examining the incidence by household of public expenditures. LPS spending is more easily attributable to specific households than non-LPS spending. Localization and attribution appear to be better linked to direct services than other types of services. Thus one may be able to get a better estimate of the "real" size of the LPS using household survey and household-based incidence analysis.

2. One needs to reflect on integrating LPS statistics into statistical frameworks / documents

The production of LPS data has been until now the purview of non-governmental research institutions. For this to be used more broadly it needs to be integrated into official statistical frameworks. One possible approach is to follow the approach used by the World Health Organization (WHO) for national health accounts. The issue then becomes who could/ should do this. Although there are global networks interested in different aspects of the local public sector—DELOG and United Cities and Local Governments come to mind—there is no "World Local Public Sector Organization" (WLPSO) that has a similar mandate to that of WHO. One solution would be to have the WHO for health and the UNESCO for education prepare such vertical sectoral expenditure profiles. Another is to attempt to generalize these accounts by having the OECD take them up as part of their decentralization work. Yet another approach would be to have the World Bank incorporate a more rigorous vertical analysis of public sector expenditures into its guidance on Public Expenditure Reviews (PERs).Finally, the IMF GFS dataset could incorporate this information. One should not be put off by initial institutional obstacles as changes in public statistics while slow can occur both by revising existing concepts and using new ones.

3. Is there a need to audit the various elements of LPS in an integrated fashion or not?

Currently, the Public Expenditure and Financial Accountability (PEFA) assessment framework largely deals with central government spending separately from local government spending. This means that PEFA assessments provide a fragmented and incomplete picture of the way resources are managed in the local public sector. If one only audits to ensure that financial flows respect the relevant public accounting rules then the answer to the question above is no although it may be efficient to audit simultaneously the various spending in a given territory. But if one carries out value for money audits (VFM), then the existence of joint production of a public service either in a layer or marbled cake fashion by the various interveners in a given area/sector becomes an important area that cannot be overlooked.

4. There is a need to account for localized spending in kind by residents.

One item "missing" from the current LPS accounts is in-kind services provided by local populations. It is the case in many countries that public investments at the local level require a contribution from either the community (whether from the village, school management committee, and so on) or from a formal local government. Such a local contribution is rarely made in cash. It is not usual for such a local or community contribution to be either in time (by local residents cleaning the worksite, carrying materials, and so on) or in kind (by local residents supplying local materials such as sand to be mixed with cement powder to produce concrete). To the extent that such in-kind contributions are not captured on-budget, the LPS metric may under-estimated public contributions to public service delivery. There is not much evidence on the importance of such in-kind inputs into the delivery of local services. Results for Bhutan show that in 2002, 70% of urban household but only 23% of rural household are exempted from this obligation. Of those required to provide in-kind labor, 86 % agree to do it personally while 13% pay someone else to do it. Labor services provided to the government were on average 23 days for performers of unpaid work. Such work covered a vast array of services; the two most common type of work were temple construction (33%) and school construction (25%); no other item exceeded 10%.

5. There is a need to account for direct spending by users (and not accounted for in either central or local government accounts)

There are in many countries school/parent committees present in the education sector at the elementary level and user committees present in the health sector at the basic health unit level. These committees may collect/administer funds that are kept in their own bank accounts yet used to complement the provision of services (for instance, by purchasing additional medicines, school materials, or by paying for local labor). Such expenditures are clearly part of local public sector finances, but in many countries, such finances are not recorded in either central or local government accounts. One interesting case is that of Madagascar. Primary education is formally a central government responsibility provided in a deconcentrated fashion following a classic French model. In 2010-2011, centrally hired primary school teachers (either as permanent civil servants or contractual employees) accounted for only 32% of all public school teachers; of the remaining 68% (called FRAM teachers), 48% were hired and paid in part by parental committees and in part by a subsidy paid directly to teachers by the central government and 20% were hired/paid by parent's committees, often with in kind payment (rice). These are inputs in the LPS that need to be captured.

6. There is a need to match the geography of spending by central and local governments to understand true disparities.

Until now the LPS numbers have been produced at the national level. But to fully appreciate the impact of LPS, one needs to match devolved expenditures and deconcentrated expenditures at the sub-national level. In fact, in line with the mantra that one should "measure what you treasure" in the context of the post-2015 sustainable development agenda, it is critical that countries do a much better job measure not only local public sector funding, but also localized development outcomes if the global development community is serious about achieving equitable access to public services and if it is serious about targeting those who are the poorest and the most under-served. Sectoral development outcomes as well as localized sectoral expenditures of all types should be tracked not only at the national level or at the regional level, but to the extent possible, all the way down to the local level.

This raises the question of what borders should one use to do this. Deconcentrated spending may not follow the same borders as devolved spending; this is often the case in health where health districts encompass more than one devolved municipality and do not correspond to other territorial

breakdowns. This often results in matching issues. Using a larger geographical unit may facilitate creating numbers but may do away with the impact of specific local political decisions. Using a smaller unit may require that the last level of disaggregation be made using approximations rather than exact spending. A challenge in this regard is that subnational coding information may reflect more about where the lower level financial management unit is located rather than where the spending actually takes place This poses a particular problem when control over salaries and other localized public spending is not disaggregated in treasury systems. The addresses of employees available in the pay system are those of the bank where payment is deposited which may reflect the first place of employment rather than the current place of employment

7. There is a need to study or design governance mechanisms

The LPS framework highlights the importance of both deconcentrated and devolved spending in providing localized services. One issue that thus emerges is how are the two types of spending meshed together to yield the best possible outcomes. One can find various mechanisms. In French tradition countries ,mainly in Africa, the 'tutelle' (tutorship) exercised by a central government agent such as the governor of a region or the prefect of a department on devolved entities such as municipalities combined with the coordination role that this same person has with respect to deconcentrated bodies may be brought together to create some coordination. But this will depend on factors such as: 1) the type of 'tutelle' which may be ex ante or ex post, of a veto rather than an active type and so on; 2) the type of coordination powers with officials of line ministries (e.g., agriculture, education, and so on) more or less responsive to the request of the governor or prefect. In this case, the mechanism by which such officials are appointed may matter; presidential or government appointees may have more sway than nominees of the Ministry of Interior. One interesting approach is that of Ghana (Gilbert et al, 2013) where locally elected councils called District Assemblies (Metropolitan, Municipal and Districts as such) are established and operated on a mixed basis. They function not only as a management body for deconcentrated central government services but also as a decentralized local government body for the district. These district assemblies are compose of 70% elected members an 30% appointed members (by the president of the country) while the District Chief Executive is appointed by the president of the country but with a supporting vote of at least 2/3rd of the council members

8. What is deconcentrated or devolved spending?

One of the consequences of the LPS approach is that in some sense the devolved or deconcentrated categorization does not matter. But in practice, they represent different budget lines, decision making arrangements and thus it does matter. For example how does one classify spending funded by conditional close ended tied grants to evolved entities that thus cannot move it between budget lines an cannot set its amount or destination. It is not even delegated spending since delegation implies some degree of freedom; locally executed central spending perhaps?

9. Where should projects directly funded by donors be classified?

Most likely under a separate heading given their lumpiness and differentiated budgeting rules. Not including them leads to an underestimation of LPS.

10. How should the degree of freedom of local officials of central G be taken into account?

Formally similar deconcentrated schemes may in practice match more or less the preferences of the local electorate. In some cases, not only is the overall investment budget set centrally but so is the list of specific projects while in others central officials assisted in some cases by a local advisory council can select the projects funded

11. What should one do about tax expenditures and regulations?

Tax expenditures may result in localized spending; presumably one can use the total value of a given tax expenditure and allocate it to local or central spending. Distributing this spending across local sub-units will most likely require assumptions unless one can find data in for example household expenditure surveys that allow us to link spending and tax expenditures. Regulations are a different issue as they generate both costs and output of services for the regulated with the cost of regulation and not the output being the usual item surveyed.

12 How should spending by parliamentarians be treated?

In some countries such as Kenya, (Hugounenq et al, 2013), one finds constituency funds such as in that case the Constituency Development Fund (CDF) that provide funds to Members of Parliament (MPs) to be spent on development projects. These funds are neither deconcentrated nor devolved spending; one could label them DD spending as they are from central funs yet a single member elected entity the MP has the power to choose like a devolved body.

5. Conclusion

The generalization of LPS data allows researchers to ask new questions but also requires more thought about where to go from the original starting point .In this paper we take up the one research question raised by Boex (2013, p6) and phrased as such: *A second research question might ask why the size of the Local Public Sector varies across countries. Do we see patterns in the vertical allocation of resources across sectors? Does a country's subnational governance structure influence the size of the Local Public Sector? For instance, is the share of Local Public Sector finances generally larger or smaller in predominantly devolved countries when compared to predominantly deconcentrated countries? What other factors help to determine the size of a country's local public sector?*

That done we reflect on some issues associated with LPS data and measurement.

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