Minimum Local Public Service Delivery Standards in Indonesia:
Fiscal Implications and Affordability Concerns

Blane D. Lewis[*]
Research Triangle Institute International

Summary: As part of its efforts to clarify sub-national expenditure assignments and improve local public service delivery, in the context of its on-going fiscal decentralization program, the Indonesian central government has begun to fix minimum standards at which local obligatory services must be delivered. This paper develops a model for estimating the fiscal requirements associated with minimum service standards in one local obligatory sector—education. The empirical results suggest that minimum participation standards in the local education sector may be affordable, given central and local commitment. But the fiscal needs associated with the full range of minimum service standards across all local obligatory functions are likely to be prohibitively expensive. This suggests that the government needs to rethink its approach to minimum standard mandates and focus on limiting the number of standards across obligatory tasks, reducing their minimum levels, and prioritizing a sub-set of obligatory functions for immediate action. A sector-by-sector approach to the development, financing, and use of minimum service standards is likely to have greater success than the comprehensive, multi-sectoral effort now being undertaken. Should this attempt fail, there is little choice but to employ minimum service standards in some less legally binding fashion such as targets or guidelines in the context of local planning, budgeting, monitoring, and evaluation.

Key Words—Southeast Asia, Indonesia, fiscal decentralization, local government, service delivery, minimum performance standards.

1.   Introduction and Background

Starting in fiscal year 2001, in the context of the Indonesia's new fiscal decentralization program, sub-national governments assumed major new expenditure responsibilities.[1] Substantial functions for provinces have been specifically enumerated in law and regulation.[2] Local government (kabupaten/kota) service responsibilities, on the other hand, have been defined via a "negative list"; that is, kabupaten and kota have essentially become responsible for all public services that the central and provincial governments are not explicitly charged with delivering. Such an approach is not uncommon across countries of the world and is often referred to as the *intra vires* or general competencies method of service assignment.[3]

At the same time, the Indonesian decentralization legislation highlighted eleven important areas of local government service responsibility: public works, health, education and culture, agriculture, communications, industry and trade, capital investment, environment, land, cooperatives, and labor. This list comprises the so-called "obligatory

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[1] Smoke (2002) discusses some basic issues related to expenditure assignment in Indonesia.
[2] See Law 22 of 1999 regarding Regional Government Administration and Government Regulation 25 of 2000 regarding Central Government Authorities and Autonomous Provincial Government Authorities.
[3] The contrary method of assignment is sometimes referred to as *ultra vires*. Under this approach local government tasks are explicitly itemized and local governments are prohibited from undertaking functions not on the list. Ferrazzi (2002a) provides a review of countries following various approaches to service assignment.

authorities" of kabupaten/kota governments. As is clear, (most of) the items on this list are perhaps more analogous to "sectors" than they are "functions" per se. The exact functions for which kabupaten/kota have become responsible, within those obligatory sectors, have so far been left ambiguous. It is often argued that, in general, such ambiguity creates problems regarding the consistent delivery of services across local governments, hampers the development of hard-budget constraints, and limits accountability at the local level, among other things.[4]

Now, the Ministry of Home Affairs (MoHA) is leading an effort, in which both relevant central technical ministries and regional governments have been participating, to further specify and clarify expenditure assignments across levels of government. In addition to making expenditure responsibilities more precise and clear, MoHA and technical departments have begun identifying explicit minimum service standards associated with obligatory responsibilities. That is, the government is setting standards at which compulsory local public services should be delivered.[5] The standard-setting process has been conceived of as an integral part of the clarification and operationalization of obligatory functions.[6] In addition, by fixing minimum service standards, the central government hopes to provide incentives for local governments to improve and maintain local public service delivery performance.

The existence of public service performance standards is not uncommon in countries around the world and such standards are used in a variety of ways.[7] The exact purposes to which minimum standards of service delivery are to be put in Indonesia is still being debated inside the government. Most officials at MoHA involved in the standard-setting exercise argue that standards should function as mandates, that is, that the central government should hold the regions legally responsible for achieving minimum service delivery standards, presumably within some relatively short period of time. Others, especially at the sub-national level, would prefer that such standards serve simply as guidelines or targets for national and/or regional governments to use in planning, budgeting, monitoring, and evaluation.[8]

The need to consider the fiscal implications of setting minimum standards of service delivery at the kabupaten/kota level has not been obvious to many involved in the process.[9] MoHA's initial inclination has been to immediately begin developing the legislation required to mandate minimum levels of service delivery without first examining questions related to the affordability of standards. The prevailing attitude among officials from MoHA seems to have been that the Ministry of Finance (MoF) would necessarily have to make funding available to achieve minimum standards once they became legally authorized—through the creation of new special purpose grants which would be managed by MoHA itself.

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[4] Vojnovic (1999) examines the negative impact of vague service classifications in Nova Scotia, Canada. World Bank (1995) elaborates on the general problems accompanying unclear service assignments.

[5] Friedman (2002) provides a description and analysis of the history, current situation, and preliminary outcomes of the minimum standard setting exercise, as organized by MoHA.

[6] See Ferrazzi (2002b) for a discussion of this point and a general examination of service assignment and minimum standards in Indonesia.

[7] Ammons (1995) provides an introduction to the types and uses of standards.

[8] See Scheps (2000) for an examination of how service performance standards can be used to improve local planning and resource allocation.

[9] Parry (1997) discusses the importance of linking minimum education standards with sufficient sources of finance in Chile. Duncombe and Yinger (1998) examine the link between state performance standards and state aid to school districts in the US.

MoF has not been involved in the MoHA-led effort to set minimum service standards. Although many MoF bureaucrats are clearly concerned about the possible negative implications of financing minimum standards for the state budget, ministry officials have not taken a pro-active role in attempting to examine the potential fiscal impact in this regard. MoF appears content to wait until forced to act on this particular issue. The lack of collaboration between MoHA and its efforts on service-side issues and MoF and its concern with fiscal matters is a general problem that began with the design of the overall decentralization framework itself and has persisted ever since.

The paper has two main objectives. The first purpose is to estimate the physical capital and routine and development fiscal implications of adopting (some) minimum local public service delivery standards in Indonesia. Here the focus is on local education services. The education sector has been selected for examination due to its importance in local government budgets and because of its current significance in broader national policy discussions.[10] The second goal of the paper is to evaluate the affordability of minimum standards for education, in particular, and across all obligatory sectors, more generally.

The rest of the paper is organized as follows. First, minimum standards in education are described and those selected for use in this study are highlighted. Second, the empirical model used as a basis for determining physical and fiscal resource requirements associated with minimum service delivery standards in education is specified and estimated; estimates of needed resources are produced and discussed. Third, the issue of affordability of minimum standards is examined for education, in particular, and for all obligatory sectors, more generally. Finally, the paper closes with a summary of the main points and draws some conclusions important for the continuing development of central government policy related to minimum service delivery standards.

2.   Minimum Standards in Education

As noted above, the government has begun preparing minimum standards of service delivery for the obligatory functions of kabupaten/kota governments. This is being carried out in the context of the MoHA-led (and donor-supported) effort usually referred to as the "model building exercise". In addition to MoHA, major technical ministries and sub-national governments are also participating in the standard setting exercise.

Minimum service delivery standards across all relevant sectors are at varying stages of development. Those for education (along with those for health, perhaps) are at an advanced state of readiness, at least from the government team's point of view, and have become something of a model for other sectors. Development of minimum standards in all sectors is on-going and implementation of standards, however construed, would not be expected to begin before at least a couple of fiscal years.

Minimum standards developed in the context of MoHA's model building exercise for the local education sector are organized, in part, by level of schooling: primary, junior

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[10] The Indonesian parliament has recently amended the Constitution to insist that government expenditure on education should not be lower than 20 percent of consolidated public sector budgets and has also recently passed a new law, after long debate, outlining national goals in the education sector.

secondary, and senior secondary, for example. There are 18 minimum standards listed for each of those three levels of education (comprising two obligatory functions—one for primary and junior secondary and one for senior secondary). Standards include those related to participation rates, student drop out rates, percentage of students passing on to next level of schooling, percentage of students succeeding in standardized examinations, final level of education attained by students, number of qualified teachers, quantity and suitability of physical infrastructure and other inputs (e.g. books), and appropriateness of school management systems, among others.

In addition, the relevant government officials have also set minimum standards for other obligatory functions in the education sector: pre-school (eight standards), special education (34 standards), adult education (24 standards), vocational education[11] (18 standards), sports (22 standards), youth activities (six standards), teacher training (21 standards), education statistics (two standards), and community involvement in education (three standards). In total, therefore, there are 10 obligatory functions and 192 separate minimum standards in the local education sector. The sheer number of obligatory functions and standards is striking, as is the lack of prioritization among functions and standards.

In general terms, standards can be categorized as input or output (or outcome) standards; and the latter can be classified as either related to the quantity or the quality (and, perhaps, distributional equity) of output. Some of standards listed above for primary, junior secondary, and senior secondary education are input standards (the supply of books and teachers, infrastructure) and some are output standards (participation, passing to next level of school, successful examination, final level of education attained). Some of the output standards relate to quantity of education services delivered (e.g. participation) and others relate to quality of education (e.g. success rates on standard examinations); it appears that still other, unspecified quality standards are proxied indirectly by some of the input standards (adequately trained teachers, satisfactory books, appropriate school administration), although this has not been made explicit.

The empirical study here concentrates on determining the fiscal needs associated with minimum standards related to levels of participation in primary and junior and senior secondary education. The main reason for focusing on the participation standard is because of its basic importance in education, in general, and because of accessibility of relevant data. The approach developed below could plausibly be extended to include other types of performance standards, either those enumerated above or different ones, if and when data on appropriate measures become available.

Minimum participation standards are operationalized in this study through use of the participation rate. The participation rate is defined as the percentage of all appropriately aged children that are actually attending school.[12] According to official figures, as of fiscal year

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[11] Vocational education and senior secondary education together make up a single obligatory function in education.

[12] The participation rates used in this study are the "pure" (*murni*) participation rates, as defined by the Ministry of National Education (MoNE). The pure rate is equal to the number of children in the relevant age category that are attending the appropriate level of school divided by the total number of children in the age category. The official age groups for primary, junior secondary, and senior secondary school in Indonesia are seven to twelve years, thirteen to fifteen years, and sixteen to eighteen years, respectively. MoNE also defines "crude" (*kasar*) participation rates. The crude rate is equal to the total number children attending a particular level of school divided by the number of children in the relevant age category for that level of school.

2002, participation rates in primary, junior secondary, and senior secondary school were: 83.6, 72.9, and 45.6 percent, respectively.[13] The overall school participation rate is 66.4 percent. Minimum participation rates for the three categories of school have been stated by the government team charged with developing the standards. Those minimum standards are 90, 80, and 60 percent for the three levels, respectively. The weighted average (i.e. the average of the various specified rates weighted by the relevant number of school-aged children) of the stated minimum participation rates is approximately 80 percent. The latter figure is used as the minimum participation standard in this analysis.[14]

3.   An Empirical Model for Estimating Physical and Fiscal Requirements

This section of the paper begins by specifying and estimating the empirical model used to determine local government education physical infrastructure and expenditure requirements associated with minimum standards.[15] Second, estimates of physical capital and current and development fiscal resources required needed to meet minimum standards are produced.[16] The section closes with a brief discussion of the results.

Specification and Estimation of Model

The empirical model used in the estimation of physical capital and routine and development fiscal resources required to meet minimum standards is given by the following two equation system.[17]

$$y_{1i} = \beta_1'x_i + \varepsilon_{1i} \tag{1}$$

$$y_{2i} = \alpha'y_{1i} + \beta_2'x_i + \varepsilon_{2i} \tag{2}$$

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[13] All data on school-aged children, school-aged children attending school, and participation rates are from Badan Pusat Statistik (BPS) for year 2002.

[14] Of course the fact that a local government attains an 80 percent overall participation rate does not necessarily mean that it has reached the minimum standard set in each of the three levels of schooling. It just means that the local government has, on average, reached the minimum participation rate. The 80 percent figure is used as a proxy for minimum participation standards across all education levels in order to keep the analysis relatively simple.

[15] Local governments are not the only source of finance for local education. The central government also makes expenditures on local education (although it should not be, according to recent legislation—see the discussion in section 4 of the paper) as do parents. See James, King, and Suryadi (1996) for an examination of public and private finance of education in Indonesia before decentralization. There are no nation-wide data on central government and parental education expenditures at the local level. As such, the paper is forced to abstract from questions related to these kinds of local education expenditures.

[16] Regional government expenditures in Indonesia have traditionally been divided into routine and development budget categories. Development expenditures may include but are not limited to capital expenditures. The quantitative significance of capital expenditures in development budgets is not known. Regional public capital expenditures are assumed by many to have been very limited since fiscal decentralization started in 2001. This paper abstracts from questions regarding the extent of capital expenditure in development budgets and treats routine and development expenditures as the same.

[17] Rubenstein (2002) discusses various methods of estimating fiscal requirements associated with a variety of education goals and standards in the US context. He identifies three types of models: professional expert approach; exemplary district approach; and econometric, cost function approach. The methodology used here in this paper is of the latter type, although it differs somewhat from previously used models. See Duncombe and Yinger (1997) for a cost function approach to estimating fiscal needs of inner city schools in the US.

where y_1 and y_2 are endogenously determined variables representing local government physical infrastructure in education and routine and development education expenditure, respectively; x is a vector of explanatory variables; α, β_1, and β_2 are coefficients to be estimated; and ε_1 and ε_2 are the standard error terms. Endogenous and exogenous variables in the model comprising equations (1) and (2) are discussed in more detail next.

The measure employed in this study for physical infrastructure in education is based on the number of primary school classrooms in kabupaten/kota.[18] There is no information on the number of classrooms for junior secondary and senior secondary schools. The number of classrooms in primary education is used as a proxy for physical capital in the local education sector and is operationalized via the construction of an index.[19] The index for physical capital assets in education is defined by the following.

$$Cap_i = \left(\frac{Class_{Max} - Class_i}{Class_{Max}} \right) * 100 \qquad (3)$$

where Cap_i is the capital index for kabupaten/kota i, $Class_{Max}$ is the maximum number of classrooms across all kabupaten/kota, and $Class_i$ is the number of classrooms in kabupaten/kota i.

In the system of equations defined by (1) and (2), the variable y_1 is the local government capital asset index per school-aged child and y_2 is total local government expenditure on education sector activities per school-aged child. The exogenous variables in x comprise the school participation rate, total local government revenue per capita, gross regional domestic product per capita, the percentage of the population falling below the poverty line, cost of living index, (physical) area, population density, a dummy variable that indicates whether the local government is a kota (=1) or a kabupaten (=0) and a dummy that denotes whether the kabupaten/kota is on Java-Bali (=1) or off Java-Bali (=0).[20] All variables used in the empirical analysis here are listed and defined in Table 1 below.

[Table 1 here]

Equation (1) posits that the level of infrastructure per school-aged child is a function of the school participation rate, among other variables. The assumption is that as the participation rate increases, the amount of education capital assets required per child also increases, all other things remaining equal. And equation (2) asserts that routine and development expenditure per school-aged child is a function of the participation rate and the level of infrastructure, along with other variables. It is assumed that as the participation rate increases, per child education expenditure also increases, because of a rise in the required number of teachers, teaching materials, and other inputs, for example. In addition, it is assumed that as the level of capital infrastructure per child increases, per child expenditure in education also rises, as a function of increased operations and maintenance costs, inter alia.

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[18] The data on number of classrooms are based on a census carried out by MoNE's regional deconcentrated offices in the year 2000.

[19] While the physical size of schools varies significantly across kabupaten/kota, the size of a classroom appears to be somewhat standardized. The standardization of classroom size allows the number of classrooms to be more meaningfully compared across places than would otherwise be the case.

[20] Participation rate data are from BPS, as already noted; all other data are from MoF and are for the year 2001.

Both equations control for local government revenues, gross regional product, poverty, cost of living, area, density, local government location, and local government type.

Note that the system described in equations (1) and (2) is triangular or recursive. As such, it might be expected that each equation in the system could be estimated separately, say by ordinary least squares (OLS). Although equation (1) can be estimated by OLS, equation (2) cannot be so estimated, as will be further discussed below.

Data are available on all variables in equation (1) for all local governments and so the equation may be estimated by standard techniques, as noted just above. OLS regression results are presented in Table 2 below. The table shows the estimated coefficient for each of the independent variables, together with the associated t value, and an indication of the coefficient's significance. At the bottom of the table, the adjusted R^2, log likelihood test statistic, and the significance of the test statistic are provided.

[Table 2 here]

As the table shows, the participation rate is a significant and positive determinant of physical capital in the education sector, as expected. Local government revenues, jurisdiction area and density, and urban status are also significant explanators the level of capital assets in education. The direction and magnitude of the influence of these latter variables can be seen in the table but these matters are not further discussed here.

The estimated model in equation (1) can be used to determine required levels of physical infrastructure per school-aged child associated with minimum participation standards in each kabupaten/kota. This is done by substituting the value 80 for the participation rate for all those places in which the participation rate is actually less than the minimum standard and using the actual participation rates for all other places; in addition, the actual values are used for all other variables for all places. The resultant predicted value is named $Capmch_i$. The latter times the number of school-aged children in each kabupaten/kota provides the total required physical infrastructure under minimum standards; this variable is called $Capm_i$. These derived variables can be used to estimate aggregate physical capital requirements in the education sector across all local governments under the minimum standards scenario. They can also be employed to help estimate routine and development fiscal resources needed by kabupaten/kota to meet minimum standards. Both these questions will be taken up below, after equation (2) is estimated.

Data on the dependent variable in equation (2) are only available on a sample of kabupaten/kota for the year 2001. It is typical that not all kabupaten/kota submit budgets to the central government that include a sectoral breakdown of expenditures; for fiscal year 2001, only 283 out of 366 kabupaten/kota submitted expenditure budgets broken down by major sector. Obviously, the sample of places that submitted budgets in the desired manner may not be considered a random sample of local governments. As such, equation (2) cannot be estimated in a consistent and unbiased manner by OLS.

But the equation can be estimated by sample selection regression techniques. Sample selection methods provide the needed adjustments to the specification and estimation of

models that employ non-randomly drawn samples.[21] A typical sample selection model comprises a selection equation and selected equation(s). The selection equation in the present model is given by:

$$z_i = \gamma' x_i + u_i \tag{4}$$

where z is a binary choice variable that designates whether fiscal year 2001 education expenditure data are available for the particular kabupaten/kota (=1) or not (=0), x is the same vector of exogenous explanatory variables as above, γ are parameters to be estimated, and μ is the error term.

Equations (4) and (2) together comprise the sample selection model where the former is the selection mechanism and the latter is the selected equation. The model assumes that the error terms, and μ and ε_2, have a bivariate normal distribution, both with mean zero, standard deviations of one and σ_ε, respectively, and correlation ρ.

Consistent estimation of the parameters in equations (4) and (2) can be based on a two-step procedure due to Heckman (1979). First, the selection mechanism is estimated via probit methods to obtain estimates of γ. The latter are then used to compute $\hat{\lambda}_i = \phi(\hat{\gamma}' x_i) / \Phi(\hat{\gamma}' x_i)$ where ϕ and Φ are the standard normal probability density and cumulative distribution functions, respectively and x are the exogenous variables in the selection equation.[22] Second, the selected equation is estimated by least squares regression of the dependent variable on the independent variables and $\hat{\lambda}$. This procedure produces consistent estimates of the parameters.

The regression results for the sample selection model are provided in Table 3. The table is broken down into two panels. The first panel presents the results of the probit estimation of the selection mechanism (equation 4) and the second panel provides the details of the two-stage least squares estimation of the selected equation (equation 2). For the explanatory variables in each equation, information on the estimated coefficient, the associated t value, and an indication of the statistical significance of the estimated coefficient is provided. In addition, for each of the regressions, the likelihood ratio test statistic (L-Ratio TS) is given and its level of significance is shown.

[Table 3 here]

Panel A demonstrates that kabupaten/kota in the sample have significantly worse participation rates, lower per capita revenues, and higher levels of per capita gross regional domestic product than do local governments that are not in the sample. Among other things, these results illustrate the potential for selection bias when using non-random samples.

Panel B shows that the participation rate is a positive and significant explanator of local government routine and development education expenditures per school-aged child, as expected. Note, however, that the level of physical infrastructure does not appear to be

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[21] See Greene (2000) for an in-depth discussion of a range of sample selection models. For applications to Indonesia see Lewis (2003a) and Lewis (2003c).
[22] As noted in the text, in the present case, a common set of exogenous variables is used in the selection and selected equations. This creates no problems for the consistent estimation of the coefficients.

significant in the determination of education expenditures. This result is most likely a function of strong association (i.e. multicollinearity) between physical infrastructure and some of the other independent variables, as demonstrated in the OLS regression above. Other variables that are of apparent importance in explaining variation in local government education expenditure include local government revenues, gross regional domestic product, poverty, cost of living, area, and urban status. Again the sign and magnitude of the estimated influence can be seen in the table but these results are not discussed further here. Finally, the table demonstrates the significance of lambda, the variable constructed as part of the two stage procedure described above; this demonstrates the importance of correcting for selection bias associated with using non-random samples. The results of the sample selection regression will be used below in the estimation of routine and development fiscal needs associated with specified standards.

Estimation of Physical Capital and Routine and Development Fiscal Requirements

Actual physical capital in education is proxied by the index of capital assets (Cap_i) defined at the outset of the paper and by the index value per school-aged child ($Capch_i$), as described above. Recall that total and per child kabupaten/kota capital requirements associated with minimum standards previously derived are $Capm_i$ and $Capmch_i$, respectively. A moment's reflection suggests that the actual physical capital that would obtain in a particular local government jurisdiction under the minimum standards scenario would be given by the maximum value of $Capm_i$ and Cap_i in that place. This is because a local government would need at least the minimum amount of capital but would not be expected to destroy any amounts in excess of those minimum amounts. The actual aggregate physical capital under minimum standards would therefore be given by the sum of those maximum values across all local governments. Formally:

$$Capm_i^* = \sum_i max(Capm_i, Cap_i) \tag{5}$$

where $Capm_i^*$ is the actual physical capital in education that would exist under minimum standards. The per child counterpart to this variable is named $Capmch_i^*$.

Derived physical capital implications are provided in Table 4. As the table shows, actual physical capital requirements in education under the minimum standards scenario increase by 16.5 percent over the present levels. It is not possible to value the capital requirements in monetary terms.

[Table 4 here]

Predicted values of the dependent variable in estimated equation (2) (using actual values for all variables and local governments) can be used to estimate routine and development expenditure on education per school-aged child for all kabupaten/kota. A sum of the latter times the number of school-aged children across all places provides an estimate of aggregate education expenditure for local governments in 2001. Equation (2) can also be used to estimate the per child routine and development fiscal needs associated with minimum standards for all kabupaten/kota. Predicted values of the dependent variable in equation (2) based on the maximum of minimum standard and existing values for participation rates, the values of $Capmch_i^*$ for infrastructure per school-aged child, and existing values for all other

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variables for all kabupaten/kota provide such "counterfactual" estimates. The sum of those values times the number of school-aged children across all places provides an estimate of aggregate fiscal requirements associated with minimum standards for 2001.

A review of the main outcomes of the analysis with regard to routine and development fiscal needs as described above appears in Table 5 below. The table summarizes the data on current and minimum standard participation rates in education. In addition, the table provides estimated actual education expenditures in 2001 and estimated minimum requirements for the same year. Finally, the table supplies information on total local government expenditures for 2001(actual) and estimated requirements based on minimum standards of service delivery in education.

[Table 5 here]

As the table shows, kabupaten/kota fiscal needs in education increase from an estimated actual of Rp 28.5 trillion to Rp 33.4 trillion under the assumption of minimum service delivery standards. This represents an annual increase of Rp 4.9 trillion rupiah or 17.1 percent over current levels. Total APBD expenditure budget needs rise from Rp 70.1 trillion to Rp 74.9 trillion, an increase of 7.0 percent.

Discussion

As noted, the infrastructure and fiscal requirements estimated here are based on minimum standards related to increasing the participation rates of school-aged children only. The estimates do not explicitly consider the many other quantity and quality standards associated with other obligatory functions in the education sector as developed in the context of the MoHA-led model building exercise and as briefly outlined at the beginning of this paper. These other minimum standards may be accounted for indirectly if increasing access to education is empirically associated with improvements vis-a-vis those additional standards. But this cannot be tested directly without additional data. Of course, if such data were available they would be used to operationalize the additional standards and estimate fiscal implications directly in the context of this model.

A second qualification to empirical results obtained here relates to the question of expenditure efficiency. The examination in this paper has been based on actual physical capital and actual local government expenditures in kabupaten/kota. These data represent past and current local government expenditure behavior and performance in the education sector. As such, they do not explicitly account for desirable and achievable increases in expenditure (production) efficiency, for example. If efficiency could be improved, then less money would be needed to meet standards, all other things remaining the same.

Interestingly, the empirical results derived here do, however, implicitly recognize some apparent increases in production efficiency as participation rates rise. It can easily be shown that, given the current school participation rate of 66 percent, kabupaten/kota spend about Rp 768 thousands per pupil, on average; under the minimum participation standards scenario examined here, whereby a minimum of 80 percent of school-aged children are attending school, average per pupil expenditure decreases to Rp 737 thousands. Whether further increases in expenditure efficiency could be realized is a question that cannot be answered here.

Finally, estimated growth in total APBD expenditure requirements based on presumed increases in fiscal needs in education does not consider potentially needed and possible shifts in budget allocations from other sectors to education. To the extent that gains in efficiency via shifts in budget allocations could be reaped, then fiscal resources required to meet minimum standards would be less than the estimates of such provided above, ceteris paribus.

4.   Affordability of Minimum Standards

While not insignificant, the estimated increase in capital infrastructure and fiscal resources required to meet minimum participation standards in primary, junior secondary, and senior secondary education would not appear to be excessive. Might the incremental needs associated with these participation standards plausibly be judged to be affordable? With a view to shedding some light on this question, consider Table 6 below, which shows kabupaten/kota revenue for 2001, by source.

[Table 6 here]

First, notice total revenues of kabupaten/kota governments in 2001, as shown in the table: Rp 79.5 trillion. This amount, together with total expenditure of local governments, Rp 70.1 trillion, as shown in Table 5, implies total unspent balances for the fiscal year of Rp 9.4 trillion. The accumulation of significant unspent balances at the kabupaten/kota level under fiscal decentralization is well known in Indonesia. Many analysts have argued that these unspent amounts are a function of delayed intergovernmental fiscal transfers, especially those related to natural resource revenues; late payments leave insufficient time to make expenditures and result in unspent balances at the end of the fiscal year, it is claimed. It is true that natural resource revenue sharing with the regions has not yet been carried out in a timely manner. However, as a general explanation for large unspent balances the phenomenon of late transfers would appear weak. First, consider that local governments are allowed to (and many do) borrow to cover temporary cash flow problems; as such, delayed transfers need not necessarily result in a postponement of local expenditures.[23] Moreover, large unspent balances also exist among local governments that do not receive much natural resource revenue transfers and so the problem would appear to be more common than the conventional wisdom would suggest. An alternative explanation for the problem of large unspent balances is that many local governments simply may have too much money vis-a-vis official expenditure responsibilities and/or no clear idea of how to spend fiscal resources wisely. It is not possible to provide a definitive judgment on the reasons for large local unspent balances at this time; this is a question that merits more research.

In any case, unspent balances are considerable, more than enough, in the aggregate, to cover the estimated fiscal requirements associated with minimum participation standards in education (i.e. Rp 4.9 trillion), for example. Of the 308 local governments that would require additional funds to achieve minimum standards, according to the simulations conducted here, 195 of them had unspent balances for 2001 that exceed estimated fiscal requirements to achieve minimum participation standards. The aggregate short-fall of those places for which

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[23] Local governments know how much they will receive in transfers from all sources at the beginning of the fiscal year and so uncertainty regarding amounts of granted funds can be no excuse.

unspent balances are insufficient to cover additional requirements associated with the minimum standards is Rp 2.4 trillion. That is, under the assumption that unspent balances could be used to help achieve minimum standards, aggregate associated fiscal needs, as originally estimated above, are reduced by half.

Next consider intergovernmental transfers to local governments. As the table shows, total transfers to kabupaten/kota in 2001 amounted to Rp 69.3 trillion, of which the general purpose grant (Dana Alokasi Umum—DAU) contributed Rp 54. 4 trillion. The DAU dominates local budgets, making up almost 70 percent of total local revenues.[24] Fiscal requirements associated with minimum participation standards in education are indeed small compared to the DAU. Estimated fiscal needs amount to just nine percent of the total DAU pool of finance; total fiscal requirements under the assumption that unspent balances could be devoted to meeting minimum participation standards, are just 4.5 percent of the DAU. As such, it is not surprising that many analysts have targeted the DAU as a means of funding of minimum standards in education.[25]

Of course, there is no guarantee that unspent balances could actually be used by local governments to meet fiscal requirements associated with minimum standards in education. And there is perhaps even less certainty that the DAU would be increased with a view to supporting minimum standards in just one sector, given its purpose of equalizing kabupaten/kota fiscal capacities to meet resource needs related to all local service responsibilities. Moreover, even if the DAU pool of finance were increased in order to fund increased education expenditures associated with minimum standards, there is no assurance that enhanced DAU block allocations (i.e. general purpose funds), would, in the event, be spent to help meet those standards. Still the analysis here does lend credence to the general point of view that minimum participation standards in education would be affordable, given central and local commitment to meet those standards.

Having said this, however, it is important to stress that the infrastructure and fiscal needs associated with the remaining stated minimum standards in education (189 in number) have not yet been examined and incorporated into the estimation of fiscal needs.[26] Moreover, the capital and fiscal requirements associated with minimum standards in the other ten obligatory sectors have not yet been taken into account. While it is therefore premature to make a definitive judgment about the affordability of the entire set of minimum standards, if the needed resources are anything like those estimated here for school participation rates, then the immediate affordability of the full range of standards across all obligatory functions and sectors would appear dubious.

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[24] Lewis (2001) and Lewis (2002) examine issues related to the pool of finance and distribution of the DAU for fiscal years 2001 and 2002, respectively.

[25] See McClure (2002) and Dom (2002) for the suggestion that an augmented DAU could be used for financing needed increases in education expenditures.

[26] MoNE has recently undertaken an empirical examination of the fiscal requirements associated with its "Education for All (EFA)" program. The EFA goals differ somewhat from those embodied in the minimum standards, as discussed here. See McClure (2002) for a description of standards under EFA. In any case, MoNE estimates that needed quality and equity improvements to both primary and junior secondary might cost local governments an additional 10 trillion rupiah per year (in 2003 prices), on average, between 2003 and 2014. (The costs of improving the quality of education at the senior secondary level were not estimated.) See McMahon (2003) for the details.

This suggests that the MoHA-led group needs to go back to the table and reconsider the set of minimum standards as presently constructed. The relevant officials might consider a combination of three options to make standards more affordable. First, the number of minimum standards could be reduced within obligatory functions, focusing only on those of highest priority. Second, the "minimum" levels at which standards are fixed could be lowered. Third, some sub-set of kabupaten/kota obligatory functions and sectors could be prioritized for immediate action. A fewer number of standards, set at lower levels, for a more limited range of obligatory functions/sectors would be relatively more affordable, all things considered. The standard-setters might think of the above three measures as resulting in a transitional arrangement; a greater number of standards, set at higher levels, for additional functions could be phased in over time, if and as funds permit.

The view here is that progress on the above actions by the standard-setting team is unlikely, however. Advancement on these fronts would imply that the MoHA could lead participating technical ministries in a collaborative effort to: (1) credibly estimate fiscal requirements associated with at least the most important standards; (2) systematically reduce the number of standards and set more reasonable minimum levels for them in light of derived fiscal implications, perhaps; and (3) prioritize a sub-set of minimum standards and functions for immediate action, while drawing up plans for phasing in the implementation and financing of remaining standards. But there is, as of yet, no firm agenda among MoHA officials even to estimate the fiscal implications associated with minimum standards. While some officials involved in the exercise see the utility of the costing exercise, and the probable need to reduce the number and level of standards and prioritize some sub-set for initial execution, others do not. Moreover, even if there were an accepted plan to carry out the above three enumerated tasks, successful implementation of the strategy would be in doubt. It must be admitted that central government's ability to develop and implement complex multi-sectoral plans that are based on some notion of ordered and marginal change over time is, at this stage and for the most part, nonexistent. As a result, a collaborative, consensus-based, incremental, and phased approach to developing and financing minimum standards across all sectors, while perhaps ideal, would appear to be practically unworkable.

A more practicable line of attack to the further development, implementation, and financing of mandated minimum service standards might be to rely on sector-specific initiatives. Here, individual sectors would take the lead in developing packages of costed-out minimum standards to present to MoF for financing, in the context of annual budget negotiations, for example. The implicit competition among individual central ministries might reasonably be expected to support the objective of reducing the number and level of standards across all sectors, as officials attempt to enhance the affordability of standards with a view to securing needed finance. It would also most likely result in a natural prioritization of functions and sectors, as less capable and less interested central agencies withdraw from the process. While some observers might worry that important local services could be given short-shrift under such a procedure, in reality, the services that are almost universally viewed as being most important from a public welfare point of view—education, health, public works—are linked to technical ministries that are relatively more capable.

In addition, a sector-based approach would be consistent with the development and use of typically advocated financing mechanisms in this context—categorical grants. Such grants, either with or without matching components, are usually promoted by economists and public finance specialists as the preferred means of transferring money to lower level

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governments in support of the achievement of nationally mandated minimum standards.[27] Because money can be tied—that is, provided for specific tasks—categorical grants are well equipped for getting sub-national units to spend money on particular central government sectoral or functional objectives. Furthermore, the design and implementation of categorical grants to fund the routine, development, and capital needs in support of minimum standards would benefit greatly from the significant sector and project-level expertise that exists in many technical ministries. This higher level of relevant knowledge related to particular local public services would presumably lead to better outcomes than might be the case if minimum standard transfers were organized and run by an institution with broader concerns such as MoHA, for example.

Finally, the sector-led method also might help to secure the needed funds to operationalize the categorical grants. That is, in the context of sectoral department-MoF negotiations, the latter might well be able to persuade the former to exchange their "regional budgets" for categorical grants. The sectors' regional budgets are used to fund central expenditures in the regions on tasks that have recently become the responsibility of sub-national governments. Such expenditure is, in fact, illegal according to recent decentralization legislation but nevertheless endures.[28]

There is no information available on the current size of regional budgets of technical ministries.[29] In fiscal year 2000, however, prior to the implementation of decentralization, such expenditure was estimated to be on the order of 45 trillion rupiah across all sectors, 20 trillion rupiah for routine functions (DIK—Daftar Isian Kegiatan) and 25 trillion rupiah for development activities (DIP—Daftar Isian Proyek).[30] While regional DIKs appear to have been subsequently expunged from central agency budgets, along with the liquidation of technical department deconcentrated agencies and the attendant shift of relevant employees to regional governments, the associated regional DIPs seem not to have been sufficiently cut, if cut at all. MoF has, so far, proved unable so reduce technical ministries' development budgets in the required manner.[31] It is at least possible, however, that the technical agencies might be willing to exchange their regional budgets for categorical grants if that were the only way they could secure the finance required to support the implementation of minimum standards.

The adoption of a sector-based and categorical grant approach to minimum standards would not be without difficulties of course. First, categorical grants of the kind advocated here do not presently exist and would have to be created.[32] The creation and

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[27] See Shah (1994) for a typical prescription in this regard.

[28] Central agencies are prohibited by law to make direct expenditures in the regions on decentralized functions. See Law 25 of 1999 on Fiscal Balance between the Center and Regional Governments.

[29] Dom (2002) reports that total DIP funds for MoNE in 2001 amounted to Rp 8.2 trillion; the proportion of the total allocated for regional DIP activities is not known, however.

[30] See Lewis (2001) for these estimates.

[31] This is at least partly because the National Planning Agency (BAPPENAS), the ministry that until recently took the lead in preparing the development side of the State Budget (APBN), was not particularly inclined to reduce central sectoral agency budgets from which they also benefited. As of fiscal year 2003, MoF has officially assumed control over preparing both routine and development sides of the APBN.

[32] A categorical grant does exist in Indonesia: the Special Allocation Fund (DAK). The DAK is designed to fund capital expenditures, for the most part. While the pertinent regulation allows DAK funds to be used to cover some associated operations and maintenance costs related to the investment, it can only do so for a period not to exceed three years. The grant's inability to fund routine costs of service delivery in a comprehensive and

operationalization of new intergovernmental grants is not something that can be done quickly in Indonesia; it might take a couple of years to operationalize, even after agreement on their establishment were reached.[33] Another important obstacle to this strategy is that many officials inside the technical ministries would prefer to continue to operate their regional budgets as opposed to becoming engaged in the design and implementation of categorical grants. This is largely because sectoral ministries have more control over funds associated with former than they would have over funds related to the latter. Unlike centrally administered regional budgets, any categorical grant finance would be deposited directly into local budgets and managed to a large extent by local authorities themselves.

The risks involved with the sector-based method suggest the need for additional sources of finance to support the achievement of formally authorized minimum standards. An obvious pool of funds that could potentially be used to finance standards is the own-source revenues of local governments. Currently kabupaten/kota own-source revenues are minimal; they make up only around seven percent of local revenue budgets, as Table 6 shows. Enhancing local revenues would clearly be welcome from a variety of points of view, including as a means to help finance minimum standards. Increasing local own-source revenues would be best accomplished by awarding local governments with rate control over some significant local tax base, such as that for property.[34] Eventually, more of the administration of the property tax could also be turned over to local governments.

There at least four positive features related to decentralizing the property tax in the current context. First, doing so would not significantly deplete revenues available to finance central expenditure since the vast bulk of associated funds (91 percent—the remaining nine percent is used to support collections in the field) is already transferred to sub-national governments anyway; as such, the action should not be opposed by those in charge of state budget matters inside the MoF. Second, local governments, given their proximity, better knowledge about the property tax base, and perhaps greater motivation, might be expected to generate greater amounts of property tax revenue relative to those that have been produced by the central government. Third, providing local governments with rate control over a decent source of marginal revenues like the property tax would assist local officials themselves in discerning and responding to changing local preferences regarding the desired amount and/or quality (i.e. standards) of various public services, thereby enhancing efficiency in the process. Fourth, residents would be more apt to attempt to hold local governments accountable for delivering the services that they want at the standards they desire since tax payments would be more explicitly linked to service delivery.

There are, however, two significant impediments to increasing local own-source revenues via decentralizing the property tax as suggested above. The first problem is one internal to MoF: the Directorate General of Tax (DG Tax) does not want to relinquish control over the tax. This stance appears to be a function of its desire to avoid the employment uncertainty that decentralizing the property tax would create among its staff. DG Tax has managed to win the debate against pro-decentralization forces inside MoF on this particular

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sustainable fashion would appear to make it an inappropriate mechanism to use in supporting minimum service standards. See Government Regulation 104 on Balancing Funds.

[33] See Duncombe and Yinger (1998) for a sobering account of the complexities of structuring grants to achieve some minimum standards in local education in the US.

[34] The property tax is a central tax in Indonesia. See Lewis (2003b) for an appraisal of the central government's administrative performance related to the property tax.

issue for many years now. The second obstacle related to decentralizing control over the property tax is that the proposal to do so lacks a strong constituency outside MoF. Support from other central departments, for example, is not obvious. And thus far, neither regional governments nor citizen groups have voiced much support for the idea of a local property tax. Like local governments the world over, most kabupaten/kota prefer to have resources granted to them (with as few strings as possible) as opposed to going through the effort to generate revenue through highly visible and unpopular local taxes. And like citizens the world over, Indonesians are not eager to pay higher property taxes. In the end, the utility of decentralizing the property tax is something about which a forward-looking MoF will have to convince just about everybody else. Past experience suggests that this is an action that is not likely to come soon.

5.   Summary and Conclusions

The paper has developed and implemented a simple model for estimating local government infrastructure and routine and development fiscal requirements associated with attaining minimum education participation standards. The initial empirical evidence produced here suggests that an increase in physical capital in education of just over 15 percent might be required to meet the minimum participation rate of 80 percent (on average) for primary, junior secondary, and senior secondary school-aged children. In addition, the results indicate that kabupaten/kota might also need to increase routine and development education sector expenditure by about five trillion rupiah per year in order to reach the desired level of participation; this level of expenditure implies a rise of just over 15 percent over current local government amounts devoted to education and an increase of about seven percent to total local government expenditure budgets.

The above-mentioned fiscal requirements might reasonably be judged as affordable, given current kabupaten/kota (excess?) revenues and small, seemingly feasible intergovernmental additions to those resources. But it must be remembered that these estimated fiscal needs represent requirements associated with just a small subset of the total number of minimum standards in education. Moreover, education is just one of eleven obligatory sectors for which standards are being set. While the fiscal implications of adopting minimum standards in other obligatory functions/sectors have not yet been examined, it is probably safe to conclude that fiscal needs associated with the full range of minimum standards across all obligatory functions and sectors would turn out to be prohibitively expensive.

If the government is genuinely interested in the design and implementation of minimum standard mandates, its only real option is to reduce the number of standards within sectors, lower the levels at which standards are set, and prioritize some sub-set of kabupaten/kota obligatory functions/sectors for immediate action. These actions would enhance the affordability of minimum standards, in general.

It is unlikely that a comprehensive and coordinated approach, of the kind currently being attempted under the leadership of MoHA, would lead to an achievement of these objectives. This conclusion is based on the current lack of consensus among the most influential participants in the model building exercise regarding the importance of the objectives outlined above and, more to the point, on the general inability of central

institutions to design and implement complex multi-sectoral plans. A sector-by-sector method is likely to have a relatively better chance of succeeding. Interdepartmental competition for scarce resources might facilitate needed reductions in the number and levels of service standards and result in a natural (and substantively sound) prioritization of obligatory functions and sectors. The sector-based approach is compatible with the design and implementation of categorical grants to support the achievement of minimum standards. Obtaining the necessary funding for new categorical grants at the required levels would be challenging, but if individual technical ministries were willing to exchange their (illegal) regional budgets for specific grants, then the chances of acquiring at least some of the needed finance would increase. A resolution to the issue of financing minimum standards depends, therefore, very much on what specific technical agencies themselves are willing to do.

In any case, a decision one way or the other on the question of creating and funding new sectoral categorical grants does not absolve MoF of its responsibility to provide regions with greater access to and control over important local tax bases, such as that for property, at some point in the not too distant future. Such funds would prove invaluable in financing more and/or better local public services—in education and other in sectors.

If the sector-based approach to the development and financing of minimum standards proves impossible for one reason or another, then only a second option remains. This alternative posits that minimum standards function in a less legally binding fashion such as general guidelines or targets for national and regional governments to employ in the context of planning, budgeting, monitoring, and evaluation. Employing minimum standards in this fashion may prove very constructive, if taken seriously, as other countries have shown.[35]

But such a use seems not to be what many actors involved in the standard-setting process have in mind. Some of these participants have set their sights on a third possible option: order the achievement of minimum standards without regard to questions of the availability of finance. Experience from many countries around the world, however, demonstrates the problems associated with such unfunded mandates.[36] Such experience indicates that unfunded minimum standards in Indonesia would end up as de facto targets and/or that they would be used by the center to control and manipulate local governments. The former result reduces to option two above, arrived at via another route and devoid of the necessary intent and planning to make it work. The latter outcome would certainly conflict with the government's stated goals of decentralization and needs to be aggressively avoided.

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[35] See Liner, Dusenbury, and Vinson (2000) for a description of the successful application of performance targets among some states in the US. Bernstein (2001) reviews the experience of developing and using performance measures among selected US local governments.
[36] Breman (2002) provides a thorough discussion of the mandate problem, with a focus on the US.

Table 1: Variable Names and Definitions

<u>Endogenous Variables</u>

OLS Equation

Capch   Natural logarithm of the value of capital assets index per million of school-aged children.

Selection Equation

Inout   Binary choice: 1 if local government produced expenditure budget in 2001 with education sector breakdown, else 0.

Selected Equation

Expch   Natural logarithm of local government routine and development expenditure on education per school-aged child for 2001.

<u>Exogenous Variables</u>

All Equations

Rate	Participation rate: percentage of school-aged children in school, 2002.
Revpc	Natural logarithm of local government revenue per capita, 2001.
Grdppc	Natural logarithm of gross regional domestic product per capita, for 2001.
Pov	Percent of population classified as poor, 2001.
Col	Cost of living index, 2001.
Area	Natural logarithm of area of the jurisdiction in square kilometers, 2001.
Density	Natural logarithm of population per square kilometer, 2001.
Kota	Dummy for urban status: 1 if local government is a kota, else 0.
Java	Dummy for region: 1 if local government is located on Java-Bali, else 0.

Table 2: Ordinary Least Squares Regression Results

Dependent Variable: Capch

Variable	Coefficient	t value
Constant	5.166	5.255 *
Rate	0.006	3.092 *
Revpc	0.194	2.744 *
Grdppc	0.018	0.435
Pov	0.000	-0.176
Col	-0.002	-1.089
Area	-0.116	-2.330 *
Density	-0.158	-2.838 *
Kota	-0.363	-3.276 *
Java	-0.034	-0.435
Adj R^2	0.365	
Log-L TS	161.664	
Sig:	0.000	

* and ** denote that the coefficient is significant at the 0.05 and 0.10 level, respectively.
Source: Author's own calculations.

Table 3: Sample Selection Regression Results

Panel A: Dependent Variable: Inout

Variable	Coefficient	t value
Constant	6.276	1.594
Capch	-0.227	-1.066
Rate	-0.022	-1.805**
Revpc	-0.580	-2.250*
Grdppc	0.275	1.738**
Pov	0.006	0.791
Col	-0.005	-0.626
Area	-0.090	-0.440
Density	0.125	0.561
Kota	0.479	0.939
Java	-0.351	-0.989
Log-L TS	60.847	
Sig:	0.000	

Panel B: Dependent Variable: Expch

Variable	Coefficient	t value
Constant	4.834	3.340*
Capch	0.101	1.487
Rate	0.011	4.825*
Revpc	0.364	2.960*
Grdppc	-0.185	-3.567*
Pov	-0.007	-3.366*
Col	0.005	1.796**
Area	-0.111	-1.789**
Density	-0.065	-1.002
Kota	-0.259	-2.157*
Java	0.063	0.691
Lambda	-0.265	-1.749**
Log-L TS	150.463	
Sig:	0.000	

* and ** denote that the coefficient is significant at the 0.05 and 0.10 level, respectively.
Source: Author's own calculations.

Table 4: Summary of Results on Kabupaten/Kota Capital Requirements in Education, Actual and Based on Minimum Standards, FY 2001

	FY 2001 Actual	FY 2001 Based on Minimum Standards	Percent Increase
Total Physical Capital (Sum of Index Values)	6,603.8	7,692.7	16.5

Source: Author's own calculations.

Table 5: Summary of Results on Kabupaten/Kota Fiscal Needs in Education, Estimated Actual and Based on Minimum Standards, FY 2001

	FY 2001 Actual (Estimated)	FY 2001 Based on Minimum Standards	Percent Increase
Participation Rate (Percent)	65.9	80.0	14.1
Total Fiscal Needs in Education (Rp Bln)	28,532.9	33,411.2	17.1
Total APBD Fiscal Needs (Rp 000)	70,066.2	74.944.2	7.0
Education as Percent of APBD	40.7	44.6	3.9

Source: Author's own calculations.

Table 6: Kabupaten/Kota Revenues, Fiscal Year 2001

Source	Rupiah (Bln)	Percent
Carry-Over From Previous Year	2,157.0	2.71
Own-Source Revenues	5,232.9	6.59
Central-Local Transfers	69,280.2	87.20
of which General Purpose Grant	54,401.3	68.47
Other Revenues	2,782.7	3.50
Total Revenues	79,452.8	100.00

Source: MoF Regional Finance Information System.

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