Education Sector Financial Simulation Model (EFSM)
Overall EFSM Architecture

Temporal horizontal axis

<table>
<thead>
<tr>
<th>Target year</th>
<th>Reference year</th>
<th>Projection year</th>
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</thead>
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Resources block

“Pre-school” spending block

“Primary” spending block

“Higher Education” spending block

Summary

Trade-offs between levels

Funding gap
Understanding Interrelationships between variables

Breakdown of resources

GDP

Tax pressure = Public resources / GDP

Public resources

Share to education = Ed. current expenses / Total public resources

Education spending

Share to = Prim. current expenses / Ed. current expenses

Spending allocated to primary

Intersectoral trade-offs

Arbitrage intrasectoriel
Sample Spending Block

Enrolment objectives

Pupil-teacher ratio / modes of organization

Compensation and recruitment policy + % expenses excl. teacher salaries

School-aged pop.

Pupil population

Teachers

Cost of teachers

Expenses excl. teacher salaries

Operating expenses

Classrooms

School construction costs

Capital expenditures

Total spending
Review of Quantity/Unit Cost Trade-offs

Budget_{cycle_i} = \text{population}_{cycle_i} \times UC_{cycle_i}
## Review of Unit Cost Trade-offs

\[
\text{UC primary} = \frac{\text{Average salary}}{\text{PTR}} \times \frac{1}{1 - \alpha}
\]

where \(\alpha\) = share of spending excl. salaries of active classroom teachers

\[
\text{UC primary} = \frac{\text{Average salary}}{\text{PTR}} + \text{CU G&S}
\]

### Impact of policy choices regarding salaries and allocations for goods & services on the pupil-teacher ratio for a given unit cost (600 MU)

<table>
<thead>
<tr>
<th>Teacher type</th>
<th>Number of pupils per class</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Average teacher salary (MU)</td>
<td>(15 000)</td>
</tr>
<tr>
<td>Average spending on « goods &amp; service » per pupil (MU) = (\text{UC}_{G&amp;S})</td>
<td>50</td>
</tr>
<tr>
<td>100</td>
<td>30</td>
</tr>
<tr>
<td>200</td>
<td>37.5</td>
</tr>
<tr>
<td>400</td>
<td>75</td>
</tr>
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The Purpose of the Education Financial Simulation Model (EFSM)

A technical costing tool

- Calculates resources for the education sector
- Assigns costs to policies over the medium to long term (multiple options)
- By comparing resources to needs (funding gap) it informs budget decision (trade-offs) and allows the volume of financial resources required from donors to be evaluated
A communication/negotiation tool for consensus building

► Between Education Ministry technicians and policy-makers to define a medium term development policy for the sector
► Between the Ministry of Education and other ministries (Finance, Planning, other technical ministries) for MTEF trade-offs
► Between the Ministry of Education and social partners of school (parents, teachers’ unions, civil society):
  ⇒ supports management of conflicts over the rights and interests of the various stakeholders
► Between the Ministry of Education and partners in development
  ⇒ increase the credibility of the education sector in international negotiations aimed at procuring additional resources (Initiative Fast Track initiative, debt forgiveness programmes – HIPC Initiative)
The EFSM is not...

A substitute for analysis of the education sector

A comprehensive sectorial study should be carried out:

– to define the structure of the model (which must fit the country’s education system),
– to effectively consolidate the various estimates providing information on the base year of the model (using all information available at the national level: school data, financial data, etc.)
  ⇒ making it possible to obtain breakdowns of unit cost and other values
– to identify the potential relevance of various education policies to be implemented (to structure policy scenarios)
The EFSM is not...

► **A substitute for actions** to be implemented to ensure that the envisaged projections come to fruition

« The model is used to evaluate the cost of education policy options but does not provide guidance on implementing those options »

*For example:* Salary policy issues *(the indicatives framework stipulates an average teacher salary of 3.5 per capita GDP units but how is this to be achieved?)*

► **A tool for addressing management issues**

*For example:*

– Teacher recruitment must be reconciled with issues relating to teacher assignment at schools

– Education quality is not to be addressed in terms of resources but rather actual achievement levels in classroom
Examples of Use of the EFSM

- Integrated into CSR sectorial analyses
- Supporting MTEF development
- Supporting development of 10-year plans
- Supporting development of framing notes using various education policy scenarios
- Supporting Fast Track endorsement
  - calculation of specific funding needs for universal primary education prior to launching the initiative
  - calculation of gaps in selected countries
Limitations of the EFSM as a tool

► Technical limitations
  – Assigning values for the starting years of projection
    • Real-time school data rarely available
    • Data on donor support frequently missing or inadequate
      (overall project costing approach vs. parametric costs in model)
  – Insufficient consideration of the system’s physical and financial absorption capacity

► Institutional limitations
  – Poor integration (compartmentalization of ministries of fin./ed.)
  – Inadequate linkage of EFSM to MTEF
  – Limited flexibility in budgetary trade-offs