

Education Sector Financial Simulation Model (EFSM)



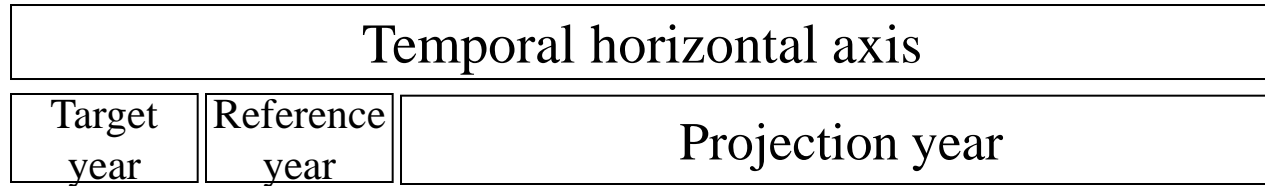
United Nations
Educational, Scientific and
Cultural Organization



International Institute
for Educational Planning

Pôle de Dakar
EDUCATION SECTOR ANALYSIS

Overall EFSM Architecture



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

$$\text{Tax pressure} = \frac{\text{Public resources}}{\text{GDP}}$$

Public resources

$$\text{Share to education} = \frac{\text{Ed. current expenses}}{\text{Total public resources}}$$

Education spending

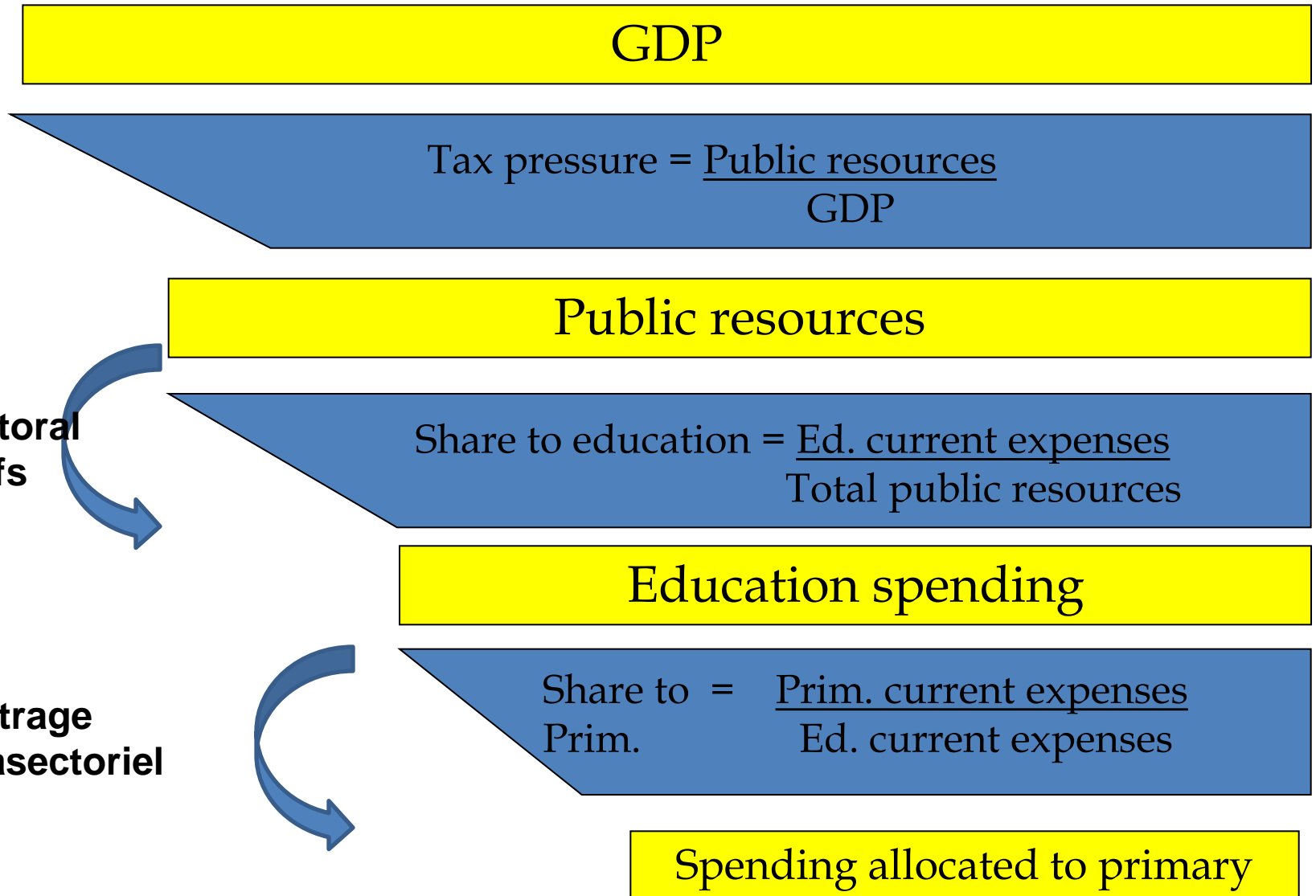
$$\text{Share to Prim.} = \frac{\text{Prim. current expenses}}{\text{Ed. current expenses}}$$

Spending allocated to primary

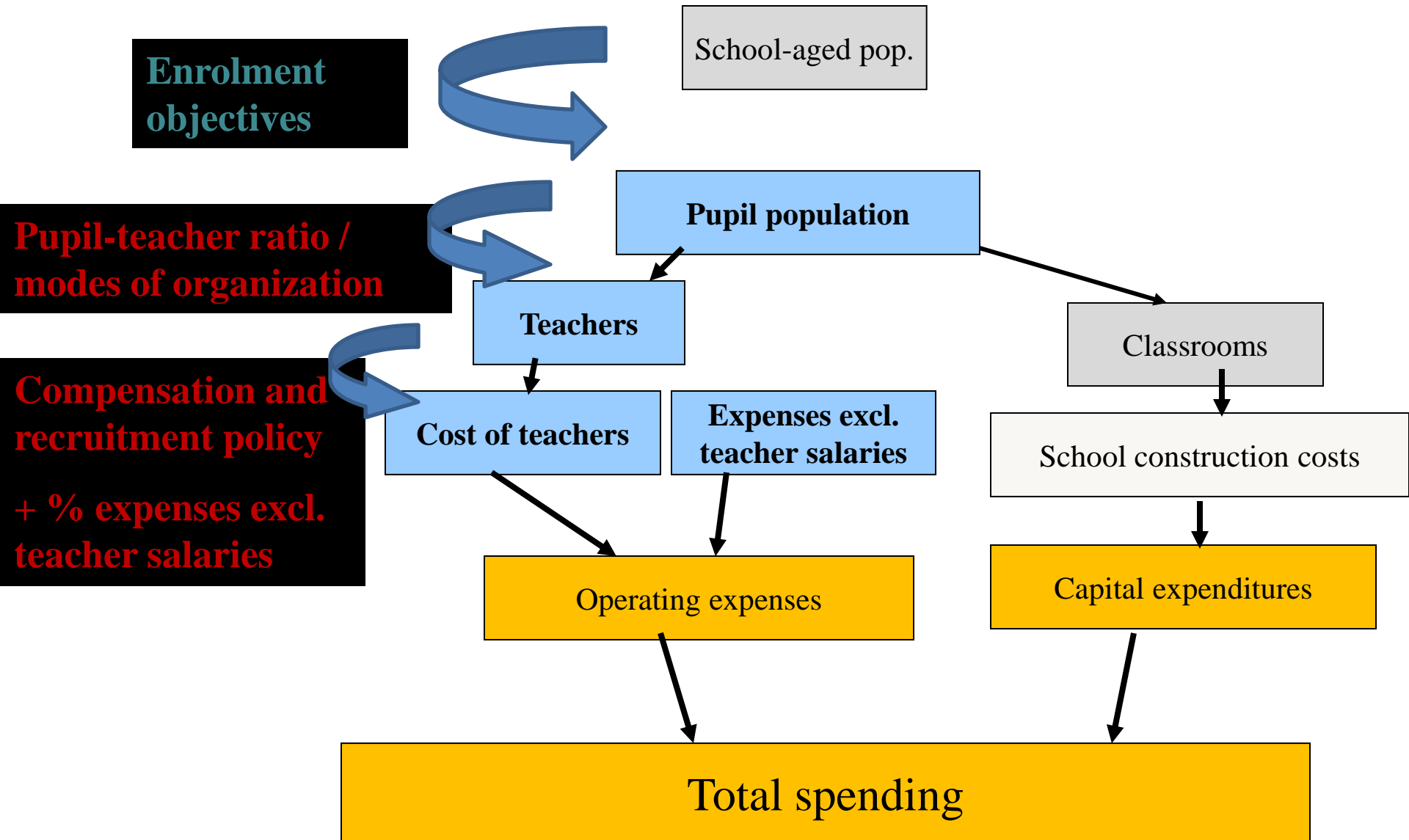
Etc.

Intersectoral
trade-offs

Arbitrage
intrasectoriel

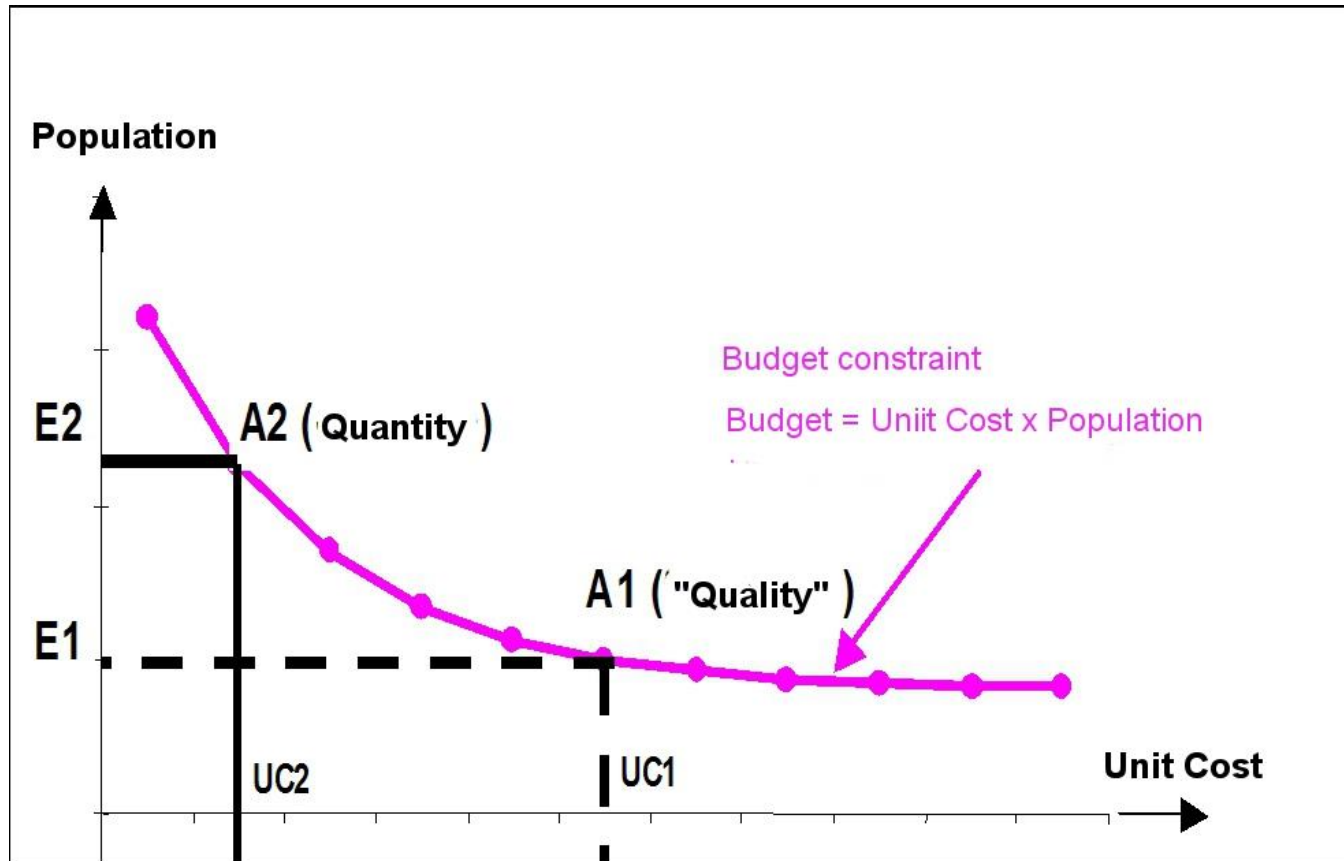


Sample Spending Block



Review of Quantity/Unit Cost Trade-offs

$$\text{Budget}_{\text{cycle}_i} = \text{population}_{\text{cycle}_i} * \text{UC}_{\text{cycle}_i}$$



Review of Unit Cost Trade-offs

$$\text{UC primary} = \frac{\text{Average salary}}{\text{PTR}} \times \frac{1}{1 - \alpha} \quad \text{where } \alpha = \text{share of spending excl. salaries of active classroom teachers}$$

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

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

		Number of pupils per class		
Teacher type		A	B	C
Average teacher salary (MU)		(15 000)	(20 000)	(25 000)
Average spending on « goods & service » per pupil (MU) = UC _{G&S}	50	27,3	36,4	45,5
	100	30	40	50
	200	37,5	50	62,5
	400	75	100	125

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