



LEBANON

Education Public Expenditure Review

2017

Task Team Leader: Husein Abdul-Hamid
Team members: Haneen Ismail Sayed, Dima Krayem, Joey R Ghaleb

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Education Global Practice

Middle East and North Africa Region

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LEBANON FISCAL YEAR

January 1 to December 31

Currency Equivalents

(As of April 3, 2016)

Currency Unit	=	Lebanese Pounds (LL)
1 U.S. Dollar	=	LL 1507.5
1 LBP	=	US\$0.00066

Glossary

CAS	Central Administration for Statistics
CDR	Council for Development and Reconstruction
CERD	Center for Education Research and Development
CSC	Civil Servant Cooperative
DG	Director General
EMIS	Education Management Information System
GDP	Gross Domestic Product
GER	Gross Enrollment Rate
HBS	Household Budget Survey
HOI	Human Opportunity Index
LU	Lebanese University
M&E	Monitoring and Evaluation
MEHE	Ministry of Education and Higher Education
MENA	Middle East and North Africa
MoF	Ministry of Finance
MTEF	Medium-Term Expenditure Framework
NER	Net Enrollment Rate
NES	National Education Strategy
NLSA	National Large Scale Assessment
PER	Public Expenditure Review
PETS	Public Expenditure Tracking Survey
PFM	Public Finance Management
PISA	Programme for International Student Assessment
PPP	Private-Public Partnership
RACE	Reaching All Children with Education
SIMS	School Information Management System
TIDSS	Trends in International Mathematics and Science Study
TVET	Technical and Vocational Education
VT	Vocational Training

Executive Summary

1. **This Education Public Expenditure Review (PER) analyzes public expenditures and outcomes since 2004.**¹ Its purpose is to help the Ministry of Education and Higher Education (MEHE) set priorities; and make decisions on resource allocation, utilization, efficiencies, and management, and in achieving learning goals against a backdrop of serious economic and political challenges. The influx of refugees since 2011 from the Syria Crisis has created new issues for MEHE, which compound pre-conflict challenges in the education sector. The PER uses multiple sources including administrative and household-level micro-survey data, as well as results of national and international assessments among others (see annex 1 for full sources and description). It tackles the composition of and trends in government spending and resulting impact on education inputs and outcomes, as well as internal and external efficiencies. The equity dimension—in terms of geographic location, household socioeconomic status, and gender—is also explored in detail. It evaluates current processes in budget planning and execution. Finally, the PER makes a series of policy recommendations for the government’s consideration.

2. **The Syria crisis has produced unprecedented challenges to Lebanon’s education system,** and the government can claim some important success in meeting these. The conflict in Syria has added 1.5 million² registered Syrians to the existing population of 450,000 displaced Palestinians³, making Lebanon the country with the highest number of refugees-per-capita in the world at an estimated 33⁴ percent of population. With the support of the international community, Lebanon has extended access to its education system to refugees while trying to maintain levels of access and quality for Lebanese students. UNHCR records 487,723⁵ children between 3 and 18 among the displaced Syrian population in Lebanon. Despite the efforts of government and the support of the international community, 59⁶ percent of Syrian refugees between the ages of 3-18 remain out of formal schooling, with smaller but still significant numbers of Lebanese also unenrolled. The Reaching all Children with Education (RACE) strategy sought to improve access to formal education for Syrian and vulnerable Lebanese children in the country. The number of Syrian students aged 3-18 in the Lebanese public education system has increased dramatically rising from 18,780 students in the 2011-12 academic year to 141,722 students 2015-16⁷. This sevenfold increase in just 5 years has inevitably strained the formal education system’s ability to maintain the level of quality of the education system and enrolment in public schools of Lebanese students.⁸

3. **Education is an investment with high returns in Lebanon:** Higher educational attainment corresponds to higher earnings in the labor market. Analysis of individual-level earnings shows that those with higher levels of education, on average, have higher earnings. For example, an individual who has completed a primary education earns on average 19 percent higher earnings than an individual with no education, controlling for differences in their gender and age.

¹ The last PER was conducted in 2005 and the Education PER was conducted in 1999

² Government estimation from RACE 2 executive summary

³ Palestinian refugees number from UNRWA (United Nations Relief and Works Agency for Palestine Refugees)

⁴ Population estimates are from UN population division

⁵ UNHCR registered Syrian refugees

⁶ Enrollment numbers from RACE 2 executive summary

⁷ Enrollment numbers from Ministry of Education and Higher Education (MEHE) and Center for Educational Research and Development (CERD)

⁸ As some parents removed their children from public schools

An individual who has completed at least some university-level education earns on average 171 percent higher earnings than an individual with no education (Household Budget Survey [HBS] 2011/12, Central Administration for Statistics [CAS]). The positive association between education and earnings frames education as an investment with an economic return, as well as other returns in terms of human and social development. An investment in education by individuals and the country renders a future stream of benefits valued by an increase in an individual's earnings.

4. **While education improves chances of employment for both males and females, females are consistently less likely than males to be employed, although the gender gap improves with higher levels of education.** The increased investment of education for women has not translated into higher participation rate in the labor force as majority of the women tend to either remain unemployed, except for those with some university-level education. For example, 78 percent of female youth whose highest level of education attained is primary school are unemployed and unavailable for work. By contrast, 65 percent of male youth whose highest level of education attempted is primary are employed 40 hours or more per week. Males and females are least likely to be unemployed and not available for work if their highest level of education attempted is university. As such, understanding barriers to entry in the labor force becomes important.

5. **Lebanon's education system is defined by a very large private sector that is only marginally subsidized through government allowances.** Total government expenditure on education is about US\$1.2 billion annually (approximately 2.45 percent of GDP and 6.4 percent of total public expenditure), which includes expenditure of (a) US\$950 million to MEHE and the two autonomous entities (Center for Education Research and Development [CERD] and Lebanese University [LU]) and (b) US\$262 million spent by other ministries, including allowances to civil servants and the Council for Development and Reconstruction's (CDR) expenditures on infrastructure projects. While government expenditure in absolute terms has gone up since 2005, the percentage share of education expenditure as a percentage of total expenditure has decreased by 17 points during the last decade.

6. **Private spending on education is high and households bear a higher financial burden for education than government.** Approximately 70 percent of the enrolled student population attends private schools. Private provision and financing of general education is widespread and offered by publicly subsidized and nonsubsidized schools. Private (nonsubsidized) schools enroll 55 percent of all primary and secondary students, while free-private (subsidized) schools account for 14 percent. With a market size of about US\$1.3 billion in tuition fees alone, the private sector consumes a large portion of household expenditures. Against the high out-of-pocket cost paid by parents, the latter expect a strong regulatory framework from the government to safeguard returns on their investment, especially for poor households.

7. **Teacher salaries account for 84 percent of the total public expenditure on education; the largest expenditure item in the education budget.** There is a heavy reliance on contractual teachers: in 2014/15, 456 of public schools (36 percent) had more contractual teachers than civil servant teachers. While this option might appear cost-effective in the short term, it has significant impact in the long run. Contractual teachers will eventually pressure the government to be hired as permanent teachers. Unchecked, this increases the risk of a reduction in the qualifications of the teaching cadre. Given that many existing tenured teachers lack required certifications for historical

reasons, the government could revise its strategy and recruit contractual teachers to permanent posts, based on a transparent, merit based, assessment of skills and qualifications

8. **There is a marked and unusual skewing towards upper grades in the distribution of teachers' salaries.** The recent hiring freeze, combined with a system of automatic promotion, has produced this concentration and an associated increase in the total salary bill. Aligning the hiring process with evolving demand (for example, replacing retiring teachers) will be important. Regular, rather than one off hiring rounds would improve distribution across grades, with more entry level teachers. This in turn would help control costs and create space for future salary increases. Ultimately this approach would also create conditions for a performance based teacher management and promotion system. Revising teacher promotion practices should be a priority because current promotions to higher grades do not seem to result in increased student performance.

9. **While Lebanon's teacher workload policy is similar to other countries, practice does not always follow policy,** and the load is low compared with other middle-income countries resulting in lower productivity, teacher morale and incentives. Whatever the underlying causes, salary levels and increments do not take the reduced actual workload into consideration. One possibility might be to assign activities such as advising, preparation, and mentoring to make up for lower teaching loads than per policy.

10. **Lebanon has a relatively low average student-teacher ratio in primary education.** Compared to countries with similar levels of economic development, the system is saturated with teachers, especially in basic cycles⁹. In academic year 2013-14, the ratio was one permanent (civil servant) teacher to 19 students in secondary grades, compared with one to 9 in elementary grades. This is low and inefficient by international standards. There are two principal explanations for this. First, an estimated 2,500 members of the teaching cadre do not teach, instead working as administrators centrally and regionally or at school level. Accounting for this reality, the student teacher ratio could increase if the hiring of contractual staff is controlled to adjust for the reduced teaching staff. Second, some schools in remote areas have a full complement of teachers but relatively few students, given the demographics of the region. To this end, measuring efficiency in the context of Lebanon is complex. The schools in peripheral areas usually known to have low number of students but still should remain open as no other alternatives are available (the case of small communities in high mountainous areas). Consequently, the average teacher (civil servant and contractual) salary *per student* is an estimated US\$1,580 for primary and US\$1,090 for secondary education, which is high compared with many OECD countries. Improving this ratio could save significant public expenditure, while also delivering stronger pedagogical and academic results.

11. **There continues to be large variation in the quality of education between schools, despite the rising expenditure on education.** The average student success rates for 9th and 12th grade exams in public and private schools are 61 and 73 percent, respectively¹⁰. Analysis of TIMSS and national-level survey data reveals that between-school differences are large and associated with school size, student behaviors and socioeconomic status, quality of school buildings, instructional resources, and teacher salary cost per student. This has policy implications for small

⁹ The figures in this report represent students in first shift schools. Student-teacher ratio in the second shift classes, hosting Syrian students, has a high ratio, which is close 28 in 2017.

¹⁰ CERD data, 2013

schools, school rehabilitation, and teacher deployment. There is therefore a need to revisit national standards regarding factors affecting learning outcome such as buildings and instructional resources and set targets on learning for continuous monitoring and linking into a well-structured and systematic accountability model for all schools.

12. **Inequity associated with socio-economic status exists in terms of access to quality private and public schools.** Evidence and data shows disadvantaged households have limited access to secondary education. The lower the income of the households, the less likely they pursue higher levels of education. This might limit access to higher income opportunities. In addition, some households tend to benefit the most from government allowances for education because they are either targeted to higher education or tied to job type. Moreover, students from the fortunate households comprise a large segment of students who attend the relatively few better performing free-private schools, reflecting the need to better channel allocation of public resources

13. **The education management information system needs further development.** While there has been significant progress in building a system, this is not yet institutionalized. Critical elements such as finance and school attendance are not fully integrated, and more work is needed to define roles and responsibilities of different units (mainly the School Information Management System [SIMS] and CERD) related to data collection, validation, management, and utilization. Delays remain in collecting data from schools, and the lack of coordination with the central government (MEHE) on school census data creates additional issues. Automation of processes to collect data from schools is an important step, and integrating the school financial information into the system should be a priority to monitor the flow of financial resources allocated to schools, particularly per student amounts each year. This is not only helpful in tracking school level financial accounts but will also help them spending money to benefit school improvements.

14. **Due to factors exogenous to MEHE, Lebanon's education sector operates with limited budget planning.** The last budget to be approved by parliament was in 2005. Since then, public administration has subsisted on temporary annual budgets, that cannot reflect the emerging priorities of the Ministry. This situation has affected negatively the development of a robust budget-planning exercise. Moreover, MEHE lacks capacity to develop actionable medium-term expenditure plans. Even when sectoral plans are produced, or when the Ministry of Finance issues a Medium-Term Financing Framework, neither is binding nor adhered to. The absence of an institutional planning culture within the administration and lack of policy guidelines are major issues adding to the problem of the absence of an approved budget.

15. **Budget execution processes are not well-structured.** While the Ministry has human resources within cadres, there is no dedicated team with budget implementation responsibilities, including no visible cash planning. Under RACE2, MEHE is making attempts to institutionalize and strengthen activities around budget planning, cost estimates, and timing. This will help improve overall budgeting by developing a detailed costing model, to allow MEHE to estimate the medium- and long-term financing impact of various scenarios. In addition to providing a detailed review of expenditures, this helps bring spend, activities and objectives into alignment. Execution of recurring budget items (other than civil servants' salaries) across the education system is affected by bureaucratic processes in the review and clearance of expenditures, which in turn affect the timely use of funds. Core issues include a lack of systematic internal audit functions and the fact that the current financial reporting is not compliant with International Public Sector

Accounting Standards (IPSAS). The annual budget is assumed to be executed in its entirety, regardless of actual spending patterns at the school level.

The concept of providing financial autonomy to schools is a good practice, but is currently lengthy and bureaucratic, resulting in poor execution of budgets. Parents' and students' funds constitute close to 10 percent of MEHE's budget. However, disbursement is typically subject to delay. Meanwhile, insufficient incentives exist for schools to allocate money efficiently since there are no formal links to school improvement plans and/or student performance. The system would benefit from more frequent audits, including of these accounts to strengthen schools' allocation and execution of funds to improve teaching and learning.

Moving Forward

16. The PER highlights significant areas for improving the efficiency of the education system which could have a compelling impact on both quality and equity. It has identified many of these challenges, and proposes the following priority actions. Actions can be taken at three levels:

17. The workload policy followed by MEHE should be reviewed and aligned with comparative good practices in countries with comparable socio-economic standards. The current workload policy, along with the age structure of the teaching workforce, results in fewer effective teaching working hours and with a higher cost. The impact is further aggravated in the absence of a clear and well-stated policy to replace teaching activities with other school-based activities that would make use of available resources (counseling, supervision and other administrative work).

- a. **Given the above, the government should also ensure compliant practice** between what is intended and what is practiced, on workload. Towards this end, MEHE should **enforce the teacher workload policy to the extent possible**. Currently, actual working hours are low compared with OECD benchmarks. Enforcing the workload policy would reduce the need for contractual staff, resulting in large savings and possible improvements in teacher and learning quality.
- b. MEHE should put more efforts on improving the hiring practices for contracted personnel and to develop a proper incentive structure for the contracted staff including continuous training, and ensure, to the extent possible, a clear career path for the contracted teachers.

18. Developing an effective workload strategy will provide an opportunity to release some unqualified teachers by proper arrangement, such as early retirement. If the currently employed teachers were to teach the required workload (e.g., 600 hours per year), then it would reduce the number of teachers needed to meet the teaching requirements and also create fiscal space for implementing other education reforms (see annex for the simulation).

- a. **Resulting savings could be used to hire high-performing contractual teachers as permanent staff**, given the performance of some of them is like other high performing civil servants. Potentially, savings could be used to raise teacher salaries in basic education, given these are currently below the international average mainly that of OECD countries (see annex 2).
- b. To develop and implement these policies, **more efforts are needed to improve the quality of data on teachers (e.g. work load and teaching hours)** to be able to

perform precise calculations at the national level. Ideally the SIMS, through its different modules, should be able to provide such data on the short run.

19. The government should realign its subsidy programs to improve access and equity.

Given the increasing dominance of the private sector in education, a well-structured and cost-effective Private-Public Partnership (PPP) model could significantly improve the equity and quality of education in private and public schools. While Lebanon is currently implementing some initiatives to ensure access of poor households to public schools, this could be strengthened by providing financial incentives that aims to improve enrollment rates in basic and secondary schools, as well as reduce inequity in rural areas. A step-by-step model for developing this system might include the following. (i) Provide financial incentives to the poor to incentivize access to secondary schools (public or private), the value of the incentives being equivalent to the per-student cost of attending secondary schools. (ii) Reconsider the subsidy to free-private schools toward having it conditional on school performance criteria and household socio-economic conditions. (iii) Instead of building or renting schools in rural areas, provide financial incentives to the poor to attend private schools, the value of incentives being equal to that of the cost of attending a public school, assuming private schools are within commuting distance. It would be important to strengthen the monitoring framework to close poor-performing private-free and public schools and use savings to provide these incentives. School audits, used in other countries, through biannual school surveys could be one potential method of monitoring the performance of these schools.

20. The government should realign its subsidy programs to improve access and equity.

Given the increasing dominance of the private sector in education, a well-structured and cost-effective Private-Public Partnership (PPP) model could significantly improve the equity and quality of education in private and public schools. While Lebanon is currently implementing some initiatives to ensure access of poor households to public schools, this could be strengthened by developing a voucher scheme/system that aims to improve enrollment rates in basic and secondary schools, as well as reduce inequity in rural areas. A step-by-step model for developing this system might include the following. (i) Provide vouchers to the poor to incentivize access to secondary schools (public or private), the value of the vouchers being equivalent to the per-student cost of attending secondary schools. (ii) Reconsider the subsidy to free-private schools toward having it conditional on school performance criteria and household socio-economic conditions. (iii) Instead of building or renting schools in rural areas, provide vouchers to the poor to attend private schools, the value of vouchers being equal to that of the cost of attending a public school, assuming private schools are within commuting distance. It would be important to strengthen the monitoring framework to close poor-performing private-free and public schools and use savings to provide vouchers. School audits, used in other countries, through biannual school surveys could be one potential method of monitoring the performance of these schools.

21. Strengthen the accountability system to improve effectiveness of private and public schools.

Holding schools (both public and private) accountable to quality is important for a strong education system. Stronger regulations of include inspection, review of student performance, teacher evaluations, and publication of school quality indicators. However, regulations (such as requirements for educational and recreational facilities) for private schools need to be financially feasible for private institutions; public subsidy might be needed to improve equality of access to private schools. To this end, developing a strategic public-private engagement model is key to improving the quality of education in both private and public schools. Accountability is at the core

of the engagement of the private sector. This involves (a) holding schools accountable for the outputs that they produce, which should be accompanied by standards and interventions that increase access and improve quality (the current legal framework governing private schools has limited authority in setting academic standards in private schools), and (b) empowering all parents, students, and communities through effective dissemination of data. When parents and students have access to information on relative school quality, they have the power to hold schools accountable and the voice to lobby governments for better-quality services. It would also be important to revisit the policies and performance for the private-free schools to ensure parents are receiving value for their money.

22. **Continue to build and roll out the information system** to ensure alignment and coordination of data efforts on students, schools, teachers, and expenditures and adhere to a public financial management model to follow systematically in budget preparation, planning, and execution. Effective collection, management, dissemination, and integration of education data are essential to make evidence-based decision making across different levels of the education system. Governments need data on schools, teachers, and students for planning, allocation of resources, and management. Schools need data to make school improvement plans and monitoring teaching and learning.

23. **Developing a results-based financing model linked to school improvement.** The current system uses student count to distribute funding to schools and does not assume that spending should differ for certain types of schools and students. The current financing model should be revisited to ensure that the allocation of funds is linked to school improvement and student performance, regardless of school size. Constructive policy enhancement should consider four important principles of a school finance system: adequacy, equity, quality, and efficiency. The system should provide adequate resources at all levels of the education system to ensure all students (irrespective of socioeconomic and other background) receive a high-quality education. There needs to be a mechanism to equalize education spending across governorates, kazas (second-level districts), and school sizes to preserve fiscal neutrality, so available resources are not associated with wealth of the population where a student lives. In addition, efficient management of resources through regular audits is important to ensure that outcomes are achieved.

24. **Linking financial expenditures with results is key to improve quality of education.** At the end of the day improving education outcomes is a strategic national interest and should guide budgeting and expenditures. For a results-based financing in education to work:

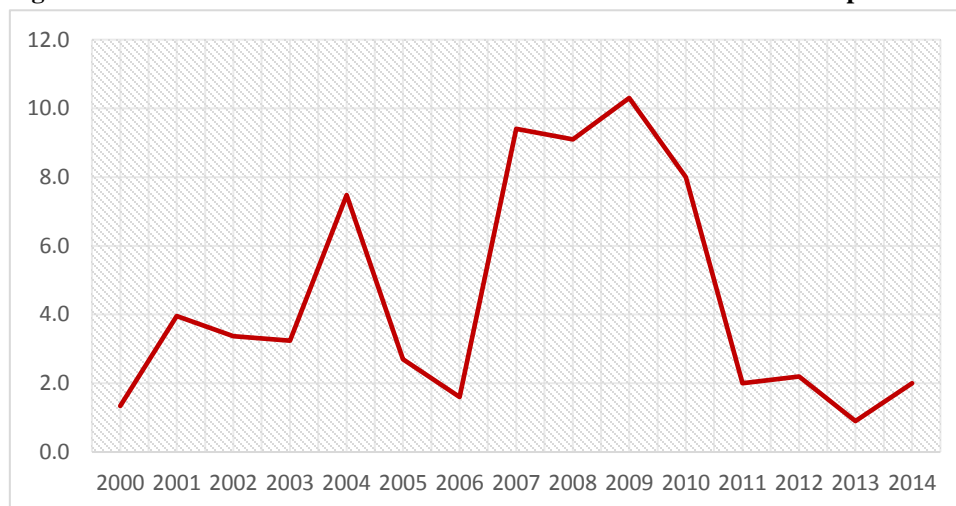
- i. There is a need to identifying strategic education goals with targets and metrics to be monitored.
- ii. There is a need to hold the different entities in education accountable to achieve specific goals supported by an incentive and penalty system.
- iii. Systematic budgeting and execution based on programs linked to defined intended results towards achieving national education goals.
- iv. This type of approach requires: a change in culture to focus on more tangibles beyond just funding inputs; incentives system; and a data system to enable strategic planning and monitoring of processes, outputs and outcomes.
- v. Policies need to emphasize such approach.

Introduction: Country Context

1. **Lebanon is a middle-income country with a population of 4.6 million, and an average GDP per capita of US\$10,139 in 2014.** The country is highly urbanized with more than 85 percent of the population living in cities. Population growth was high in 2010 and then declined and stabilized at 1.2 percent per year. Approximately 51.9 percent of the total working age population (15 to 64 years) is actively participating in the labor force supply. The unemployment rate is close to 6 percent, which is more severe for women than men (World Bank, 2014). The country has experienced prolonged periods of civil war and conflict, as well as large influxes of Syrian refugees, especially in 2011. Despite its political instability, Lebanon is still considered to have high levels of human development, especially when compared to other countries in the Middle East and North Africa (MENA) region.

2. **Lebanon is a developing country with a moderate GDP growth rate of 2 percent per annum (World Bank 2014), which is constantly affected by frequent political shocks** (figure 1). The long-standing civil war between 1975 and 1990, Syrian conflicts, and other political upheaval have brought about significant fluctuations in the economic growth rate, which in turn has affected the business and investment climate in the country. Lebanon ranks 123 in the Ease of Doing Business Report, which is much lower than that of other Middle Eastern countries such as Jordan (Rank 113), Saudi Arabia (Rank 82), Turkey (Rank 55), and the United Arab Emirates (Rank 31) (World Bank, Ease of Doing Business Report, 2016). The low economic growth in turn has adversely affected the poverty levels in the country: 28.6 percent of the population live below the poverty line and those in extreme poverty at around 8 percent with a Gini coefficient of 0.32 (CAS, 2011/12).

Figure 1. Fluctuations in the Annual GDP Growth Rate Due to Political Upheavals



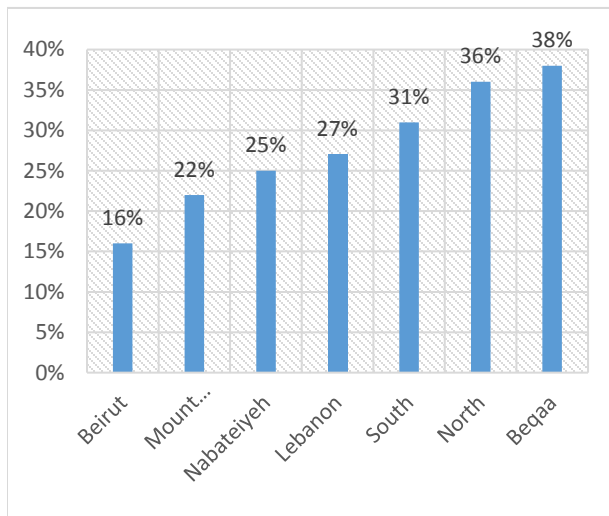
Sources: World Bank, 2014 and CAS, 2012.

3. **The overall government budget and Lebanon's macroeconomic environment have been very unstable, with widened fiscal and trade deficit and declining consumer confidence.** Affected by the civil war, which lasted for more than 15 years, Lebanon's public finances suffered immensely as donor funding declined, leading to increased borrowing. High rates of inflation

accompanied with devaluation of the currency in the country put tremendous pressure on interest rates, which also increased the amount of debt burden. As a result, sustainability of debt is a serious issue, which in turn threatens customer confidence in the macroeconomic economic situation of the country. This financial instability and inflation continue to affect education, especially in relation to teacher salaries because higher prices always trigger demand for higher salaries.

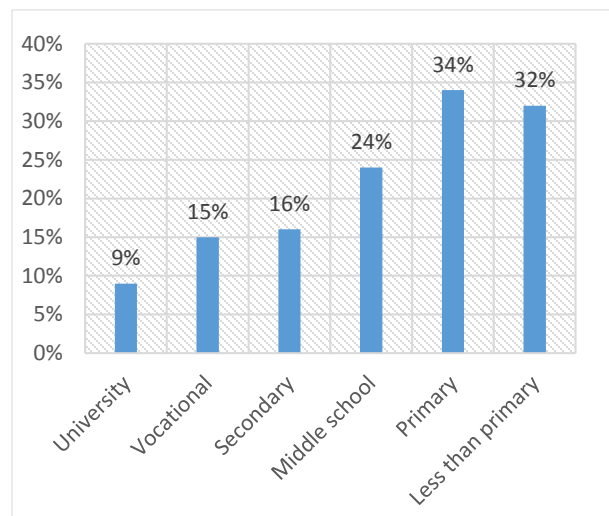
4. **Education is highly related to prosperity in Lebanon.** The recent poverty rate figure shows that, on average, 27 percent of the population in Lebanon are poor. Disparities in the subnational poverty rates are particularly acute in Lebanon with the regions of Bekaa and North and South Lebanon having higher poverty rates compared to those in Beirut and Nabatiyeh. The subnational poverty rates range between 16 percent in Beirut and 38 percent in Beqaa. The level of learning in the regions is in line with the poverty maps, lower for regions with a higher poverty rate. The poverty rate among the population aged 22 or older without a university degree is about threefold in comparison to those who have it (see figures 2 and 3).

Figure 2. Poverty Rate across Regions



Source: CAS, 2011/12

Figure 3. Poverty Rate by Education Level of Population Aged 22 or More

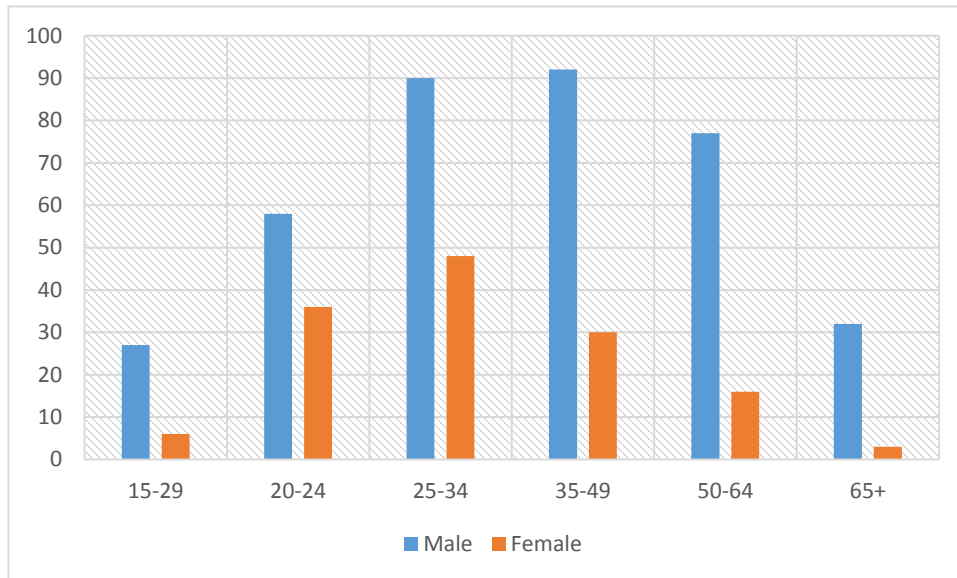


Source: CAS, 2011/12

5. **Education is highly important for the Lebanese economy, which is a service-oriented economy, with trade and services accounting for 60 percent of the GDP and 44 percent of the total employment (CAS, 2011/12).** Education, health, and public administration account for 24 percent of employment, mining manufacturing and construction account for 19 percent, transport and communication contribute to 6 percent, while financial services and agriculture account for 4 and 3 percent of the total employment in 2011/12. The private sector in the country accounts for 75 percent of the total demand. The country is also highly connected to the region's economies (especially to the Gulf oil-producing countries) for exports, in both capital and labor. High levels of education and training are crucial for these major sectors/industries because level of education is highly correlated with participation and employment in the labor market. This is reflected clearly by the fact that the share of employment among people with a tertiary degree is 61 percent, whereas only 31 percent of people with less than a primary education are employed (CAS, 2011/12).

6. **While females' participation in education has been increasing over time, their participation in the labor force is still significantly lagging behind that of men.** Across age groups, the employment rate of females is significantly below that of males. Data reveal that only 48 percent of women in the 25–34 age group are employed, compared to 90 percent of men. Moreover, the employment rate declines for older women: 30 percent for women in the 35–49 age group and 16 percent in the 50–64 age group (figure 4).

Figure 4. Employment Rate, by Age and Gender

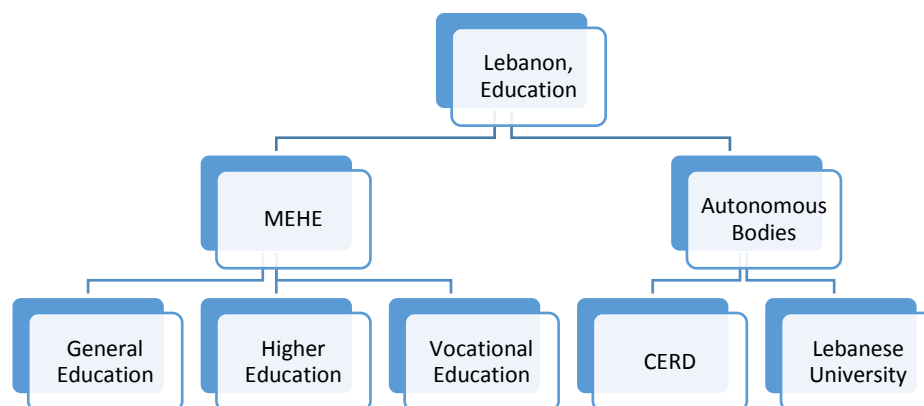


Source: CAS, 2011/12.

Structure of the Educational System

7. **The structure of the education system consists of nine years of primary education and three years of secondary education.** The official entrance age to compulsory education is six years, which lasts for nine years. The education budget and expenditure allocation follows the structure of the Ministry. The Ministry of Education and Higher Education (MEHE) is composed of three directorates (General Education, Higher Education, and Vocational Education), and the Minister has tutelage over many bodies, some of which are financially autonomous, such as the Center for Educational Research and Development (CERD) and the Lebanese University (LU), that also generate internal revenues from fees, as well as others including the music conservatory¹¹ (see figure 5 for the organizational chart). The Directorate for Education is composed of the high school and elementary departments. A joint administrative section¹² reports to the Minister and provides support services for MEHE.

Figure 5. Organizational Structure



Source: Authors.

8. **While the Ministry is mandated with operational affairs and capital investments, CERD is entrusted with research and support.** In particular, MEHE is responsible for (1) the hiring of teachers, (2) decisions on capital investments, (3) all human resource-related matters, and (4) affairs related to school needs and equipment. On the other hand, CERD,¹³ a financially and administratively autonomous organization that reports to the Minister, is responsible for (1) teacher training and development, (2) setting the academic curricula, and (3) monitoring strategies/plans related to the education sector and the national curriculum.

9. **The technical and vocational education sector is supervised by the Directorate General of Technical and Vocational Education within MEHE.** The sector comprises both vocational training and technical education, provisioned by both public and private institutions. Currently six types of official certificates are offered in technical and vocational education. Table 1 presents the different certificates and the type of institutions offering them.

¹¹ The Minister heads different national councils that assume an advisory role.

¹² Joint administrative sections are often set up when the Ministry includes many directorates. Its role is to handle all administrative details related to employees of the ministry.

¹³ CERD was established in December 1971.

Table 1. Technical and Vocational Education Certificates and Institutions

	Certificate	Definition	Type of Institute
Vocational Education	CAP	Vocational Training Certificate	Training Centers
	BP	Vocational Certificate	
	SP	Advanced Vocational Training	Technical Schools
Technical Education	BT	Technical Baccalaureate Diploma	Technical Colleges
	TS	Higher Technicians' Certificate	
	LT	Technical Diploma	

Source: CERD, Lebanon.

10. **Lebanon’s higher education system is the oldest in the region.** It dates back to 1866 when the American University of Beirut was founded, followed by the University of Saint Joseph, then by the Lebanese American University in 1947. The Lebanese University (LU) is the only public university in the country. Most of the 42 higher education private institutions currently in operation in Lebanon were legalized in the late 1990s when the private sector flourished after a 15-year civil war, which had adversely impacted country’s higher education system. In 2002, a Directorate General for Higher Education was established to regulate the private institutions, whereas the only public Lebanese university (LU) enjoys complete autonomy with its own system of governance.

11. **Private provision and financing of general education is widespread and offered by private subsidized and nonsubsidized schools.** Private schools enroll 55 percent of the total number of primary and secondary students, while private-free (subsidized) schools enroll 14 percent. The remaining 31 percent of students are enrolled in the public schools, a share that has been decreasing in the last decade. Moreover, a majority of Lebanese students attend private schools, whereas Syrians attend public schools (table 2). In the case of Vocational and Technical Education, enrollment consists of 85 public schools and more than 360 private providers. Higher education is offered at LU and another 41 private universities. Only around 30 percent of spending on education in Lebanon is channeled through MEHE.

Table 2. Distribution of Students, by Nationality and School Type

% Students	% Private	% Public	% Private-Free	% UNRWA
Lebanese	57%	29%	14%	0%
Syrians	17	70	12	1
Palestinians	16	11	4	69
Other Arabs	48	38	12	2
Non-Arabs	89	8	3	0
Unspecified	18	74	7	1

Source: Center for Educational Research & Development, Lebanon (2012/13).

12. **The average tuition fee for private education is \$2,513 per year, with a market size of US\$1.3 billion.** Approximately 70 percent of the schools in the regions of North, Bekaa, South, and Nebatiyeh are non-private (table 3). These areas report the highest levels of poverty incidence. In addition, the majority of the schools are concentrated in the regions of Mount Lebanon and North, followed by Bekaa, South, Nebatiyeh, and Beirut.

Table 3. Distribution of Schools, by Governorate

Schools	% Private	% Non-Private	% UNRWA
Beirut	53%	44%	3%
Beirut suburbs	64	35	1
Mount Lebanon	43	57	1
North	27	70	2
Bekaa	31	69	1
South	29	60	10
Nebatiyeh	30	70	0

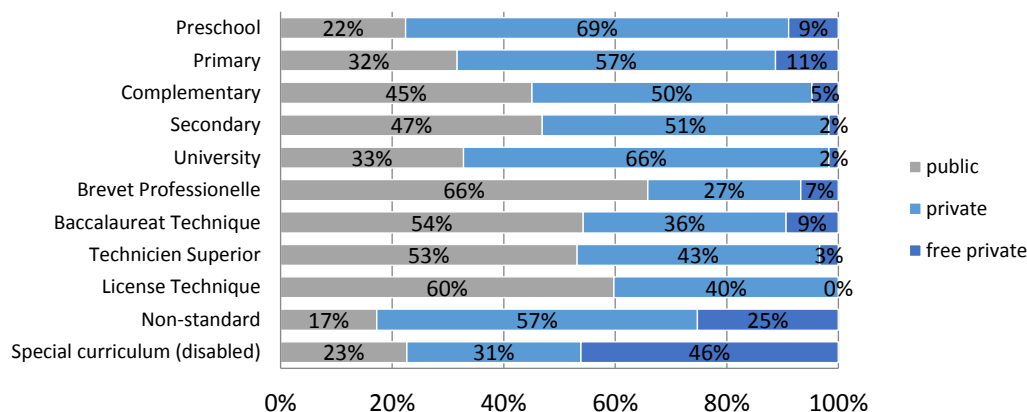
Source: CERD, 2012.

Enrollments Trends: Access to Schooling and Internal Efficiency

Basic and Secondary Education

13. **The private sector is the largest provider in general education.** The majority of the students attend private schools from preschool to university education. Private schools attract 69 percent in pre-primary of the students in this level, 57 percent in primary, 51 percent in secondary, and 66 percent at the university level. This trend is reversed in the case of TVET, where more than 50 percent of the students attend public and private-free schools (figure 6).

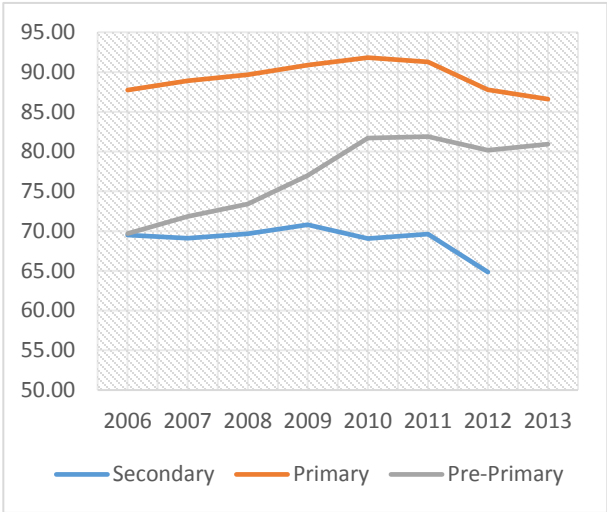
Figure 6. Distribution of Private/Public Schools, by Level of Education



Source: Authors' calculations based CAS HBS 2011.

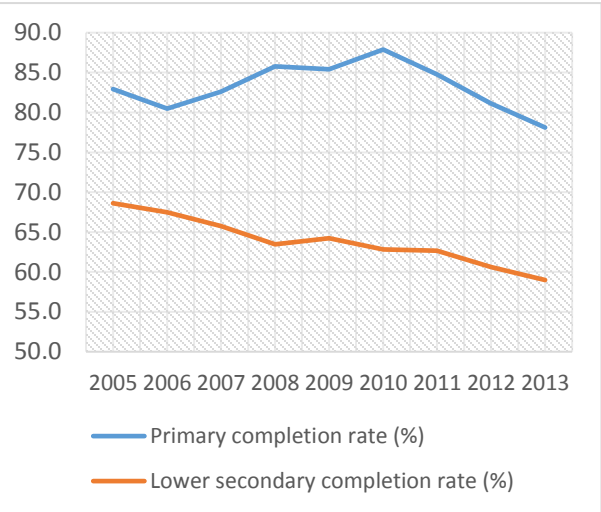
14. **The net enrollment rate (NER for primary education is constant throughout, while NER for pre-primary education is increasing over time.** However, NER for secondary is of serious concern. Since 2006, Lebanon has shown significant progress in pre-primary NERs, increasing from 70 percent in 2006 to 88 percent in 2012. Similarly, the primary NERs have also gone up from 88.4 to 93.2 percent in 2012. The NER in secondary education, however, is a concern because it declined from 68.7 percent in 2007 to 67.5 percent in 2012 (figure 7). Moreover, the completion rates for primary and lower secondary education have been on a decline and are extremely low (69 percent) for lower secondary education (figure 8).

Figure 7. Net Enrollment Rates (2006–13)



Source: World Bank, 2013.

Figure 8. Completion Rates (2005–13)

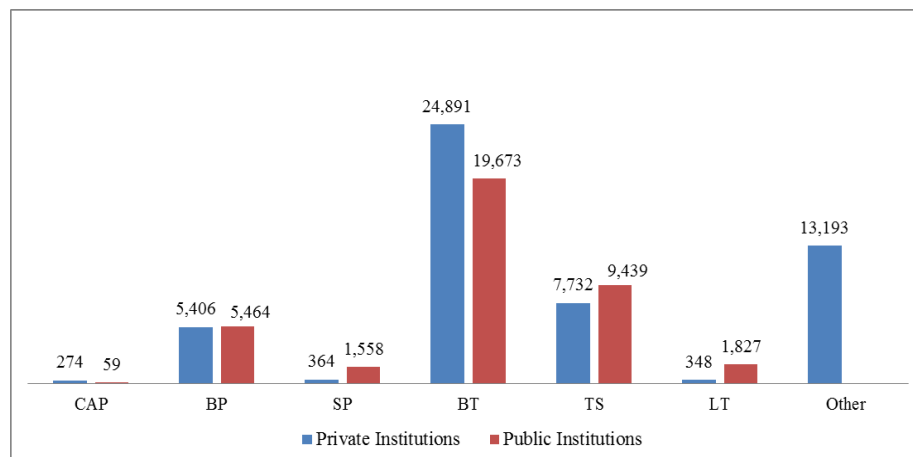


Source: World Bank, 2013.

Technical and Vocational Education

15. **There are 123 public and 247 private schools and institutions serving 86,250 students (41,982 in public and 44,268 in private).** They range from one-year to three-year programs. These schools are distributed in six regions: North (34.3 percent of students in public and 41 percent in private), Mount Lebanon (27.6 percent in public and 20 percent in private), Beqaa (22 percent in public and 11 percent in private), Nebatiyeh (12 percent in public and 7.4 in private), and South (6 percent in public and 11 percent in private) (figure 9). No public schools are found in Beirut; however, there are 25 private institutions. There seems to be a demand for this type of education, and it is associated with low unemployment rates. These institutions seem to cater to Lebanese students because 86 percent of students in private institutions and 94 percent of students at LU are Lebanese. It also seems that these top universities are at capacity because the numbers have not changed much since 2012/13. Females occupy more seats at the public university (69 percent of total enrollment) than males but are at parity in private universities (51 percent).

Figure 9: Enrollment in Technical and Vocational Education, by Type of Certificate (2012–13)



Source: CERD, Lebanon.

Higher Education

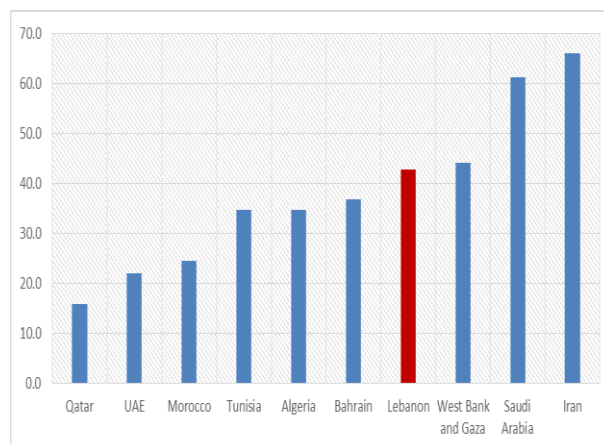
16. **In higher education, Lebanese University is the largest and only public higher education institution and enrolls 37 percent of students.** Data for the academic year 2012–13 indicate that there are 42 higher education institutions in Lebanon—classified between universities and university colleges¹⁴—all under the guidance and supervision of the Directorate General for Higher Education, within MEHE. In 2012–13, the Lebanese higher educational system accommodated around 120,348 students of which 59 percent (71,440 students) were enrolled in LU. The rest of the enrolled students were divided among the remaining 41 private institutions (as shown in table 4).

¹⁴ Usually award bachelor's degrees and must have at least one faculty.

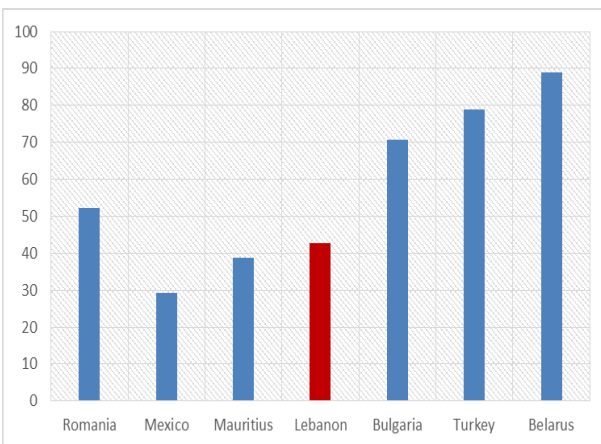
Table 4: Enrollment in Higher Education, by Type of Institution

Type of Institution	2012/13	2014/15
Lebanese University (LU)	71,440	69,994
Lebanese International University (LIU)	17,800	17,727
Beirut Arab University (BAU)	11,053	9,823
Université Saint-Joseph (USJ)	9,655	9,819
American University of Beirut (AUB)	8,054	8,474
Université Saint Esprit De Kaslik (USEK)	7,849	7,927
Lebanese American University (LAU)	7,521	7,848
Notre Dame University (NDU)	7,205	6,992
Arts, Sciences and Technology University in Lebanon	6,413	6,508
Balamand University	4,950	5,485
American University for Science and Technology (AUST)	4,890	5,234
Islamic University of Lebanon (IUL)	4,859	4,807
American University of Culture and Education (AUCE)	4,297	4,311
Other private institutions with fewer than 4,000 students	25,802	25,208
Total	120,348	120,163

17. **While the GER in Lebanon is higher than in most MENA countries, it still lags behind other economies.** Lebanon's GER in tertiary education stood at 43 percent in 2014, higher than that in countries such as Algeria, Bahrain, Morocco, Qatar, Tunisia, and the United Arab Emirates, but still below other countries such as the Islamic Republic of Iran and Saudi Arabia (see figure 10). When compared with countries at a similar level of development, Lebanon's GER in tertiary education is higher than that of Mauritius and Mexico, but still significantly below that of Belarus, Bulgaria, Romania, and Turkey (figure 11).

Figure 10: MENA Tertiary Education GER

Source: World Bank, 2014.

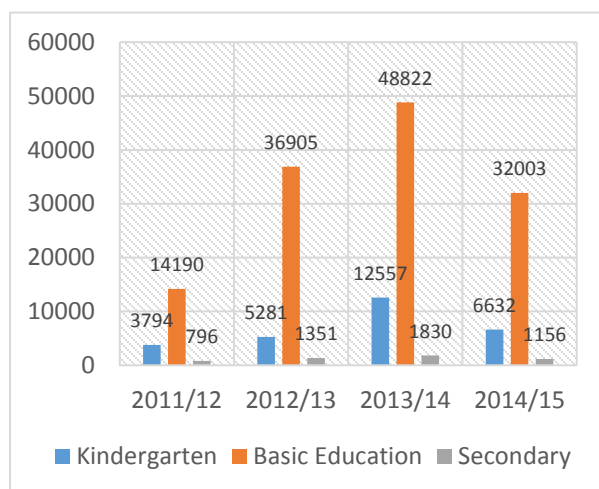
Figure 11: Tertiary Education GER in Comparator Countries

Source: World Bank, 2014.

The Syrian Effect

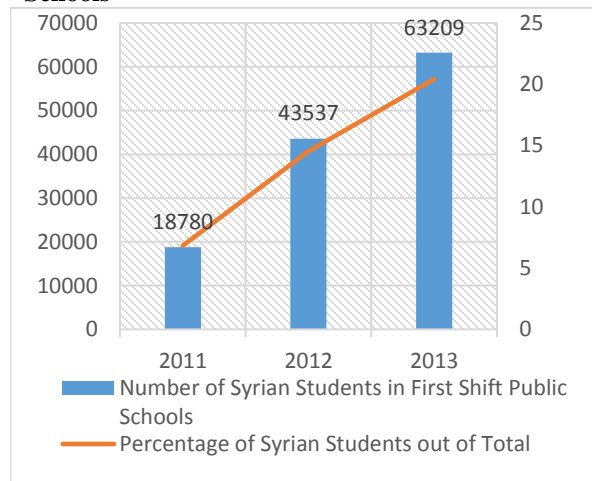
18. **The Syrian student population has been on an increase since 2011, with the share of Syrians increasing from 7 percent in 2010 to 28 percent in 2013.** Of the total Syrian enrollment, majority are in basic education. As such, second shift schools were built to accommodate the rising population (figure 12 and 13).

Figure 12. Trend in Syrian Enrollment over Time (First Shift Schools)



Source: CERD, Lebanon, 2015.

Figure 13. Number of Syrians in First Shift Public Schools

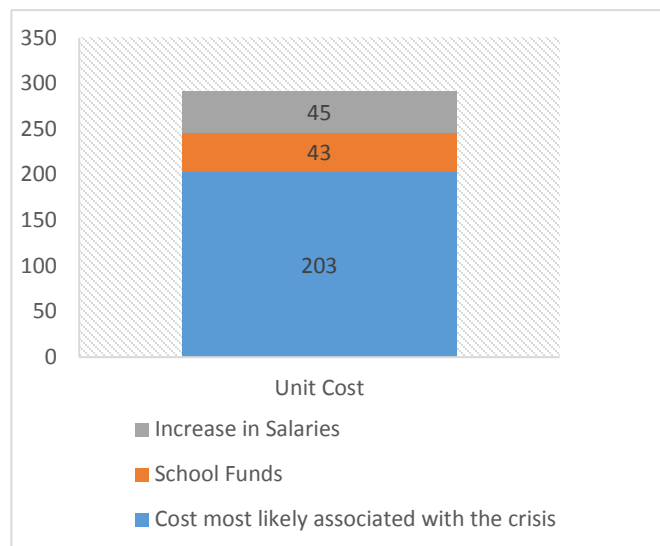


Source: CERD, Lebanon, 2015.

19. **The influx of Syrians into the public education system has put tremendous pressure on education spending over recent years.** In 2010/11, the per-student cost of attending a Lebanese public school (first shift) was US\$1,561 covering 276,119 students. In 2013/14, the per student cost increased to US\$1,852 covering a total of 309,498 students. Therefore, the increase in per student cost between FY2011 and FY2014 was \$291. A total of 1,000 new sections opened in schools during this period to accommodate the increase in students, particularly Syrian refugee students. The increase of \$363 per student from FY2011 to FY2014 can be attributed to three factors (see figure 14):

- Increase in the contractual teacher hourly rate, amounting to US\$14 million in 2014 (increase of US\$45 per student)
- Increase in the per student school fund contribution paid by the government from US\$40 in 2010-11 to US\$100 per year thereafter (increase of US\$43 per student) and
- Increase in the number of contractual teaching hours and rent costs of primary and secondary schools associated with the increase in the overall enrollment in public schools (increase of US\$203 per student).
- The US \$203 per student can be considered the marginal increase in per student attributed to the influx of Syrian refugee children into public schools. The cost to be charged for an additional student attending first shift public schools is therefore the sum of the US\$203 marginal cost, plus the US\$100 school fund contribution, plus the US\$60 parent fund contribution, amounting to US\$363 per student.

Figure 14. Breakdown of Increase in First Shift per Student Cost



Source: Authors' calculation.

Conclusion

20. This chapter focuses on the enrollment trends and access to Schooling. Measures of access to schooling such as enrollment and completion rates have improved at the pre-primary level but have remained constant for primary and even declined for secondary and tertiary education. While the performance of Lebanon's education system is much better than other countries in MENA, it still lags behind the OECD countries.

While the absolute expenditure on education has increased over the last decade, government spending on education (as percentage of GDP) has declined from 2.4 percent of GDP in 2005 to 2.1 percent of GDP in 2015. This is accompanied by a slight decrease in the share of public enrollment. Public schools account for about 30 percent of the student enrollment, whereas the remaining 70 percent of students attend private schools. The influx of Syrians has put a tremendous pressure on education spending, given that the majority of Syrians attend public schools.

Public Spending on Education: Size, Composition, and Trends in Government Spending

21. **Total government expenditure on education in the latest three years (2013-2015) averaged around US\$1.2 billion (2.1 percent of GDP and 6.3 percent of total government expenditure) with only 30 percent of students attending public schools.** MEHE expenditure amounts to US\$949.6 million, whereas the remaining expenditure of US\$262 million includes expenditure of other ministries and spending toward the Civil Servant Cooperative Fund and CDR. While the absolute number of government expenditure has gone up since 2005, the share of education expenditure as a percentage of total expenditure has decreased by 17 percent during the period 2005–15 (table 5).

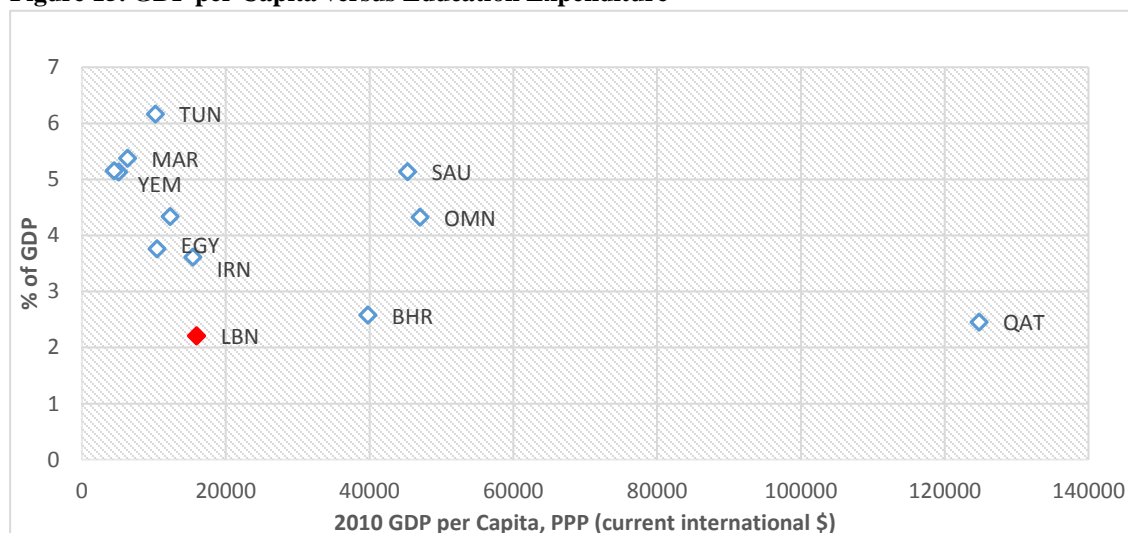
Table 5. Education Expenditure in Lebanon (2005–15)

Lebanon	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
MEHE expenditures (million US\$)	514.9	467.7	501.2	506.7	635.4	692.2	654.7	919.9	851.3	947.6	1049
As % of GDP	2.4	2.2	2.0	1.8	1.8	1.8	1.6	2.1	1.9	2.0	2.1
As % of total public expenditure	7.7	6.1	6.1	5.2	5.7	6.2	5.7	7.0	6.4	6.3	6.3

Source: Ministry of Finance.

22. **Relative to other countries in the MENA region, Lebanon has a low public spending share on education.** Countries such as Tunisia with a similar GDP per capita spend approximately 6 percent of GDP on education (three times that of Lebanon). Similarly, countries such as Morocco and the Republic of Yemen spend more than 4 percent of the GDP on education, which is twice the spending share of Lebanon (figure 5). However, when subsidies to private schools (0.4 percent of GDP) and private expenditures (1.45 percent of GDP) as the parents' out-of-pocket share of expenditure are factored in, the total education financing reaches nearly 4 percent of GDP, more in line with regional averages (figure 15).

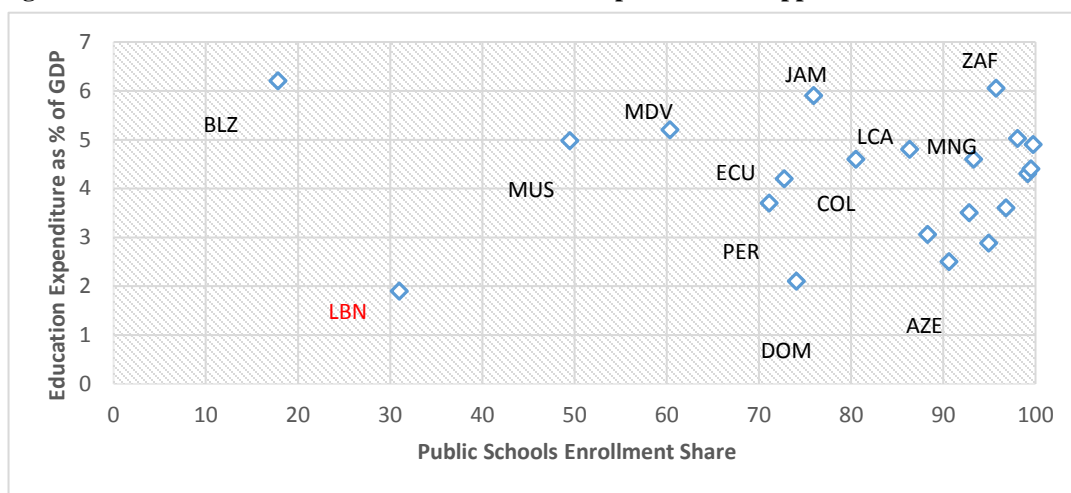
Figure 15. GDP per Capita versus Education Expenditure



Source: World Bank, 2014.

23. **The private sector is highly predominant in the education sector with approximately 70 percent of the population attending private schools** (figure 16). Private provision and financing of general education is widespread and offered by private subsidized and nonsubsidized schools. Private (nonsubsidized) schools enroll 55 percent of the total number of primary and secondary students, while private-free (subsidized) schools enroll 14 percent. The remaining 31 percent of students are enrolled in the public schools, a share that has been decreasing in the last decade. Lebanon is the only country in the MENA region that has such a significant presence of the private sector in education. Education in the private sector is covered mostly by the households. In some cases (civil servants and some private employees), employers fund a part of the tuition fees (in the form of education allowances), but this is limited. The remaining number of households does not benefit from any support neither by public nor by private sources.

Figure 16. Public Share Enrollment and Education Expenditure of Upper Middle-Income Countries



Source: World Bank, 2014.

24. **In Lebanon, expenditure per student on secondary and tertiary education is much higher than that for primary education, which has important implications for the national priorities to education development and allocation of resources.** The current expenditure per tertiary student is approximately US\$500 more than the expenditure per primary student, whereas the current expenditure per secondary education is approx. US\$200 more than that of primary education (table 6). This implies that the government invests too little on education, especially at the lower levels. While the expenditure per student is generally more for higher levels of education, given the low GER in Lebanon, this implies inequity in resource allocation between those who can participate in a higher level of education and those who cannot. This also implies that the marginal benefit of spending an additional year of school increases with the higher levels of education.

Table 6. Per Student Expenditure, by Level of Education

Education Level	Enrollments	GER	Total Expenditure (Million US\$)	Per Student Expenditure
Basic	190,871	97%	393	2,058
Secondary	56,187	68	133	2,367
Tertiary education (TVET and higher education)	71,440	43	201	2,558

Source: Authors' calculations.

25. **The overall financing of the education sector includes funding to the public schools, subsidies to private schools, teacher salaries (including civil servant and contractual salaries), and grants to nonprofit organizations.** The majority of MEHE spending is on civil servant salaries: 61 percent for basic education, 81.3 percent for secondary, 99.5 percent for tertiary, but only 28.2 percent for technical and vocational (TVET), of the respective budgets of each of these directorate. In 2013, US\$718 million was spent on teacher salaries, which constitutes approximately 84 percent of the total education budget. In addition, the government contribution to nonprofit organizations is approximately US\$53 million (14 percent of the total expenditure in general education). Analyzing the sectoral breakdown of the education budget, we find that 46 percent of the expenditure is spent on general education, 23 percent on the General Directorate for Technical and Vocational Training (TVET), 15 percent on the General Directorate for Higher Education, and the remaining 5 percent on general administration (see table 7 and annex 3).

Table 7. Distribution of the Actual Government Expenditure, Three-Year Aggregate (2013–15)

General education	% Share	Actual (US\$ Million)
Civil servant salary	63%	277
Contractual worker salary	10	42.6
Transportation allowance	4.4	19
Rent and maintenance of schools	2.4	11
Contributions to the public sector	5.5	24
Contributions to nonprofit organizations	13.7	60
Other recurrent costs	1.2	5
Total	100%	439.6
Secondary education		
Civil servant salary	81.3%	120
Contractual worker salary	7.5	12
Transportation allowance	4.8	7
Rent and maintenance of schools	4.2	6
Other recurrent costs	2.2	3
Total	100%	148
General Directorate for Higher Education		
Civil servant salary	99.5%	222
Contractual salary and other recurrent costs	0.5	2
Total	100%	224
General Directorate for TVET		
Civil servant salary	28.2%	24.5
Contractual salary	61.4	53.4
Various allowances (including transport)	6.8	6
Other recurrent costs	3.6	3.1
Total	100%	87
General administration		
Civil servant and contractual salaries	50.7%	25

Transport and other allowances	44.5	22
Rent costs and other recurrent costs	4.8	3
Total	100%	50
Grand total		949.6

Source: Ministry of Finance.

Teachers as the Largest Share of Government Expenditure

Teacher Grades and Qualification Levels

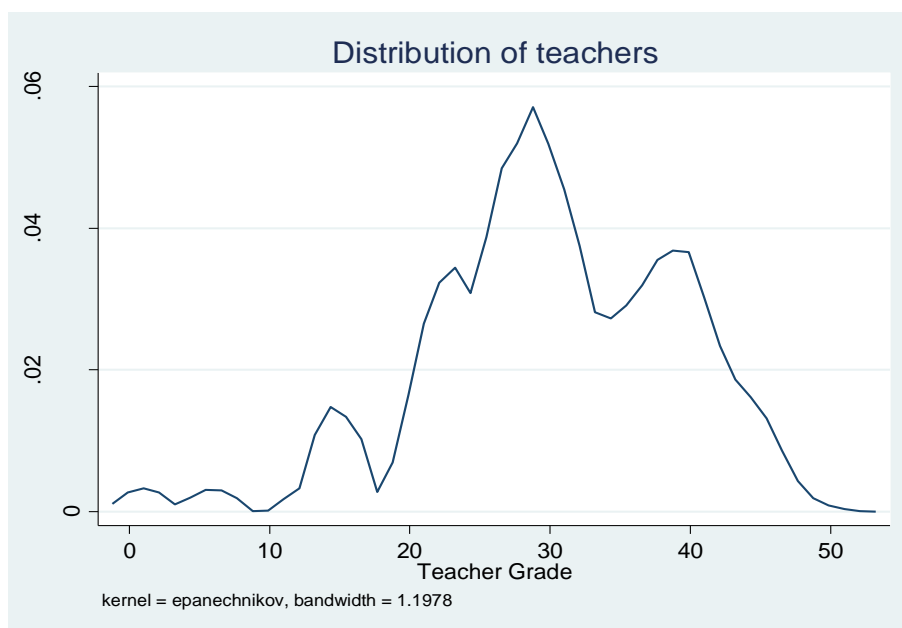
26. **Civil servant teacher grades:** There were about 25,863 civil servant teachers¹⁵ in the schools of Lebanon, out of which 80 percent are in grades higher than 25 (figure 17). A detailed breakdown of the numbers by grade value reveals that only 2 percent (374) of the teachers were in the grades ranging up to grade 7, and 1 percent (215) were in grades 8–14. Only 7 percent (1,725) were in grades 15–19, and 12 percent (3,032) belonged to the range 20–24. The majority of teachers were concentrated in the grade range of 25 and above, with approximately 32 percent (8,336) belonging to the grade range 33–52, 24 percent (6,177) belong to grades 29–32, and 23 percent (6,004) belong to grades 25–28 (table 8). The median range of the teachers is between 29 to 32, reflecting the presence of grade inflation.

Table 8. Number of Teachers, 2014

Range	Teacher	Percentage
0 to 14	589	2.28
15 to 19	1,725	6.67
20 to 24	3,032	11.72
25 to 28	6,004	23.21
29 to 32	6,177	23.88
33 to 52	8,336	32.23
Total	25,863	100%

Source: MEHE, Lebanon.

Figure 17. Distribution of Teachers, by Grade (2014)

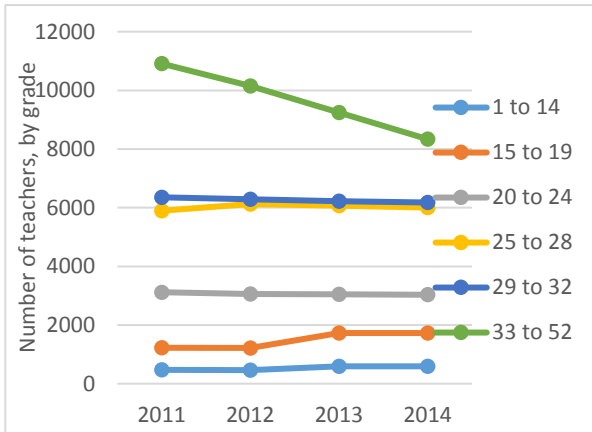


Source: MEHE, Lebanon.

¹⁵ Civil servant teachers teach only in public schools. This number accounts for administrative staff working in MEHE, regional office, DOPs and other non-teaching staff in the schools such as directors, librarians, lab technicians, and others.

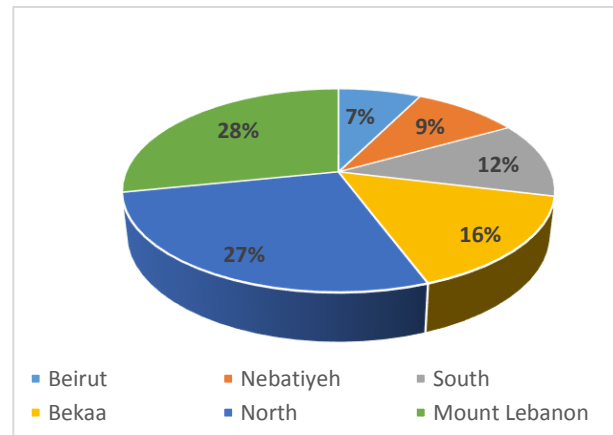
27. **On average, there has been a decline of 7.6 percent in the total number of civil servants in the schools of Lebanon since 2011.** The majority of the decline in these numbers is due to the decline in the number of teachers in grades 33 to 52, probably due to retirement reasons (figure 19). The maximum number of teachers are concentrated in Mount Lebanon (28 percent) and North (27 percent) governorates. Beirut has only 7 percent of the total number of teachers (figures 18 and 19).

Figure 18: Trend in Teacher Numbers over Time, by Grade



Source: MEHE, Lebanon.

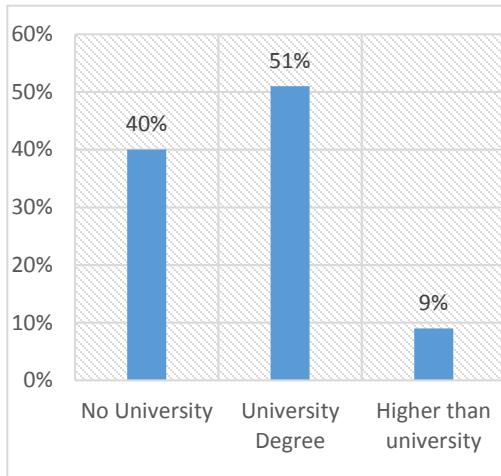
Figure 19: Number of Teachers, by Governorate



Source: MEHE, Lebanon.

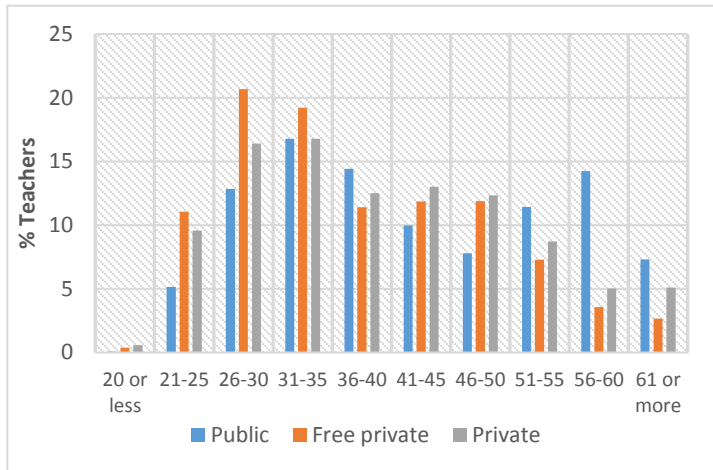
28. **Approximately 40 percent of the public school civil servant teachers do not possess a university degree.** Only 51 percent of the teachers have a university degree, while only 9 percent have a degree higher than the university level (figure 20). Also, public school teachers seem to be relatively older than teachers in the private sector, so that seniority and corresponding pay increases are a key issue for further exploration (figure 21). Given that Lebanon is experiencing an oversupply of teachers, this could be used as opportunity to improve the selection and screening process of teachers to attract the best into the profession. In addition, it is important to include processes that assess other important but less measurable qualities of teachers, such as their motivation and interpersonal qualities, especially since less than half of Lebanese public school teachers hold a university degree (SABER Teachers, 2010).

Figure 20: Distribution of Teachers, by Qualifications (2012)



Source: CERD, 2015.

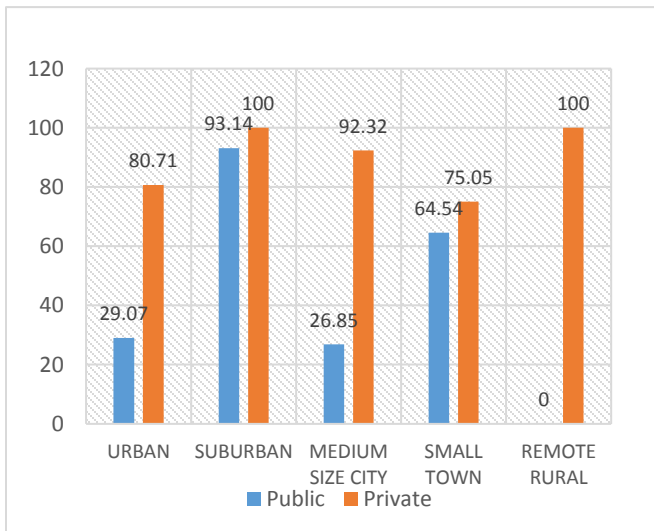
Figure 21. Age Distribution of Teachers, 2015



Source: CERD, 2015.

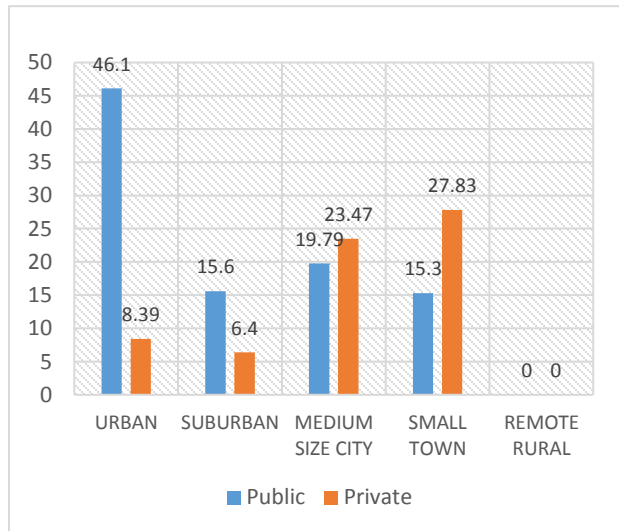
29. **Teacher job satisfaction levels are higher in private than in public schools, regardless of type of residence** (see figure 22). Teachers' absenteeism rates, on the other hand, are very high in public urban schools, and higher than in private schools in suburban areas, but the pattern is reversed in smaller cities and towns (see figure 23). There is a need for a better understanding of teacher policies and the role of the private sector in education.

Figure 22. Teacher Satisfaction Levels



Source: TIMSS, 2011.

Figure 23. Teacher Absenteeism

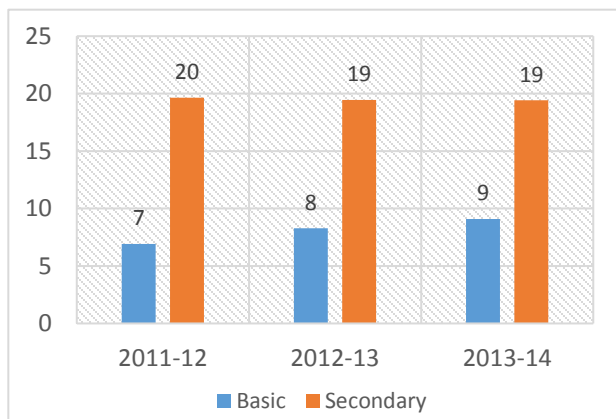


Source: TIMSS, 2011.

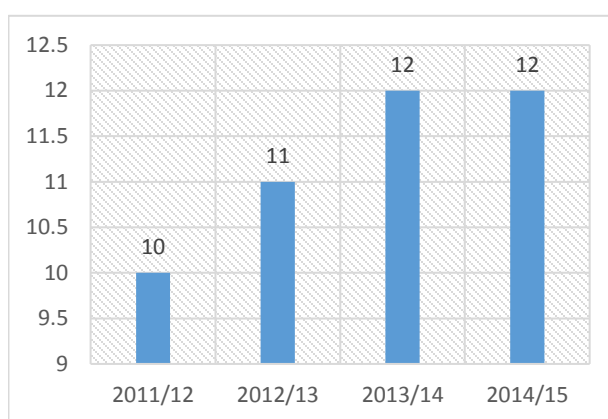
30. **Student-teacher ratio:** There is heavy reliance on contractual teachers, with some schools having more contractual teachers than permanent staff. In 2014/15, 456 (36 percent) schools had more civil servant teachers than contractual teachers. The student-to-civil servant ratio was 12:1, which was much higher in secondary schools compared to elementary schools. In 2013/14, 19

students were taught by one permanent civil servant, whereas in basic elementary schools, nine students were taught by one permanent teacher (figures 24 and 25). Since the civil servants includes administrative staff as well, this ratio could be higher if the hiring of contractual teachers is reduced to compensate for the reduced teaching staff.

Figure 24. Student Teacher Ratio, by Level of Education **Figure 25. Student Teacher Ratio, over Time**



Source: Ministry of Finance.



Source: Ministry of Finance.

Teacher Workload and Efficiencies

31. **In terms of teacher contribution to efficiency of achievement of learning outcomes, a striking feature of the Lebanese public education system is the fact that teacher workload decreases with years of service** (table 9). While the decreased workload is in line with the general workload policy for civil servant teachers across countries, this reduced teaching time is not compensated with an increase in other non-teaching activities. This has clear implications in terms of the efficiency of deployment of teachers in the country, in particular as pay increases with seniority, and the public sector tends to have older teachers than the private sector. A better understanding of this policy, in addition to the deployment of nonteaching staff in the public

Table 9. Teaching Workload and Seniority, by Level of Education (2014)

General education		Secondary education	
Years of service	Weekly teaching workload	Years of service	Weekly teaching workload
0-20	27	0-15	20
21-22	23	16-18	19
23-25	22	19-21	18
26-27	21	22-23	17
28-29	20	24-25	16
30-31	19	26-27	15
32 and above	18	28 and above	14

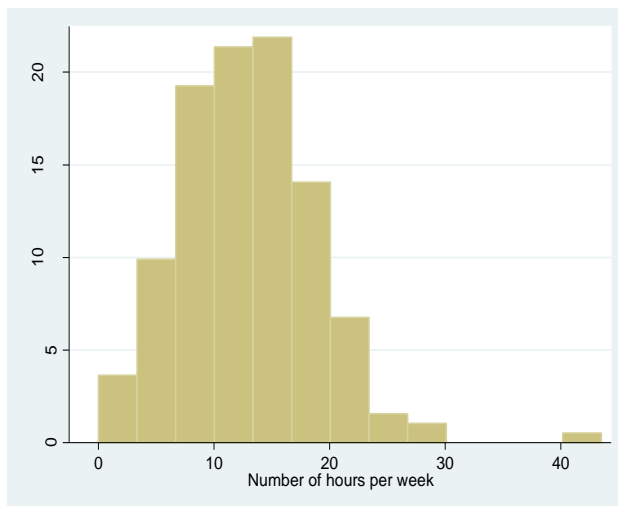
Source: MEHE, Lebanon.

education sector, is therefore important. Comparing this to the OECD countries, we find that the teaching load requirements evolve throughout the teacher’s career. Although some beginning teachers might have a reduced teaching load, some countries also encourage older teachers to stay in the teaching profession by diversifying their duties and reducing their teaching hours. Greece, for example, reduces teaching hours according to how many years a teacher has served. For example, at the secondary level, teachers are required to teach 21 class sessions per week. After six years, this drops to 19 sessions, and after 12 years to 18 sessions. After 20 years of service, teachers are required to teach 16 class sessions a week—more than 25 percent less than teachers who have just started their careers. However, the remaining hours of teachers’ working time must be spent at school assessing students, preparing lessons, correcting students’ work, in-service training, and staff meetings (OECD Education at a Glance, 2015).

32. **While the expectations for teachers and students are adequately defined, lack of official allocation of time for teaching and other nonteaching activities may inhibit effective teaching and learning.** Compared to OECD countries, the overall working hours of teachers are much lower, with the result that majority of their time is devoted to teaching, leaving little or no time for other duties such as mentorship, planning, and collaborative learning with other teachers and staff.

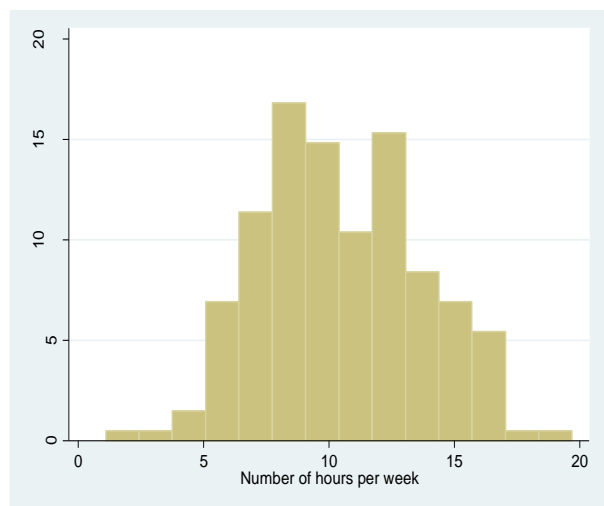
33. **On average, each contractual spends between 10 and 19 hours per week teaching, and a civil servant teacher spends between 10 and 15 hours.** Significantly low levels of workloads accompanied by high teacher salary per student puts a tremendous pressure on the expenditure levels of the government. There is a need to develop policies that ensure increased working hours by teachers. Figures 26 and 27 show the distribution of weekly teaching hours by civil servant and contractual, respectively.

Figure 26. Average Weekly Hours Taught by Contractual Teachers



Source: Mount Lebanon Directorate.

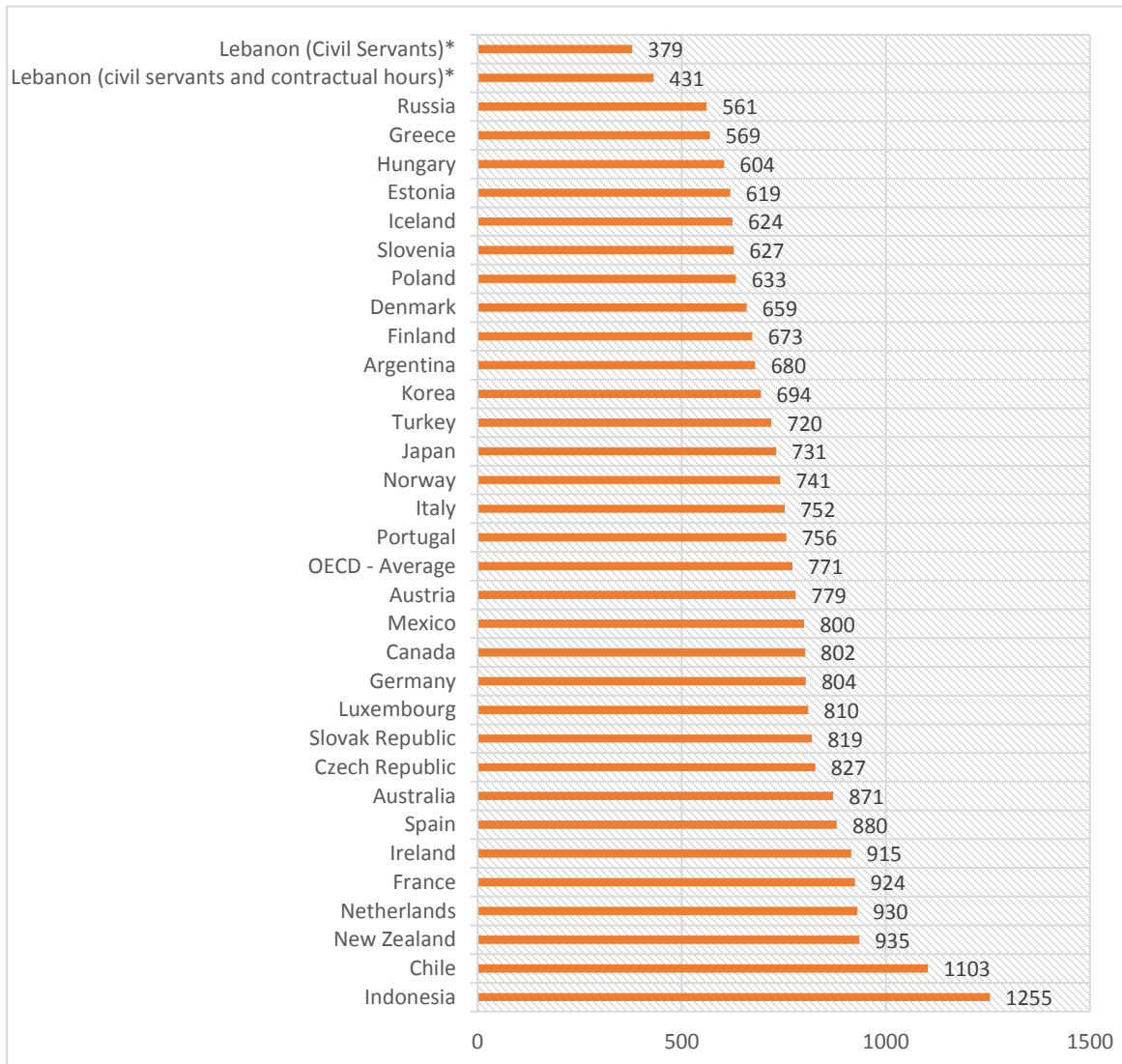
Figure 27. Average Weekly Hours Taught by Civil Servant Teachers



Source: Mount Lebanon Directorate.

34. **The teacher workload in Lebanon is extremely low, compared to the OECD average.** Compared to high-performing systems (see figure 28) where a teacher’s average annual working time is equal to 771 hours (OECD average), Lebanon’s working hours are extremely low. In Lebanon, the school year consists of 160 days at both the primary and secondary levels. This is 20 days shorter than that of high-performing systems, which average 180 days per year. Accounting for only civil servant work hours, Lebanon’s average is close to 380 hours per year, whereas the working time including contractuels and civil servants amounts to only 430 hours annually. This implies that the work load of a permanent staff is close to an average of 10 hours per week, which is far below the average international workload of 20 hours per week.

Figure 28. Teacher Working Time in Hours per Year (Primary), Selected Systems



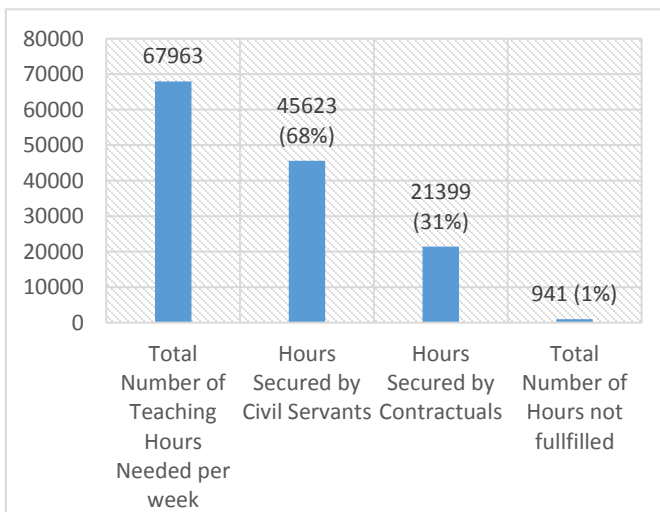
Source: OECD, Education at a Glance (2015); working hours for Lebanon were calculated by author using CERD data.

35. **The issues related to teacher (civil servant and contractual) deployment, salary scales, and teaching workload policy are acute, and the system lacks a systematic scheme to incentivize performance.** Although the total number of civil servant teachers has not increased since 2011, the distribution of these teachers is unevenly skewed to higher grades. Overall, the pupil-civil servant teacher ratio in public schools is 12:1. There is heavy reliance on contractual teachers, with some schools having more contractual teachers than permanent staff. Teacher workload is extremely low when compared to the OECD average, and salary scales do not correspond to the reduced workload. Salaries and wages constitute 84 percent of MEHE’s total spending, and the average teacher (civil servant and contractual) salary expenditure per student is estimated to be US\$1,580 for primary education and US\$1,090 for secondary education. In addition, the teacher qualifications in public schools are low, with 40 percent of the teachers without a university degree. The education system lacks a performance-based incentive system to evaluate and upgrade teacher ranks. Also, poor-performing teachers will not necessarily be expelled, nor are they provided any support to improve performance.

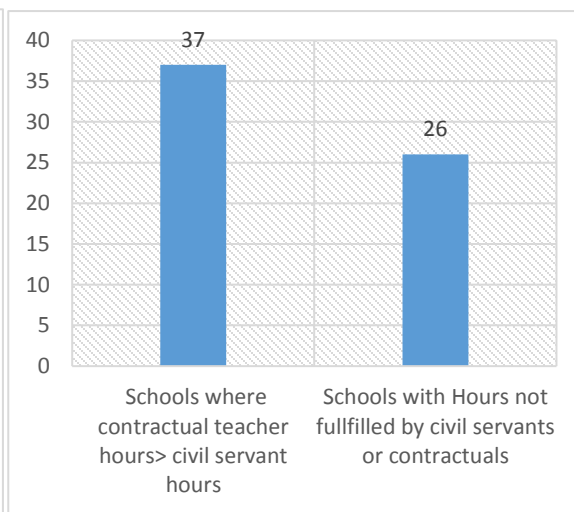
36. **Limited incentives exist to attract teachers to work in hard-to-staff schools or to teach critical shortage subjects.** MEHE is responsible for assigning public school teachers to their location of work. However, compared to high-performing OECD countries, Lebanon has limited or no official incentives for teachers to work in disadvantaged areas. A lack of incentives for teachers to work in hard-to-staff schools can result in having the least qualified teachers working in schools serving the most disadvantaged students and may contribute to further inequality in teaching quality and learning outcomes. In Lebanon, this problem is further compounded by the fact that contract teachers may be more likely to be placed in hard-to-staff schools. In addition, critical shortages in some regions and specific subject areas are identified by the Education Sector Development Plan (ESDP), but more information is required to explore possible solutions to address these regional and subject-specific shortages.

37. **In some schools of Mount Lebanon, civil servant working hours are less than the contractual teacher working hours.** Of the 206 schools in Mount Lebanon, there are 37 schools where contractual working hours are more than the civil servant working hours, and there are 26

Figure 29. Hours Devoted to Teaching by Contractual and Civil Servant Teachers in Mount Lebanon



Source: Mount Lebanon Directorate.



Source: Mount Lebanon Directorate.

where teachers are not teaching the required number of hours in classrooms. This highlights the presence of unequal and skewed distribution of workload across schools and teachers (figure 29).

Teacher Salaries

38. In terms of the adequacy of teacher pay, a full-time teacher's starting salary as a percentage of GDP per capita is approximately 82 percent, whereas a teacher's maximum salary as (as a percentage of GDP) is around 134 percent. However, the average salary of a teacher is around 50 percent. Given that most teachers in primary education belong to the lower grade level, the average salary scale would be a good approximation of the teacher pay scale. In secondary education, a teacher's maximum salary is around 169 percent, whereas the average salary is around 134 percent. Given that most of the teachers in secondary education belong to higher grade levels, the salary scale is much higher compared to the OECD countries (tables 10 and 11).

Table 10. Teacher's Salary as a Share of GDP per Capita (Primary Education)

Country	Maximum Salary (% GDP per Capita)	Starting Salary (% GDP per Capita)	Average Salary (% GDP per Capita)
Slovak Republic	64%	42%	53%
Estonia	66	50	58
Czech Republic	72	59	65
Hungary	74	46	60
Norway	74	63	68
Iceland	74	62	68
Poland	108	63	86
Italy	115	78	97
France	131	72	102
Lebanon	134	50	82
Greece	136	69	103
Ireland	138	76	107
Austria	142	72	107
Japan	168	76	122
Chile	169	81	125

Source: OECD, Education at a Glance, 2015.

Table 11. Teacher Salary as a Share of GDP per Capita (Secondary Education)

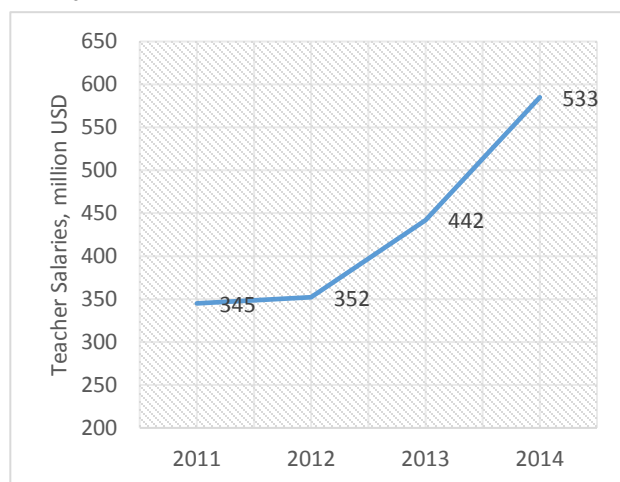
Country	Maximum Salary (% GDP per Capita)	Starting Salary (% GDP per Capita)	Average Salary (% GDP per Capita)
Norway	40%	55%	69%
Portugal	61	87	112
Estonia	66	50	58
Czech Republic	72	59	65
Iceland	78	60	69
Hungary	93	50	71
Netherlands	99	83	91
Finland	123	93	108
Denmark	126	106	116
Australia	131	91	111

Italy	132	85	108
Greece	136	69	103
Ireland	140	80	110
France	141	82	111
Austria	165	79	122
Lebanon	169	n.a.	134
Japan	173	76	124

Source: OECD, Education at Glance, 2015.

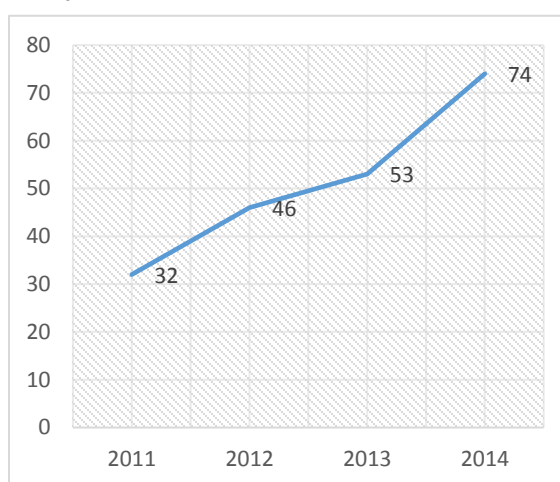
39. **Teacher salaries account have been on the rise since 2011 and do not correspond to the reduced workload.** Total salaries of teachers in primary and secondary schools has been on an increase since 2011. The per capita expenditure on a civil servant salary increased by 25 percent from 2011 to 2014 in both basic and secondary education, which could be as a result of the rising inflation (figures 30 and 31).

Figure 30. Spending on Civil Servant Salaries over Time



Source: CERD, Lebanon.

Figure 31. Spending on Contractual Salaries over Time



Source: CERD, Lebanon.

40. **The salary cost of permanent teachers¹⁶ per student in primary and secondary education is in line with the OECD average.** The salary cost of teachers per student for primary education is US\$1,556, while that for secondary education is US\$2,428. Although the salary cost per student is low compared to the OECD average of US\$2,677 for primary education, it is still higher compared to that of Chile, the Czech Republic, Estonia, Hungary, Mexico, the Slovak Republic, and Turkey (table 12).

¹⁶ Note that the per unit cost of permanent teachers is different from the one calculated taking into account both contractual and civil servant staff

Table 12. Salary Cost of Permanent Teachers per Student (USD)

OECD	Primary	Lower Secondary	Upper Secondary
Canada	4,755	4,755	4,839
Norway	4,307	4,525	
Germany	4,047	5,047	5,573
Belgium (Fl.)	3,842	5,218	6,344
Belgium (Fr.)	3,739	5,078	6,167
Spain	3,067	4,052	
Finland	3,008	4,749	
Korea	2,981	2,941	
Japan	2,790	3,491	
Portugal	2,777	3,516	4,366
Greece	2,720	3,515	
Italy	2,692	3,100	2,963
OECD average	2,677	3,350	3,749
Poland	2,247	2,519	
France	1,735	2,374	3,643
Lebanon*	1,556	2,428	
Turkey	1,368	1,459	1,800
Hungary	1,229	1,252	1,287
Chile	1,181	1,095	1,124
Estonia	1,015	1,350	
Mexico	958	1,057	
Slovak Republic	924	1,254	1,152

Source: OECD, Education at a Glance, 2015. *This number was calculated by authors using data provided by MoF

Conclusion

41. This chapter assesses teacher performance and qualifications against their expenditures in the form of salaries. The student-civil servant teacher ratio is extremely low, suggesting a surplus of teachers in the system. Moreover, the average working load is, on average, two hours per day, which is extremely low, given the international average. Moreover, there is massive hiring of contractual teachers to compensate for the low workload. Teacher salaries do not correspond to this low workload, putting an increased pressure on the education budget.

42. Teacher qualifications are low, and grades are skewed toward higher ranks. There are limited mechanisms to attract the best quality teachers into the profession. The education system suffers tremendously due to high salary expenditure and low performance.

Education Quality and Outcomes

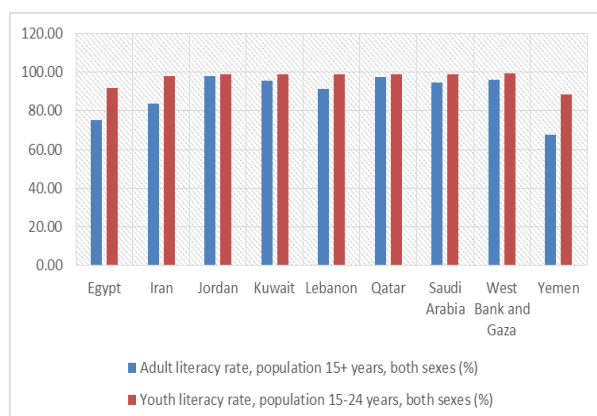
National and International Assessments

43. **MEHE continues to monitor the results of their expenditures and efforts by regularly assessing the performance of the education system through the TIMSS and PISA international assessments.** It is one of the few MENA countries where TIMSS scores did not decline in the 2007–11 period. It is one of the leaders in student assessment scores at the regional level, both in math and science, with results placing Lebanon 25th out of 42 countries for eighth-grade math and 39th out of 42 for eighth-grade science. Public schools exhibit lower academic outcomes in both international and national assessments. The level of public school students was 10 percent lower than that of private schools in the 2011 TIMSS. This gap in performance between public and private students is also reflected in the success rates of national examinations (for ninth graders), with a 73 percent success rate for private school students, and just 61 percent for public school students (in academic year 2013/14).

44. **The literacy rates in Lebanon are higher than the average rates in the Middle East and North Africa (MENA) region but still lag behind other economies with similar levels of development.** Lebanon’s adult and youth literacy rates (91.2 and 98.7 percent, respectively) are above the MENA average literacy rates of 85.6 and 95 percent, respectively, as shown in figure 32. However, Lebanon’s adult literacy rate is slightly below the 94.1 percent average for countries with a similar level of development, although the youth literacy rate for Lebanon is on par with the 97.6 percent average for these countries (figure 32 and 33).

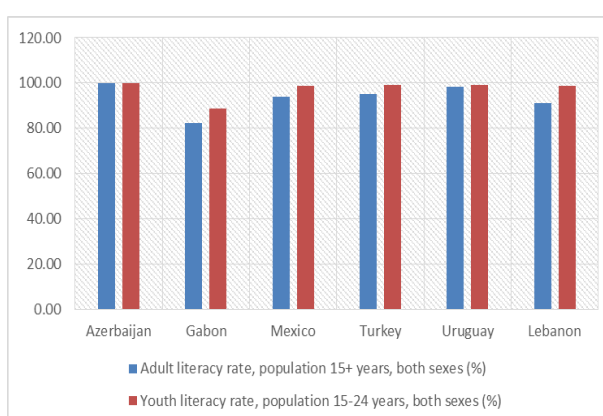
45. **Significant efforts need to be made to ensure Lebanon is on track with respect to the Sustainable Development Goals for achieving inclusive and equitable quality education and lifelong opportunities for all.** Lebanon ranks 67th out of 189 countries with respect to the UNDP Human Development Index of 2014. Progress made in the education system since the end of the war in 1991 has been commendable: Female literacy has been on the rise and is 86 percent, compared to a regional average of 61 percent (2007). However, wealth and gender inequity remains in access to education services and employment, which the government needs to address.

Figure 32. MENA Literacy Rates



Source: World Bank, 2013.

Figure 33. Literacy Rates in Comparator Countries



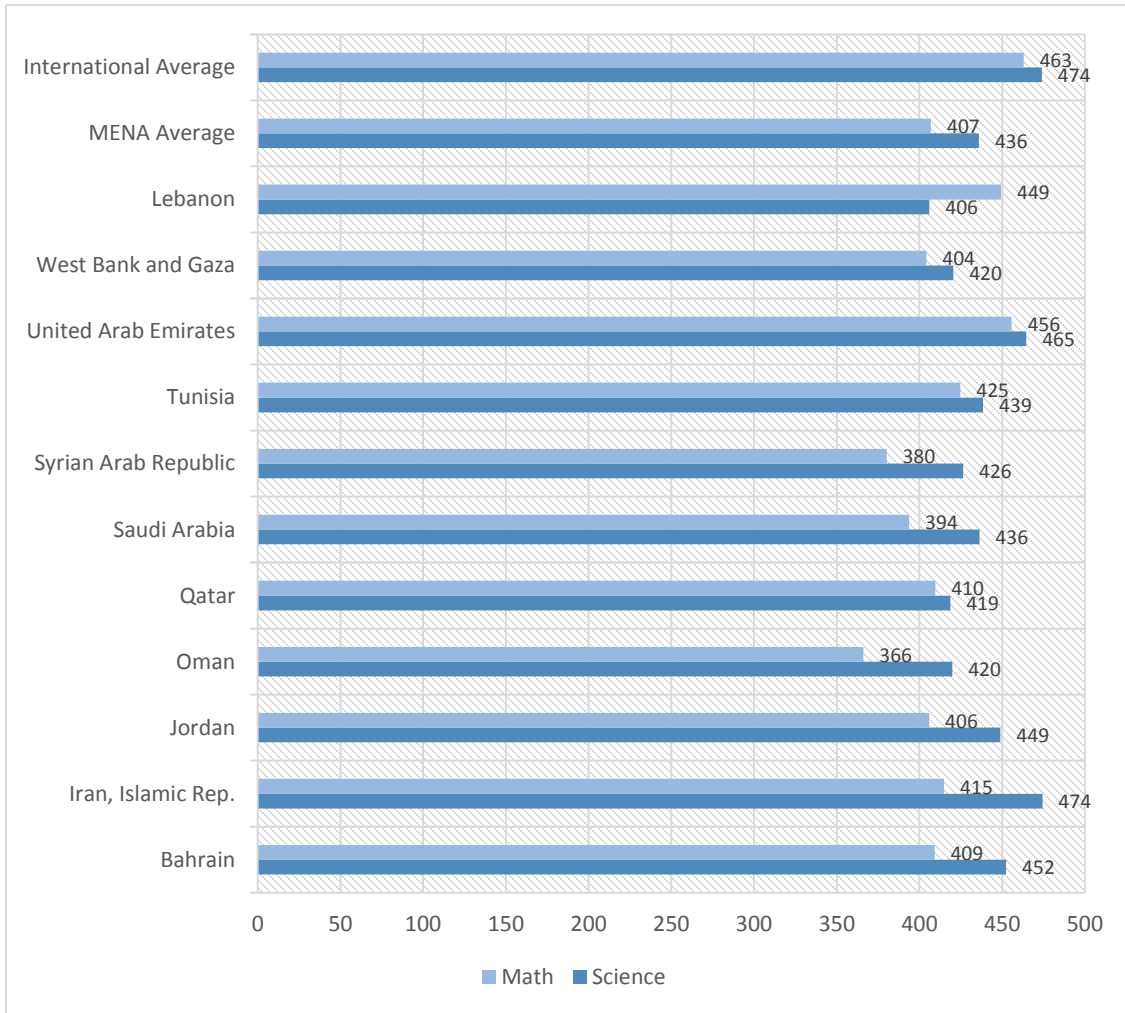
Source: World Bank, 2013.

46. **The General Secondary Diploma examination has been administered to grade 12 students since 1925.** The results are used to certify student completion of the school cycle and to determine selection to higher-education institutions. The results are officially recognized by certification and selection systems in Lebanon and abroad. Regular funding for the examination is provided by the government and covers all core examination activities. There are limited systematic mechanisms in place to ensure the quality of the examination. Additionally, there are no mechanisms, such as a permanent oversight committee, in place to monitor the consequences of the examination for students and other stakeholder groups. Another high-stake test is also being administered to ninth grades (Brevet).

47. **The Measuring Learning Achievement study was administered for the first time in 1994.** Since then, it has been operating on an irregular basis, each time assessing a different grade and set of subjects. Lebanon does not have a policy document on the National Large-Scale Assessment (NLSA) or a plan for future NLSA activities. Funding for activities, provided by the Center for Educational Research and Development, covers core NLSA activities as well as research and development. Although some mechanisms are in place to ensure the quality of the NLSA, there is no publicly available technical report or similar document. Also, no mechanisms are in place to monitor the consequences of the NLSA in terms of its impact on education quality or student learning.

48. **Student performance in Lebanon is significantly lower than the international average.** Based on TIMSS 2011, Lebanon has an average score of 449 in math, which is higher than the MENA average of 407 but lower than the international average. In science, the performance is lower and significantly below the MENA and international averages (figure 68). In addition, there has been no significant improvement in student scores over time. Since 2007, the Lebanon's performance has not improved, and it continues to score poorly in both math and science. In science, its score decreased from 414 in 2007 to 406 in 2011. Moreover, math scores remained the same since 2007 after a marginal increase from 2003 (figure 34).

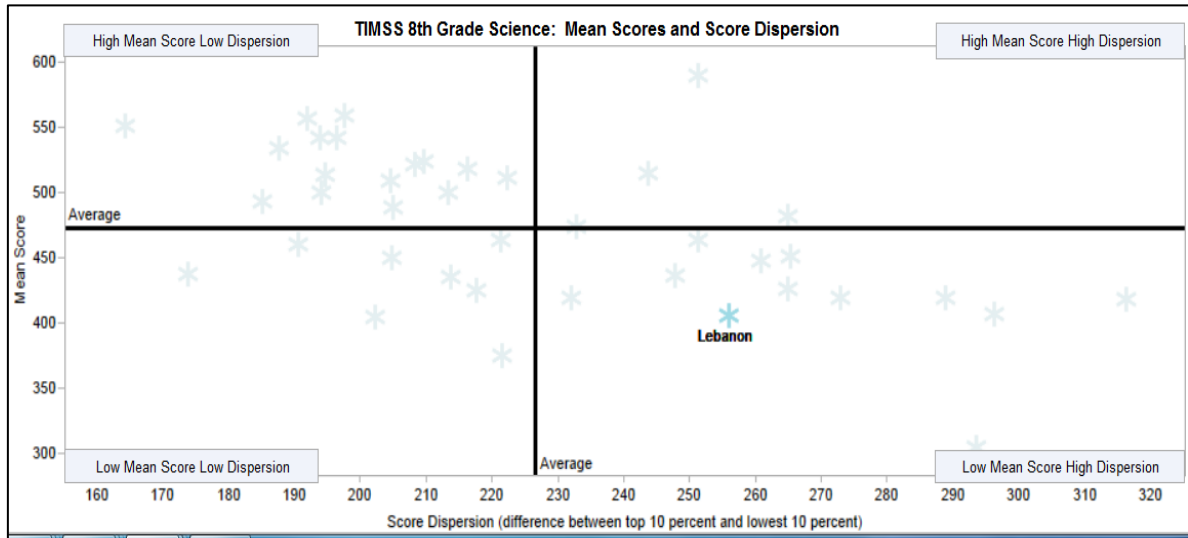
Figure 34. Student Assessment Scores in Math and Science (2011)



Source: TIMSS, 2011.

49. **Lebanon’s international assessment data are characterized by low mean scores and high dispersion rates.** Along with the low mean performance, Lebanon also faces a significant problem of high dispersion in scores. The high dispersion levels are due to differences not only among students, but also between schools (figure 35).

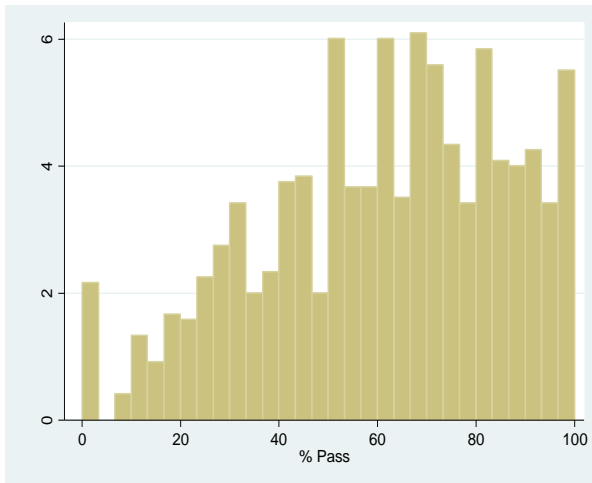
Figure 35. TIMSS Science Scores: Low Means and High Dispersion Rates



Source: World Bank.

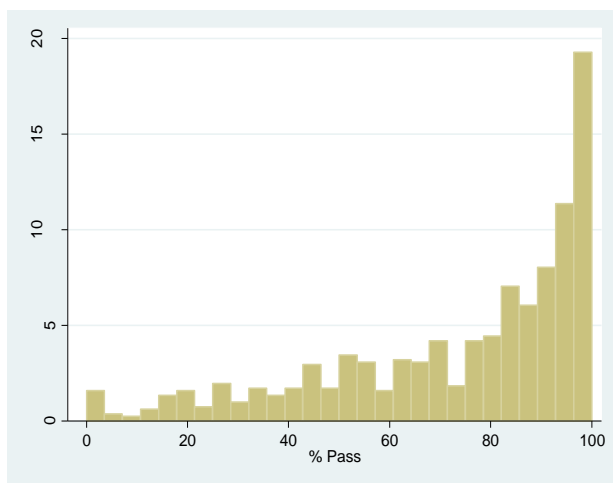
50. **The average student pass rate in national examinations for public schools was 61 percent, while that of private schools was 73 percent.** There is space for improvement in both type of schools, given the high failure rate in examinations. Thirty-nine percent of students did not pass the examinations in public schools, while the corresponding number in private schools was 27 percent (figures 36 and 37) However, the proportion of students achieving a score between 80 and 100 percent is higher for private schools that public schools.

Figure 36. Success Rate in Public Schools



Source: CERD data (2013) on Brevet, General Science (SG) and Life Science (SV), Humanities (LH), Sociology and Economics (SE).

Figure 37. Success Rates in Private Schools

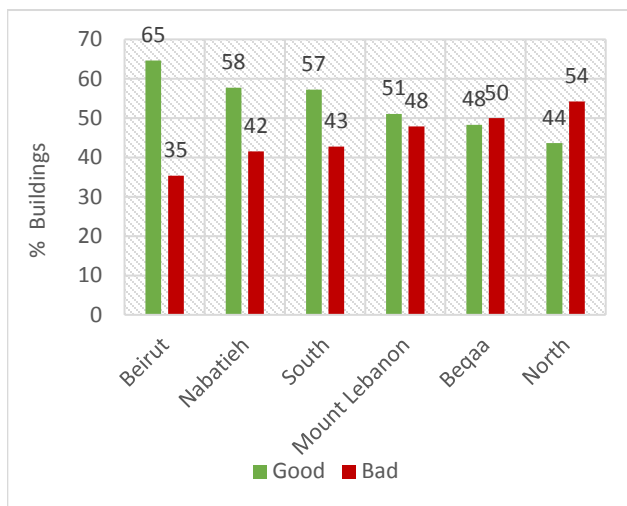


Source: CERD data (2013) on Brevet, General Science (SG) and Life Science (SV), Humanities (LH), Sociology and Economics (SE).

Factors affecting Learning

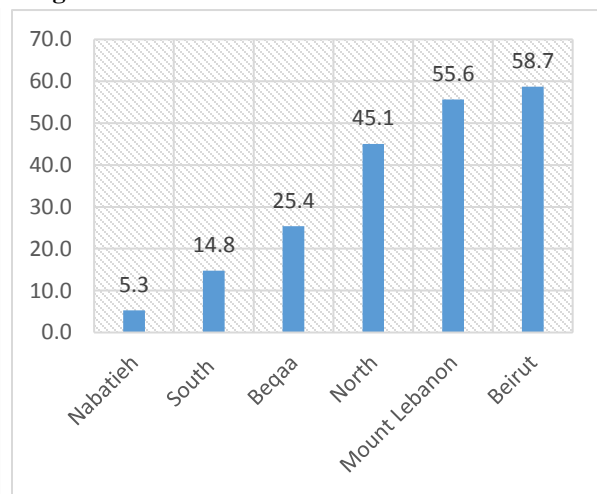
51. **The quality of school buildings in Beirut and Mount Lebanon is much better compared to that of buildings in North and Bekaa (figure 40).** Examining the physical condition of the buildings, we find that in the region of North, the conditions of schools are the worst compared to other regions. Fifty-four percent of the schools in North are in a bad condition, whereas only 44 percent are in good condition. Similarly, 50 percent of the schools in Beqaa are in bad condition, while 48 percent are in a good condition. Beirut is the only region that has 65 percent of the schools in good condition. Only 35 percent of the schools in Beirut are in bad condition (figure 39). Moreover, Beirut had the highest number of rented buildings in the region (59 percent), followed by Mount Lebanon (56 percent) and North (45 percent). Nebatiyeh has the least percentage of rented buildings, followed by South, which has only 15 percent of school buildings rented (figure 39).

Figure 38. Quality of School Buildings



Source: CERD, Lebanon.

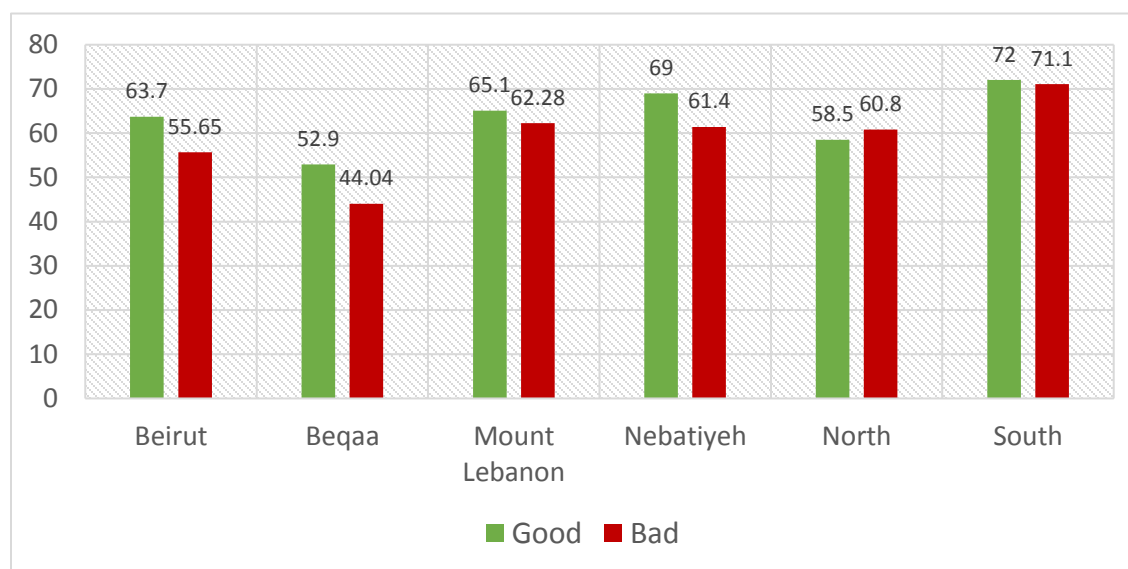
Figure 39. Percentage of Rented Buildings, by Region



Source: CERD, Lebanon.

52. **Controlling for the type of school buildings, we find the percentage of students passing the examinations is higher in regions that have a greater percentage of good quality school buildings** (at a 5 percent level of significance). For example, in South, an average of 72 percent of students pass the examinations, and 57 percent of the school buildings are in good condition. Beqaa, on the other hand, has an average of 50 percent of students passing the national examinations and only 48 percent of the buildings in good condition. This means that the physical quality of schools is correlated with the performance outcomes of students in Lebanon (figure 40). However, the ownership of the school buildings (rented versus owned) has no significant effect on learning outcomes. Students in rented buildings perform at the same level as students who study in government-owned buildings. This means that the focus of the government should not be on building schools, but focusing on improving the quality of resources in the existing schools.

Figure 40. Mean Pass Rates, by Quality of Buildings



Source: CERD, Lebanon.

53. **Significant gaps are found in the availability of resources in schools, which has a negative influence on teaching and learning.** For each of the different resources, school principals indicate whether or not schools faced shortages in the availability of resources. The shortages were especially acute for a large number of resources such as instructional materials, general supplies, school buildings, science equipment, and availability of calculators. Table 13 shows the gaps in the availability of resources in schools.

Table 13. Shortages/Gaps in Availability of School Resources

Shortage of Resources in Schools (%)	Little or No Shortage	Significant Shortage
Instructional materials	51.63%	48.37%
General supplies	40.84	59.16
Buildings	51.16	48.84
Heating and cooling systems	54.40	45.60
Instructional space	54.39	45.61
Technologically competent staff	59.16	40.84
Computers for instruction	60.49	39.51
Computer software for instruction	65.87	34.13
Library materials	62.93	37.07
Audiovisual resources	67.02	32.98
Calculators	53.87	46.13
Science equipment	52.53	47.47

Source: TIMSS 2011.

54. **Acute shortages in availability of school resources severely influence the learning performance of students.** The marginal impact of the school resources/inputs and student characteristics on math and science performance is very significant. School inputs include shortages in the availability of instructional materials and supplies required for teaching and

learning. Results reveal that the absence or limitation of general supplies in schools resulted in a 16 percent decline in math scores and 21 percent decline in science scores. Similarly, the shortage and absence of instructional materials have a significant impact on the student performance. A 1 percent decrease in the availability of the materials reduced student math scores by 21 percent and science scores by 28 percent, controlling for other things. These results suggest the importance of efficient allocation of resources in improving the learning outcomes of students.

55. **Family background such as socioeconomic status of the students as well as their behavior/attitude also significantly influences their performance** (table 14). A student from an economically advantaged background performs better than a student who comes from a disadvantaged background. Other things remaining the same, an economically advantaged student performs 45 points higher in math and 63 points higher in science, compared to a student who comes from a poor household. Language is another important determinant of outcomes. If the language of the test is generally spoken at home, then the student scores increase by 14 points in math than otherwise. A student's attitude such as attendance in classrooms significantly impacts learning scores. A one percent decrease in student attendance rates decreases the student's performance by 22 and 28 percent in math and science, respectively. The results highlight the importance of the quality of teaching and availability of school inputs in enhancing the quality of education in the schools. The government should focus on improving access to school resources and issues related to equity to create incentives for an increase in student participation in schools. In addition, the performance of (high-performing) public schools is much lower compared to the high-performing private schools. The average math score of a public school student is 37 points lower than that of a private school student, whereas the average science score of a public school student is 52 points lower than that of a private school student, reflecting the need for improving the quality of teaching and learning in these schools.

Table 14. Impact of School Resources, Family Background, and Student Characteristics on Student Performance, TIMSS 2011

Variables	(1) Math	(2) Science
Shortage of general supplies	-16.80***	21.21***
Shortage of instructional materials	-21.60**	-28.21**
Student absenteeism	-22.62**	-28.39**
Socioeconomic status (economically advantaged)	45.06***	63.13**
Language of test spoken at home	13.93*	3.03
Attitude toward math	8.78	
Type of schools (Public=1)	-36.7***	-52.4***
_Constant	419.7***	377.5***
<i>N</i>	3,394	10,683

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

56. **Size of the school, quality of school buildings, and salary expenditure on teachers are factors that influence student performance in national assessments** (table 15). A regression analysis was conducted to determine the impact of school variables on the learning outcomes of students (as school variables) measured by the student pass rates in national examinations. Across different regression models, we find that the school size (or total number of students per school) is the single most important factor that influences the student pass rate in examinations. The bigger the school size, the better is the performance of students in classrooms. On average, student pass rates improve by 4 points if the school size is between 125 and 249 students, and by almost 10 points if the school consists of more than 250 students. This is because of potential economies to scale realized when the schools are bigger, which results in efficient outcomes. Building schools across locations is a political issue that needs to be addressed. There are also differences in outcomes between elementary and secondary schools. Generally, secondary schools tend to perform better than elementary ones in Lebanon, but in our model this is not a determinant of the student pass rates. The analysis also shows that high salaries for permanent teachers are associated negatively with learning outcomes. This may be related to the reduction in teaching responsibility being associated with staff seniority.

57. **The quality of school buildings is another important factor that influences student success rates** (table 17). Good quality school buildings imply improved school resources, which positively affects students' performance. In models (4) and (5), we find that in schools with better quality buildings, the average pass rate of students is approximately 4 points more than those attending school in with poor quality buildings. In model (4), for example, the average student pass rate is 55. Other things remaining the same, the student pass rate increases by 3.5 points if the school building is of good quality. The ownership of the school buildings does not seem to have any impact on the student scores. This is true across regions, as seen in figure 41.

58. **The per capita salary cost of permanent teachers is negatively associated with learning outcomes** (table 15). The higher the per capita expenditure on teacher salaries, the lower is the student pass rate. Higher expenditure per school implies that the teacher count in that school is higher, which in turn corresponds to low teacher productivity/workload and low student performance. In model (7), we find that an increase in salary cost by LL 1¹⁷ results in a decrease in student scores by 0.40 points, *ceteris paribus*. This calls for government intervention to focus on improving the productivity of teachers, so the burden of teacher inefficiency does not fall on the students and the government's education budget. Teacher qualifications (as measured by teacher grades) do not seem to affect student performance. In addition, contractual teachers do not seem to have a significant effect on student learning outcomes (in the regression); the reason for this is because these teachers are evenly distributed across schools. It also seems that what matters is the quality of contractals, rather than their quantity, as some contractals are of high quality, teaching in both private and public schools.

¹⁷ 1 Lebanese pound.

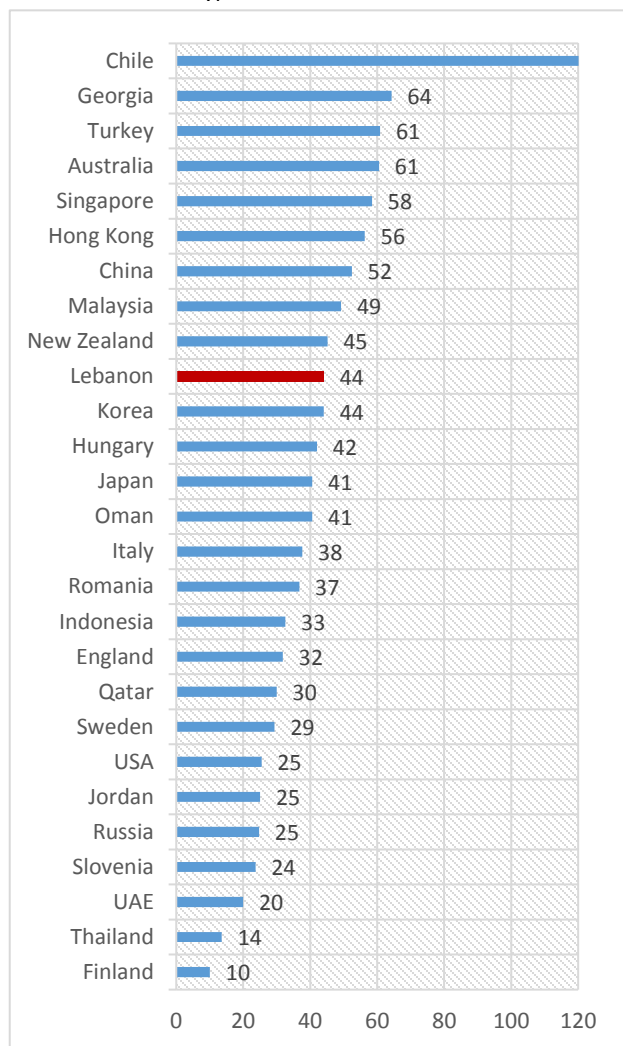
Table 15. Impact of School Inputs on Student Performance in Public Schools, 2013/14

School Inputs	(1) Pass	(2) Pass	(3) Pass	(4) Pass	(5) Pass	(6) Pass	(7) Pass
School size (middle 33%)	6.740***	4.776*	4.758*	4.675*	4.671*	4.265	3.691
School size (top 33%)	13.30***	11.27***	11.66***	11.62***	11.67***	10.01***	9.885***
Permanent teacher salary cost per student		-0.30**	-0.30**	-0.31**	-0.31**	-0.38**	-0.40*
Ownership of building (Rented=1)			0.088	0.0456	-0.061	2.209	2.386
Quality of school buildings (Good=1)				3.432*	3.55*	2.682	2.912
Type of school (Basic=1)					-8.44	-8.97	-9.07
Teachers' grades (more than 30)						0.0022	0.0014
Number of contractual teachers							-0.028
_Constant	53.27***	56.12***	55.92***	47.31***	55.28***	57.96***	58.37***
<i>N</i>	966	933	896	896	896	690	670

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

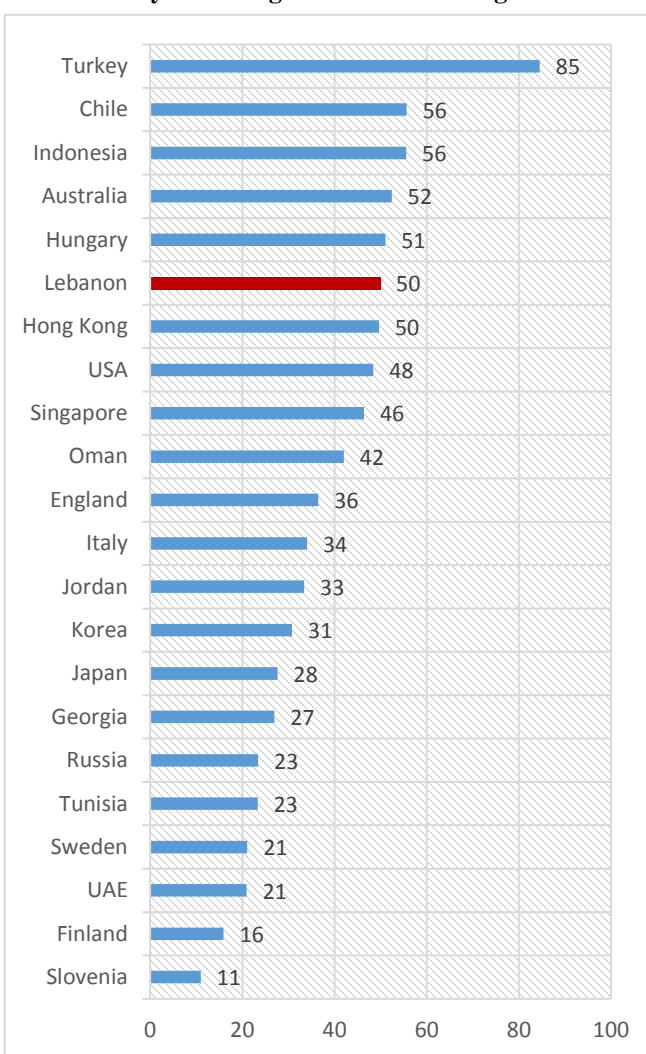
59. **Significant wealth inequity exists in the performance of students.** Family background is an important determinant of the performance, and the gap between students coming from high-income households and low-income households is very high. Students from wealthy backgrounds score 44 points higher than students who come from poor backgrounds. Similarly, students who come from high-income residential areas tend to perform better 50 points higher than students who come from low-income areas (figures 41 and 42).

Figure 41. Difference in Math Scores between Students from High- and Low-Income Areas



Source: TIMSS, 2011.

Figure 42. Difference in Math Scores between Economically Advantaged and Disadvantaged Students



Source: TIMSS, 2011.

Conclusion

60. While Lebanon has participated in TIMSS (2003, 2007, 2011) and PASEC (2009) over the last 10 years and has taken concrete steps to participate in PISA 2015 and TIMSS 2015, there are no opportunities within the country to use the scores to make a positive impact outcomes.

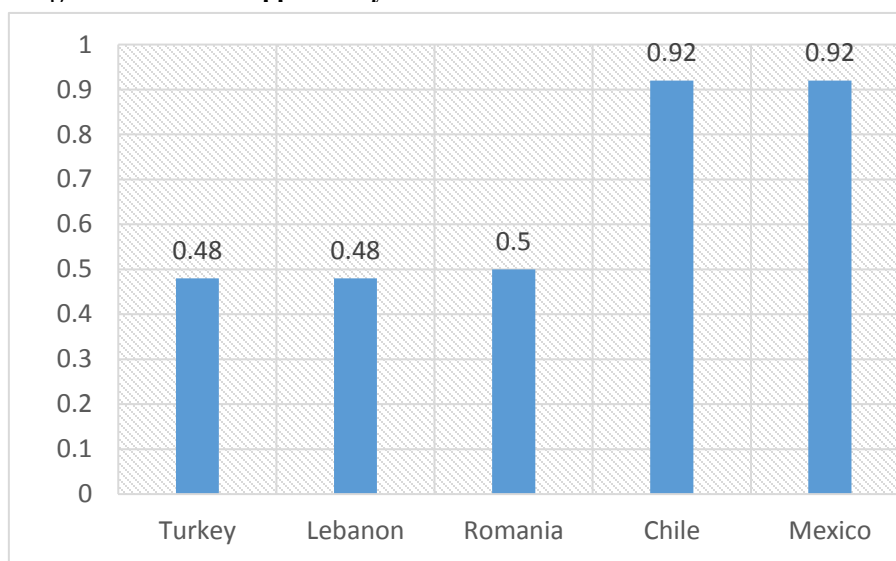
61. This chapter assessed the quality of public spending on basic education in terms of its relation to learning outcomes and allocation of school resources. The regression analysis showed that acute shortages of school supplies and instructional materials, student behavior, teacher salaries, and school size have significant impacts on learning outcomes. While quality of school buildings has an impact on student performance, ownership of buildings (rented versus owned) has no impact on outcomes. This implies that the government should focus more on rehabilitation and less on construction of buildings. Efficient allocation of resources is key to improving education performance.

Access, Equity, and Inclusion

Gender Equity

62. **The Human Opportunity Index (HOI) for Lebanon is low, reflecting inequality in access to education opportunities in the country.** The Human Opportunity Index (HOI) is a measure that combines into a single indicator both access to education and how equitably access is distributed.¹ HOI brings distributional dimension showing how unequally opportunity is distributed across selected characteristics. The higher the distance between coverage rate and HOI, the more unequal distribution of opportunity is. The HOI for Lebanon is 0.48, which is lower than that of Chile, Mexico, and Romania (figure 43). This reflects that socioeconomic, wealth, birthplace, gender, and family background significantly impacts the child's access to education services and that personal circumstances (birthplace, wealth, race, or gender) impact a child's probability of accessing the services that are necessary to succeed in life (timely education, running water, or connection to electricity).

Figure 43. Human Opportunity Index

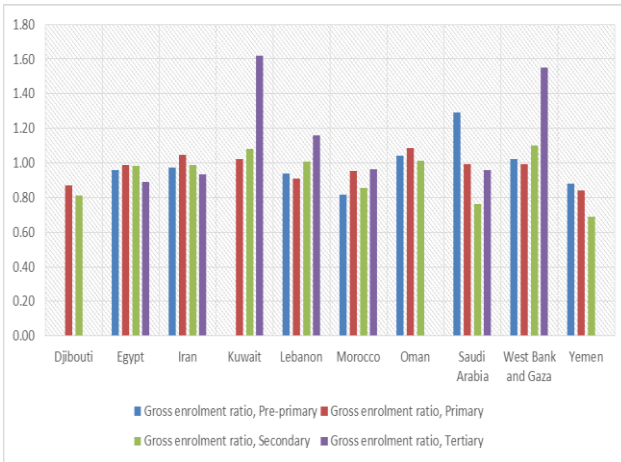


Source: Calculations based on TIMSS,

63. **Lebanon exhibits gender balance in enrollment, with the gender parity index at 0.94 for pre-primary, 0.91 for primary, 1 for secondary, and 1.2 for tertiary education in 2014.** These figures are similar to the indices in other MENA countries and countries with a similar level of development¹⁸ as Lebanon (see figures 44 and 45, respectively). Thus, in the MENA region, the pre-primary, primary, and secondary gender parity indices range between 0.8 and 1. However, for tertiary education, the gender parity index is more than 1 for almost all upper-middle-income countries.

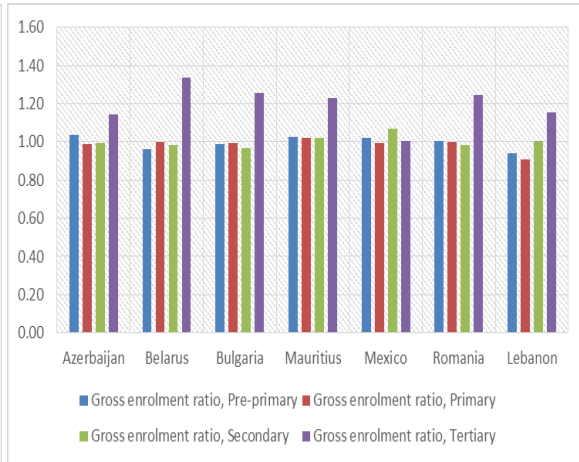
¹⁸ "Countries with similar levels of development" refers to countries with GDP per capita in PPP terms 10 percent higher or lower than Lebanon.

Figure 44. MENA Gender Parity Index



Source: World Bank, 2014.

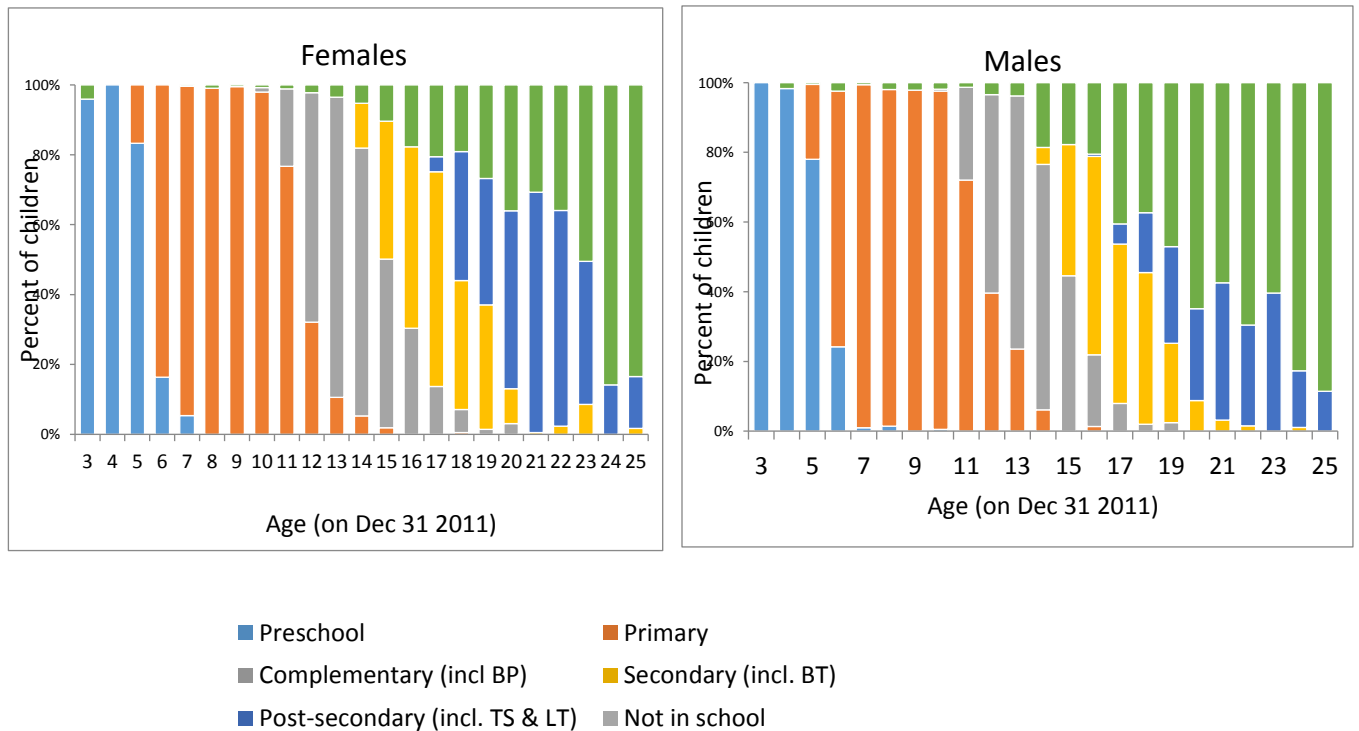
Figure 45. Gender Parity Index in Comparator Countries



Source: World Bank, 2014.

64. **Females stay in school longer than males in Lebanon.** Data on individuals' school attendance recorded in the 2011 HBS provide a picture of participation in education by age and gender. For children up to age 13, estimates of participation in education are quite high, exceeding 95 percent (figure 46). After age 13, the difference in participation between males and females becomes apparent, with a much higher percentage of females remaining in school than males, especially at the secondary and post-secondary levels.

Figure 47. Enrollment Levels, by Age and Gender

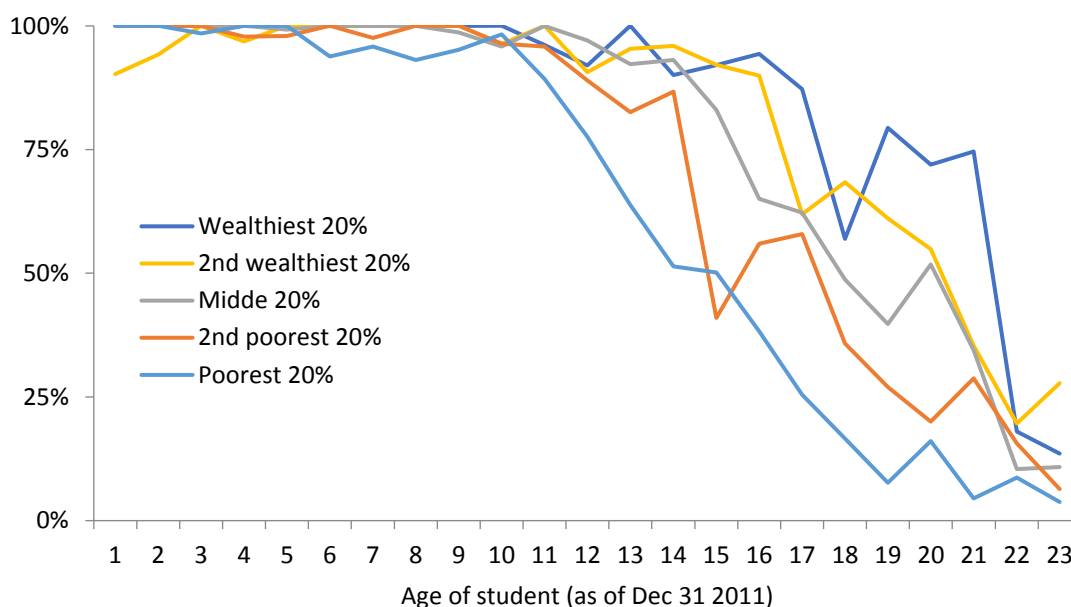


Source: HBS, 2011/12.

Wealth Inequity

65. **Children from wealthier households stay in school longer than children from poorest households.** The CAS HBS 2011 survey provides data on the attendance of children in households as well as household assets to identify the relative wealth of the household. The disparity in school attainment is apparent from these data. For example, by age 19, 80 percent of children from wealthiest quintile of the population are in school, while only 8 percent of children from the poorest quintile are in school. Given the strong association between educational attainment and earnings, that children from poorer households tend to stay in school for fewer years than children from wealthier households only perpetuates inequality (figure 48).

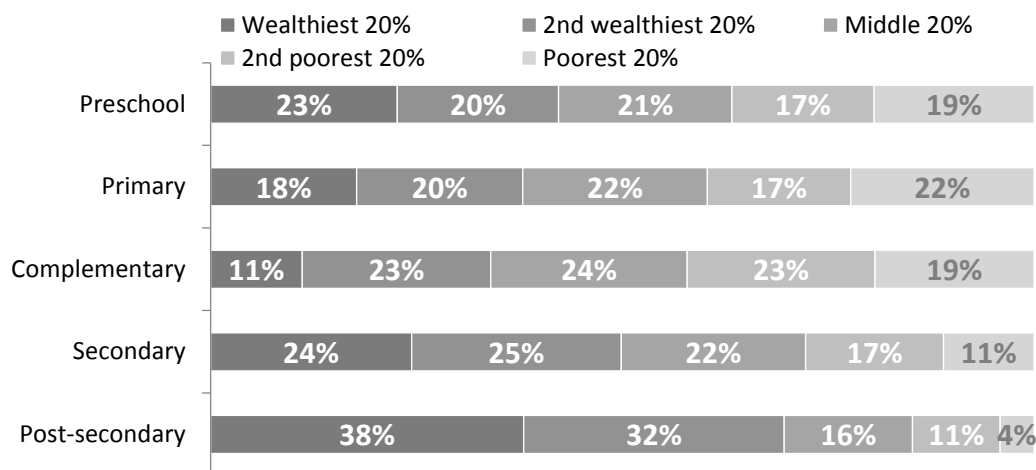
Figure 48. Percentage of Students in School, by Age and Wealth Quintile



Source: Author's calculations using CAS HBS 2011.

66. **Poorest households are excluded from higher levels of education.** Information about household characteristics and assets included in the 2011 HBS can be used to construct an asset index as a measure of household wealth. The wealth quintile composition of each level of education reveals that the poorest households are underrepresented in secondary and post-secondary education (figure 52). In secondary education, the poorest 20 percent of households represent 11 percent of students, while, in post-secondary education, the poorest 20 percent of households represent only 4 percent of students. The wealthiest 20 percent represent approximately a quarter of secondary students and 38 percent of post-secondary students. The underrepresentation of poor households in education presents an important inequity in Lebanese society. Given the importance of education for earnings, lack of educational attainment for poor households implies lower earnings in the future and lower likelihood of escaping poverty. Given the importance of post-secondary education for female labor market participation, female youth from poor households are especially at risk of exclusion from the labor market.

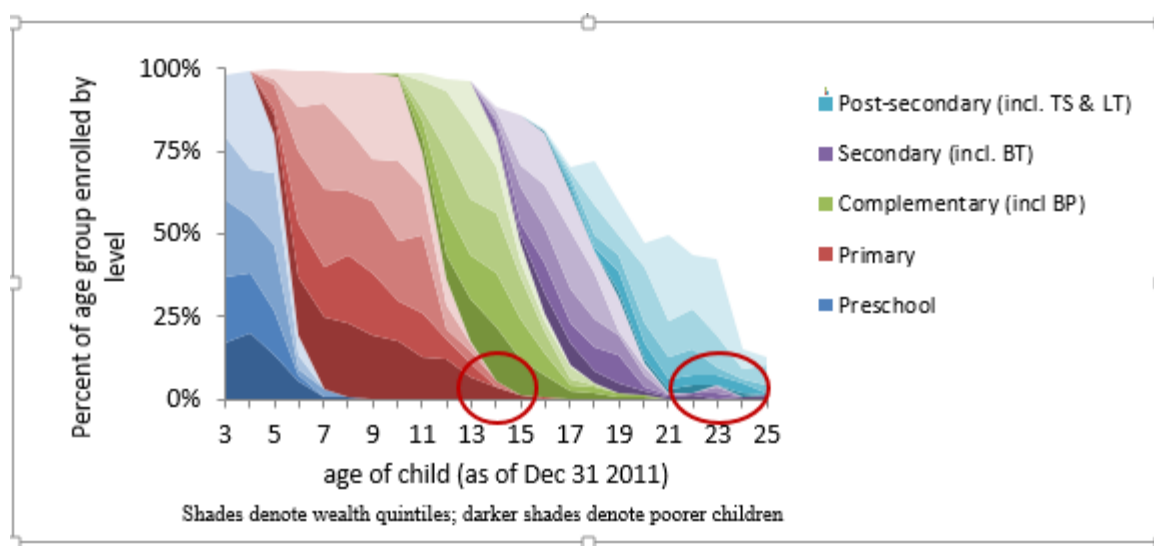
Figure 52. Composition of Each Level of School, by Quintile



Source: Authors' calculations using CAS HBS 2011. Wealth quintiles defined by asset index. Levels include corresponding vocational and technical programs.

67. **Children from poorer households tend to be overaged in primary and complimentary school levels.** While children from poorer households tend to be sufficiently represented in primary and complementary level education, they are more likely to be overaged (figure 54). At the primary school level, children from the poorest 20 percent comprise nearly half of overage children; even at the primary school level the poorest children are disadvantaged. Consequently, resolving inequality in access to secondary education for poor children requires mitigating disadvantage at the lower levels of education as well.

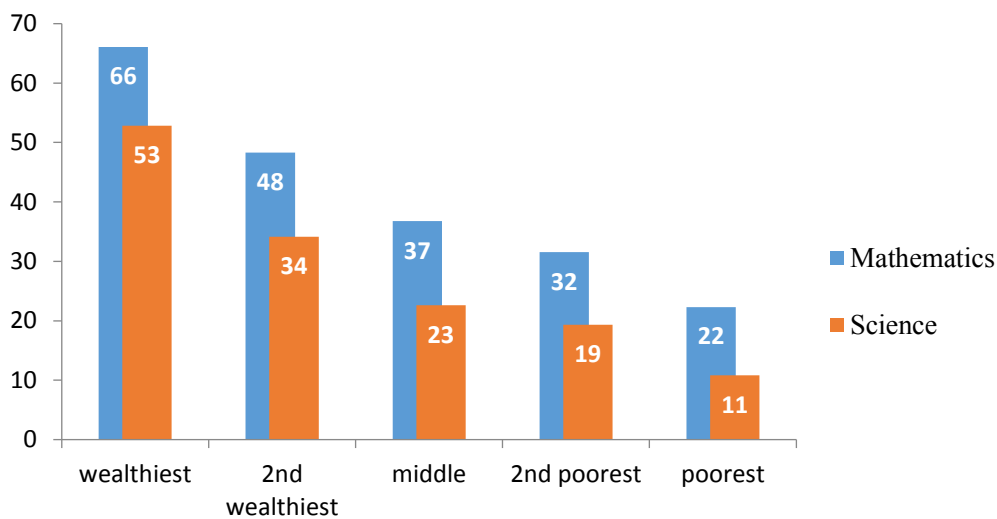
Figure 54. Percentage of Children Enrolled in Each Level, by Age with Wealth Quintile Distribution



Source: HBS, 2011/12.

68. **In Grade 8, the poorest students are excluded from achieving minimum proficiency in mathematics and science according to the TIMSS international assessment.** Lebanon participated in the 2011 Trends in Mathematics and Science Study, in which students were tested on a wide range of skills and competencies. Data on the students' households including various possessions were also collected that provide a measure for household wealth. The difference in achievement between the wealthiest and poorest students is stark: 66 percent of the wealthiest quintile of students achieves minimum proficiency in mathematics while only 22 percent of the poorest quintile of students achieve this (figure 56). In other words, the wealthiest quintile is three times more likely to achieve the minimum proficiency in mathematics than the poorest. In science, the wealthiest quintile is nearly five times more likely.

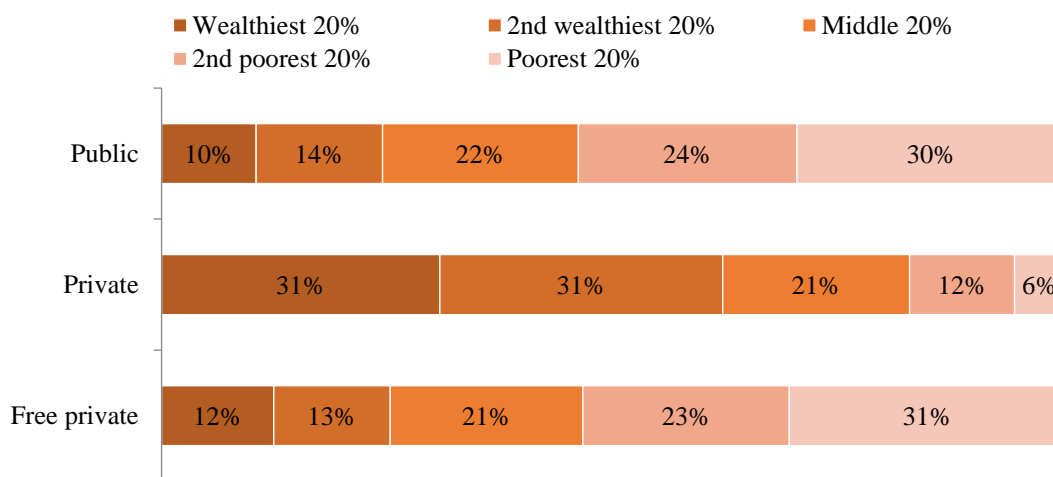
Figure 56. Percentage of Eighth-Grade Students Attaining Intermediate-Level Achievement in TIMSS, by Wealth Quintile



Source: Author's calculations using Lebanon TIMSS 2011.

69. **Private schools tend to cater to the wealthiest with the poorest being significantly underrepresented in fee charging private schools.** The CAB HBS 2011 survey reveals that the poorest 40 percent of the children comprise only 16 percent of students at private, fee-charging schools (figure 57). In public schools, they represent 54 percent of students. The wealthiest 40 percent of children comprise 62 percent of students at private, fee-charging schools. If private schools provide higher quality education than public schools, then the inaccessibility of private schools to the poorest implies that private schools are hindering equity rather than promoting it.

Figure 57. Composition of Each Type of School, by Wealth Quintile



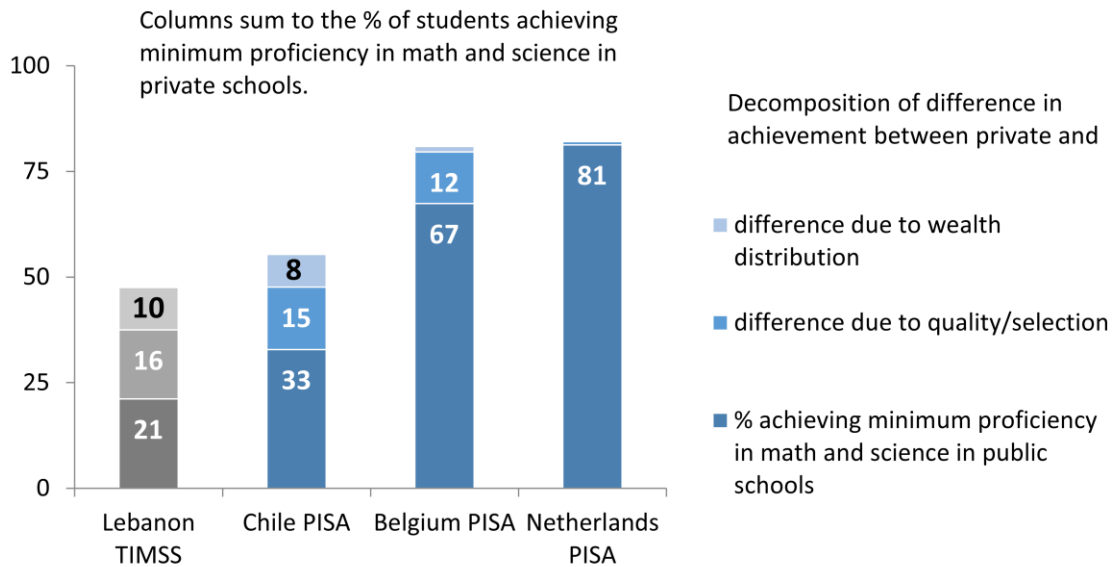
Source: Author's calculations using CAS HBS 2011. Wealth quintiles defined by asset index.

Engaging the Private Sector

70. **Students in private schools attain higher achievement than public schools when accounting for differences in student characteristics; underrepresentation of the poorest students implies that private schools exacerbates inequity.** The gap in achievement between students attending public and private schools is considerable: 21 percent of students in public schools attain minimum proficiency in both mathematics and science, while more than twice as many private school students, 47 percent, attain this level of achievement. This difference in achievement can be decomposed into a portion attributable to differences in student background and to a portion attributable to school quality (and unobserved characteristics of the student related to school selection by the student). A difference in achievement attributable to the quality of private school does not exacerbate wealth inequality in itself as long as the poorest students have equal access to private schools. However, if there is a difference in achievement owing to differences in student characteristics, this portion provides a measure of the extent to which private schools worsen wealth inequality in learning achievement. In Lebanon, the portion of the difference in achievement between public and private school students attributed to differences in student background is 10 percent. If the poorest students had equal access to both public and private schools, then the difference in achievement would be only 16 percent, and the school selection would not contribute to the gap in achievement between the wealthiest and poorest students. This is the case in Belgium, where students in private schools are 12 percent more likely to achievement minimum proficiency in math and science, but there is no difference in access to private schools (figure 58).

71. **As Belgium and the Netherlands demonstrate, it is possible to leverage the benefits of a large private education sector without compromising equity; however, public subsidization of private schools is needed.** Both Belgium and the Netherlands have significant private sector provision in education that tends not to contribute to wealth inequity (figure 58). There are significant differences in how Belgium and the Netherlands finance private schools compared to Lebanon. First, public financing of education is much higher in Belgium and Netherlands. Second, both public and private schools in these countries rely heavily on public subsidies for financing. In the Netherlands, public financing comprises 96 percent of private schools’ revenue, while, in

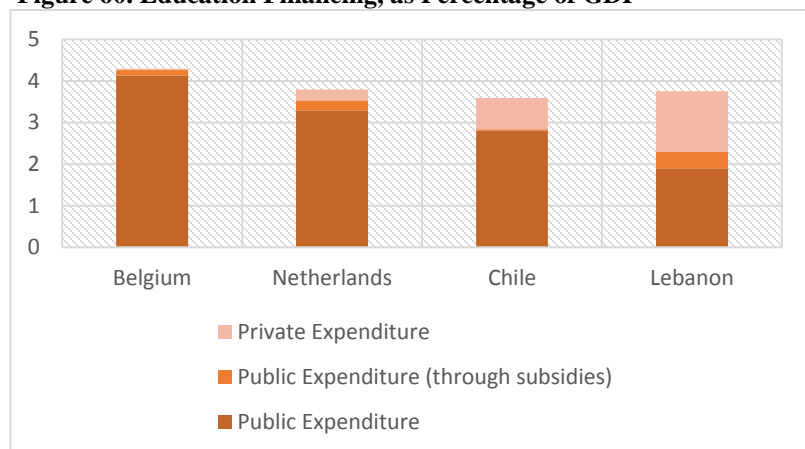
Figure 58. Decomposing Difference in Percentage of Students Attaining Minimum Proficiency in Math and Science



Source: Authors’ calculation using PISA and TIMSS 2011 student achievement data. The difference due to quality/selection is the difference in achievement between students in public school and their predicted achievement if they were in private school. For the Netherlands, the net difference is shown as public school students tend to be wealthier.

Belgium, it contributes 85 percent (Figure 60). In Chile, where private schools exacerbate wealth inequity in achievement to a small extent, public financing comprises only 68 percent of private school revenues. Compared to international standards, Lebanon allocates a small amount of public financing to education, leaving significant scope for increasing public subsidization of private schools, especially for the poorest ones.

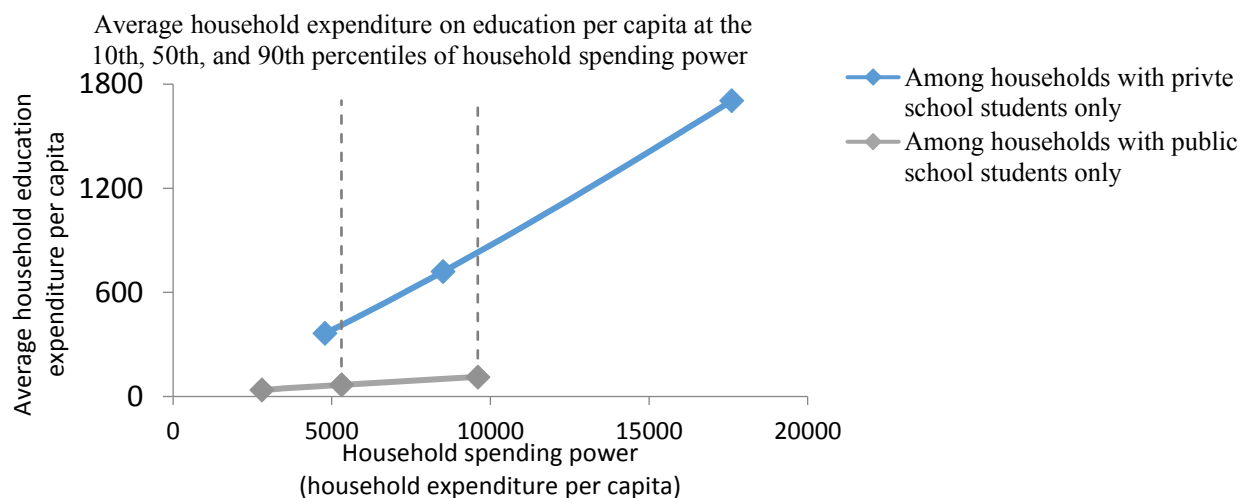
Figure 60. Education Financing, as Percentage of GDP



Source: OECD 2015. *Figures for Lebanon was calculated using data from Ministry of Finance, 2013; source of public expenditure from UNESCO UIS; source of private expenditure estimated by the author using the CAS HBS 2011/12.

72. **More than half of the population in Lebanon have sufficient spending power to send their children to private school, despite the rising education expenses; any increase in public subsidization of education would be targeted to the poorest households to maximize effectiveness.** Comparing the average amount households spend on tuition and registration fees with their spending power reveals the need to target public subsidization to the poorest. More than half of households that send their children to public schools have the same spending power (as measured by per capita household expenditure) as households sending their children to private school (figure 63). The poorest 50 percent of households sending their children to public school have spending power that is less than or equal to the poorest 10 percent of households sending their children to private school. This suggests that these households have limited scope to finance private school alone and that these households would benefit most from any public subsidization of private schools.

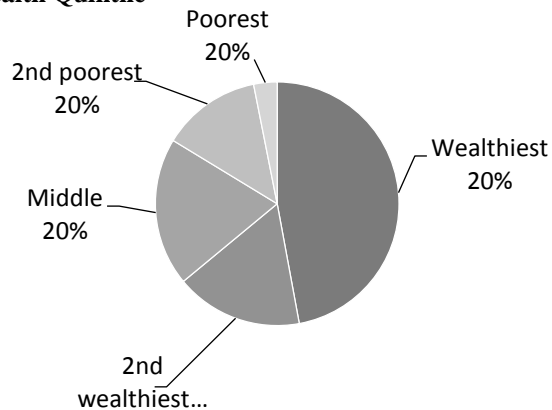
Figure 62. Household Spending Power



Source: Authors' calculations using CAS HBS 2011. Private schools exclude free private school category. Average education expenditure per capita (total household expenditure on education divided by number of household members) modeled using a log transformed regression model.

73. **Public subsidies currently benefit the wealthiest households in Lebanon.** The 2011 CAB HBS survey collects data on the amount of public government allowances for education. The wealthiest quintile of households received 47 percent of total subsidies measured in the survey (figure 66). The poorest 40 percent of the population received just 16 percent of subsidies.

Figure 66. Distribution of Total Public Allowances, by Wealth Quintile



Source: Author's calculations using the CAS HBS

Conclusion

74. Tremendous efforts need to be made by the government to reduce education inequality. In this chapter, we examined income inequity and gender inequity, which remain substantial. Education inequality among households by income groups remains huge, as shown by the differences in access to schooling (private and public) as well as learning outcomes. The wealthiest households have more access to public allowances than poor ones. Similarly, gender inequity is highly prevalent: Females tend to stay longer in schools than males.

75. There is a need for a sound public-private partnership model, without compromising the equity and access to education. Lessons could be drawn from other countries such as Belgium, Colombia, the Netherlands, and the Philippines, which have managed to develop such a system successfully.

Data and Public Financial Management

The Institutional Framework and Capacities

76. **The institutional framework dates to the 1950s and lacks the basic public finance management (PFM) functions of a modern administration.** MEHE, for instance, does not perform the function or have a unit to undertake critical tasks such as strategic planning, performance management, monitoring and evaluation, internal audits, and the like. Moreover, the Ministry does not have a dedicated team to prepare its budgets or set its sector priorities for the coming years. The policy is devised by either the Minister and/or the director general, who largely rely on temporary¹⁹ advisors and not on a team or structure within the public administration.

77. **Human resources and capacities:** MEHE suffers from a severe lack of human resources (capacities and capabilities) in PFM functions. For instance, at the Directorate for Education, two accountants in the cadre deal with approximately 50,000 employees. However, MEHE relies on teachers to fill the gap and support the Accounting Department in various tasks. Staff concerned with PFM functions receive basic training provided by the Institute of Finance (linked to the Ministry of Finance), but this does not constitute a proper and embedded training program to develop the required PFM skills. More importantly, there is a misalignment between the skill mix requested by the civil service commission—when they advertise for a post—and the job function required. The list of job families as outlined by the commission is outdated and does not include, for instance, economists.

78. **Education Management Information Systems:** An EMIS is in place at MEHE, but it is not institutionalized and lacks policies that clearly define the roles and responsibilities of the different units (mainly EMIS and CERD) related to data collection, validation, management, and utilization. There are long delays in collection of data from schools, and the lack of coordination with the central government on school census data creates additional issues. An effective and well-functioning EMIS has four key dimensions: (1) a strong foundation such as laws, policies, structure, resources, and culture that makes data collection, management, utilization, and access possible; (2) system soundness, which ensures key processes, structures, and integration capabilities in an effective system, including an operational system from data collection to processing to utilization; (c) quality data, which establish the mechanisms required to collect, save, produce, and utilize information in an accurate, secure, and timely manner; and (d) an effective utilization in decision making by all users (policy makers, teachers, students, and parents) across the education system. MEHE needs to improve its data collection system in order to effectively monitor the quality and performance of the education system.

79. **The Directorates are increasingly relying on contractual teachers to address capacity gaps.** The Vocational Directorate, for example, employs more than 10,000 teachers hired by the hour compared to approximately 1,600 that are tenured and in the official cadre. The utilization of the time of contractual teachers does vary, however, from a few hours a week to almost a full-time schedule. If detailed data were provided per teacher, a weighted average using hours taught might reflect a smaller figure than 10,000 in terms of full-time equivalent staff. At the Directorate for Education, LL 80 billion was budgeted for contractual teachers versus LL 680 billion for tenured teachers. These figures could be misleading since tenured staff receive a sizeable amount for allowances. In both cases, the overall trend remains that the education sector and MEHE are

¹⁹ These are individuals that often accompany the tenure of the Minister.

increasingly relying on teachers paid by the hour while the number of tenured teachers is decreasing due to attrition.

Strategic Planning

80. **In December 2006, a National Education Strategy (NES) was adopted with a mission, vision, and five priorities.** These centered on the availability and quality of education and its contribution to the knowledge economy, social integration, and overall economic development. The NES included a thorough assessment of the existing baseline, outlined the key challenges, and identified programs. Performance indicators were included to track progress. The NES also addressed the weaknesses in the governance of the education sector where strategic and policy frameworks were missing and the institutional structure of MEHE deemed inadequate to successfully design and manage them.

81. **In June 2014, MEHE adopted a national plan called Reach All Children with Education in Lebanon (RACE) aimed in particular at addressing the implication of the Syrian refugee crisis.** RACE included three main components: ensuring equitable access to education, improving the quality of teaching and learning, and strengthening systems, policies, and monitoring. RACE included a detailed baseline assessment, a comprehensive program and budget, and a monitoring and evaluation mechanism to track progress.

82. **MEHE utilized the NES and RACE, to solicit donor funding, but not to guide the budget preparation process, nor were monitoring and evaluation (M&E) used to assess progress and impact.** Countries and international organization agreed to finance the various programs outlined in either the NES or RACE. The NES was also utilized by an EU project to develop in October 2014 a pilot Medium Term Expenditure Framework (MTEF) for the education strategy, which remains a draft study. On the other hand, MEHE struggled to assume a proactive role in donor coordination. It is also unclear if MEHE has or is conducting a post-implementation assessment or whether it is actually using the M&E frameworks to track progress.

83. **In sum, when it comes to budget formulation, there is a disconnect.** The budget formulation is not driven or linked to either the NES, the RACE, or the MTEF. Instead, the budget exercise remains an accounting exercise with its own drivers and parameters that are largely dictated by the Director General and the Minister.

Budget Formulation

84. **The preparatory phase:** The Director Generals (DGs) at MEHE issue directives to the Accounting Department to guide the budget preparation exercise. The DGs, based on data and information at their disposal and in coordination with the Minister, set the priorities for the upcoming year (e.g., spend LL 2 billion on teacher training) and circulate guiding directives to the Accounting Department. The process is complemented by a request for data sent to the three MEHE directorates in about February of each year.

85. **The Accounting Department compiles the expenditures sheets of the directorates.** It aligns them to the GFS 2001 classification and submits a draft to the Minister as per the national accounting law. The department requests data from the three directorates. The compilation is a transactional task that is not driven by a strategic underpinning and leads to the formulation of

MEHE's budget, which is submitted to the Minister for approval. The formulation is largely based on the general directives provided by the DG or the Minister and the parameters defined in the previous year's budget.

86. **The head of the Accounting Department embodies the institutional memory concerning the budget cycle.** He drives the budget formulation process and as a by-product controls it, raising concerns on matters related to transfer of know-how, agenda setting, and transparency.²⁰ It is often observed that directorates fail to provide all of the data required to formulate the budget, which forces the accounting department to prepare its own estimates. This irregularity is exposed when the budget cycle goes into the implementation stage. Spending units (for example, directorates) incur expenses according to their own work plans, which may or may not be included in MEHE's budget. As a result post-execution arrangements such as conciliatory contracts are imposed on the administration to address the *fait accompli* expenses.

87. **CERD prepares its own budget.** This should in principle reflect the sector strategy, and it is submitted to the Minister for approval. Once endorsed, it is entered as a line item in MEHE's budget under "contribution to CERD" and directly transferred to the CERD upon ratification by parliament. The MEHE administration is then expected to address the implications that ensue. If, for instance, CERD's strategy called for the introduction of new course material, then MEHE is required to hire professors to deliver the new curricula.

88. **The budget of the Vocational Training (VT) Directorate is prepared—with an accounting lens—from data collected by schools, with salaries and allowances making up the bulk of it.** Over 90 percent of the VT budget is to cover salaries and allowances for the teachers and the approximately 100 staff in the administration. The remaining amount is allocated to purchase equipment and maintain basic services. In 2014 the VT Directorate completed the construction of a school in the Bekaa, and with it, the capital budget allocated in a special 1997 law was consumed. It is worth noting that the VT Directorate has jointly established 31 schools (out of a total of 133) with the support of nonprofit organizations. These parties assumed the cost of construction while the directorate allocated the human resources. In summary, the budget preparation process is an accounting exercise that starts with the amount spent the preceding year adjusted—on the margin—to account for developments.

89. **The formulation of the overall MEHE budget does not fully integrate current and capital spending.** The two items are often addressed separately and in most cases accounted for on an ad hoc basis. For example, building a school (i.e., a capital project) ensues future recurring costs (e.g., wages, maintenance, utilities). However, the costing and the future recurring and operational budget are not incorporated in the original planning. Moreover, there are cases when capital projects are agreed upon and executed by external parties (e.g., Prime Minister and CDR), and MEHE is asked to assume, unexpectedly, the cost of maintaining and operating the facility.

90. **Budget calendar and circulars:** The budget calendar starts in February when an internal memo is sent to the MEHE directorates soliciting data on their budgets; however, the absence of a ratified budget since 2005 has led concerned parties to no longer adhere to the calendar. The typical calendar is as follows:

- February: Head of accounting department sends decree to all three DFs to prepare their expenditure charts
- April: Head of Accounting compiles and prepares one coherent MEHE budget and discusses budget with the Minister
- June 1: Budget is sent to MoF (as per Article 13 of the Public Accounting Law)
- June-July: Negotiation takes place between MoF head of the Budget Department and head of the Accounting Department in MEHE
- October: The budget is approved

91. **The MoF circular sent around the middle of April does not include binding constraints.** It contains only guidelines without hard spending ceilings. The guidelines could be at the level of “reducing the operational budget.” In the circular, MoF provides an overview of the economic and fiscal conditions of the country and accordingly provides high-level recommendations to the ministries, for example not surpassing last year’s spending ratios, not increasing the number of contracted staff, and the like.

92. **The MoF guidelines are not often adhered to by MEHE, such as spending below certain ceilings or abiding by general fiscal rules.** For instance, the number of contracted professors and the use of conciliatory contracts have been on the rise. MEHE (and most ministries) secures and pays for the services of third parties and incurs various expenses prior to committing to a contract as per the budget system. Thus an ex post conciliation is required to retroactively commit and account for the expense.

93. **Most ministries, including MEHE, do not meet the June 1 deadline.** In the 2016 fiscal year, for instance, the draft MEHE budget was submitted on August 22 despite the memo issued on July 11 by the Presidency of the Council of Ministers (no. 15/2015) requesting ministries to adhere to the deadline or else MoF would have the mandate to estimate the budget of the ministry concerned. As such, the draft MEHE budget for 2016 was prepared by MoF and is exactly the same one prepared for 2015.

94. **The MoF-MEHE negotiations take place, in principle, around the month of July, and the composition of the team is not specified by law with only a reference to a representative from the ministry.** The two parties *negotiate*, but there are no sector working groups or any other structure to mechanism. From the side of MEHE, each Directorate discusses separately its budget with MoF. In the case of the VT Directorate, the negotiations are completed relatively quickly since the composition of the budget is dominated by salaries. The discussions are rarely based on a strategic undertone but are driven from the perspective of MoF by the cost-saving driver. In recent years, the MoF head of budget has asked members of the MoF Macro-Fiscal Department and the Financial Controller at MEHE from the previous year to attend the bilateral negotiations. The role of the Macro-Fiscal Department remains limited, and the trends deduced from the macro-fiscal frameworks remain nonbinding. In the case of disagreement between the two parties, the issue is raised to their respective ministers, or all the way to the Council of Ministers if need be.

95. **Syrian student refugees:** The influx of Syrian students, estimated at 70,000, has not to date greatly affected the budget preparation and execution functions. Besides a few grants that went through MEHE’s budget, most of the financing of services provided to Syrian students has not gone through MEHE budgets. The main impact on MEHE has been the utilization of facilities

and the additional workload on teachers (who are paid for the extra work from these external sources).

96. **Typically the process of a grant is as follows:** Once a grant is received and approved by a Council of Ministers decree (and aligned to specific budget line item), an account is opened under budget account 36 on behalf of the concerned ministry. The amount is then disbursed as an emergency advance and transferred to the ministry budget (against the same budget line item) or disbursed as a contribution and paid to a program (that may not be managed by MEHE).

97. **To date, most additional expenses incurred have come either from contributions to programs** (outside MEHE's budget) **or less so from MEHE's own budget**, which utilized their permanent teachers without overtime or paid overtime to contracted staff. Looking ahead, more fiscal pressure will be placed on MEHE's budget, integrating loans and grants into its own budget will be required, and thus processes and systems will have to be adjusted.

Budget Implementation

98. **There are no cash management plans for MEHE, with minor exceptions observed at the VT Directorate.** MEHE's budget is predominantly wages and salaries, and to a large extent the timeline and spending patterns are known. In addition there are no capacities nor a structure or rules to design and execute proper cash plans. The DG of Education provides directives to the Accounting Department to execute payments, largely guided by the cyclical (and recurring) commitments. As for the VT Directorate, a spending table—the closest to a cash plan—is shared with MoF in January.

99. **One source causing unexpected fluctuations in the cyclical payments is related to the contribution to free private schools.** MEHE does not have a fixed schedule on when to pay those schools, because it depends on the six independent evaluators and regulators to approve and clear the payment. MEHE is an intermediary entity between the regulators and the schools, but the transfers are part of its budget.

100. **Another source of uncertainty to the spending patterns is related to executing capital expenditures.** It may be the case that a decision to build a school is made outside MEHE (e.g., by the Prime Minister or the Minister). This may be known to the MEHE administration, but in most cases, requests for payments from MoF to build these schools are not planned in advance. An associated factor is the weak budget planning for capital projects where future current expenditures (e.g., wages for staff to be hired, maintenance) are not integrated into the budget plans. Thus, when a capital project is completed, operational costs end up being financed from special accounts or budget reserves.

101. **In recent years and with the absence of a budget since 2005, the (unconventional) practice of treasury advances has become common and increasingly used to meet financing gaps and to fund out-of-budget activities.** Together with poor planning, this practice has led to large disparities between planned budgets and closed budgets.

102. **Besides multiyear capital projects or earmarked current expenses, undisbursed amounts are not carried forward.** It is common, however, to shift an amount from one line to another as long as it is within the same family (e.g., salaries).

103. **One positive development introduced by MoF in 2014 is the integration of loans and grants into the MEHE budget via MoF.** However, this has led to major delays in implementation due to two main factors: new MoF procedures and the requirement to align new funds to a 2005 budget line item. If there is no direct linkage with the 2005 budget, MEHE is asked to calibrate and identify a *strategic* link in order to include the new loan or in its draft budget. Any creation of a new line item within the budget needs the approval of the Council of Ministers.

104. **The Management Information System is managed by MoF and MEHE, which are among the line ministries with full access to its four stages:** (1) commitment, (2) execution, (3) liquidation, and (4) payment. The VB.6 SQL system dates from 2000.

105. **In sum:** If we take into account the absence of a ratified budget since 2005, the common utilization of treasury and budget advances, the frequent budget transfers from one line item to another, the cases of unexpected payments for an unplanned capital project, and add to these a crisis of the magnitude of the Syrian refugee influx—it is imaginable to expect a maze that goes beyond the boundaries of any budget system and a nontransparent framework that is understood, controlled, and managed by a select few.

Audit, Monitoring, and Evaluation

106. **With an absence of a strategic plan and indicators to monitor performance, no ex post evaluation and assessment is expected or is carried out.** The budget preparation process starts from scratch, with no linkage to the past. The M&E function does not exist, nor is there a cadre in MEHE entrusted with this task. The observed function relates to capital projects that are monitored to check whether the steps are executed according to the preset plans (i.e., a transactional audit). There are no post-completion impact or strategic assessments. In addition, the reporting and dissemination function is weak and absent in many areas, making it more difficult to evaluate and assess performance.

107. **The audit function is conducted by the Audit Diwan and the Central Inspection Body, in addition to the internal administrative oversight.** There is no internal audit function at MEHE or anywhere else in the Lebanese administration. The Diwan carries out ex ante and ex post audits. For the ex-ante audit, commitment contracts (e.g., procurement, rental agreements, services, etc.) that are above certain ceilings are reviewed and cleared. The duration of the process can vary from two weeks to two months. Ex post audits cover executed contracts with the aim of ensuring adherence to the legal framework and the terms of the contract.

108. **The Diwan prepares an annual report and submits it to Parliament and to the administration.** The reports identify administrative irregularities and include general recommendations, but in recent years the reports have not been *controversial*, and no major action was taken by Parliament to effectively enforce or correct major irregularities.

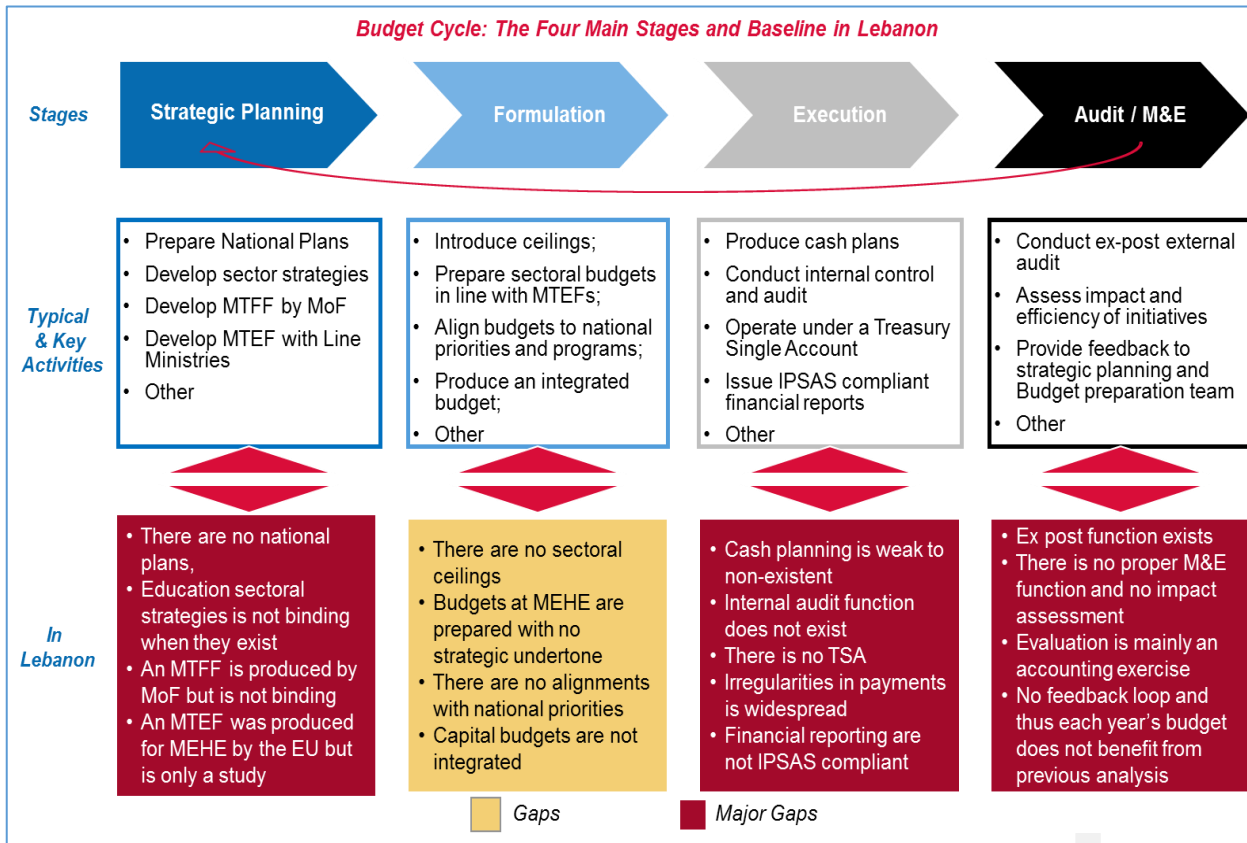
109. **The Diwan possesses an administrative judicial arm,** and it can also impose fines or transfer the file with the infraction to the state prosecutor general. The enforcement mandate is sometime exercised but remains limited to low-level administrative irregularities.

110. **The Central Inspection Body does not interfere with the transaction during operations, but reviews whether it was executed properly according to the technical and administrative terms.** The Body also prepares annual reports and submits them to Parliament and

to the executive branch. It can impose fines and/or transfer the file to either the Diwan or the State Prosecutor General.

111. **In sum, the recommendations provided by either the Diwan or the Central Inspection Body are not taken into account in the preparation of future budgets.** Irregularities identified in the external audit reports are administrative in nature, and the more strategic recommendations are often overlooked, often with exceptional circumstances being cited.

Figure 67. Budget Typical Cycle and the Situation in Lebanon



In Lebanon, ... there are breakdowns across the budget cycle with major gaps observed both at the strategic planning and the execution of the budget

Conclusion

112. The public financial management in education lacks a structured framework to handle a system that is continuously facing internal and external shocks in terms of (a) strategic planning and budgeting, (b) institutional capacity and human resources, and (c) process monitoring and auditing.

113. Fund allocation and distribution is not evenly distributed, with some schools having greater share than small schools. Spending money at the school level is a lengthy and bureaucratic process.

Policy Recommendations

114. **Based on the analysis of available multilevel data a few policy recommendations are proposed.** The report tackled and addressed issues of quantity, quality, equality, and efficiency. The government needs to continue to implement a series of measures to make expenditures count. Such measures range from allocating the budget, coordination across the different agencies, public financial management and EMIS, engaging private parties, and accountability to expedite budget execution and ensure equity and returns on investment.

Enhancing Education Efficiencies

- a. **Improving budget execution to ensure that allocated resources are effectively utilized in a timely manner, catering to the needs of schools.** Improving budget execution could start with a review of all relevant administrative actions. Doing so would identify where efficiency gains can be made through simplifying and streamlining procedures while also ensuring transparency and accountability. A longer-term agenda would include considerable investments in strengthening departments' key management capacities, including planning and procurement. The agenda could also introduce internal management systems and practices that improve coordination across units and that clarify accountability of those responsible for specific aspects of program and project implementation. Introducing explicit mechanisms would ensure more effective coordination of MEHE, CERD, other government agencies, and schools. Improving EMIS would also be a good step in this direction, as well as ensuring that the data collected are accurate, timely, and reliable, as well as linked to other information systems such as finance, human resources, learning, and procurement. Activities similar to this PER could benefit from quality of data and increase the thoroughness of the exercise.
- b. **Increasing allocation to innovations, curriculum, teaching, and learning.** Currently allocation is focused on salaries, allowances, rent, travel, and maintenance. A minor share of government expenditure is allocated for soft recurring costs. Tackling issues related to low student teacher ratios, for example, could free up a significant part of the budget and shift it to these activities.
- c. **Allocating resources including teachers in a manner that is more responsive to school-level needs and that corresponds to standards and goals.** The report illustrates the importance of addressing school resources shortages. The report also shows that it is important to provide adequate teaching and learning resources and an adequate number of qualified teachers. While there is an oversupply of teachers, the problem is primarily in their distribution, quality, and role in enhancing student performance. Proper incentives should be created to allocate teachers to more hard-to-staff and low-performing schools. Lack of incentives result in the least qualified staff serving the most disadvantaged areas, which exacerbates the inequity in teaching and learning. A combination of monetary and nonmonetary incentives such as promotion opportunities, bonuses, scholarships, loans, and food and travel benefits would go a long way in attracting teachers to disadvantaged areas.
- d. **Making interventions to improve equity in the country, especially to targeting more efforts to provide access and quality education for disadvantaged groups.** There needs to be more representation of the poor in secondary schools and higher education and linkage of female students to labor force opportunities to improve their participation in the

economy. Offering free or subsidized vocational training to skilled females so as to improve their chances of procuring employment after completion of their studies is extremely pertinent for Lebanon's economy. The government needs to ensure proper alignment between tertiary programs and job market. Reducing regional disparities in education performance is also of high importance and could benefit from teacher allocation, school resources, public-private partnerships, and better targeting.

- e. **Enhancing public-private partnerships within a coherent policy and regulatory framework.** Examples can be drawn from other countries such as Belgium, Chile, Colombia, the Netherlands, and the Philippines that have successfully been able to implement this model to provide subsidized private schooling to students.
- f. **Tracking and monitoring allocation and spending need to be a regular activity.** Institutionalizing annual reviews of public expenditures and key programs and conducting periodic public expenditure tracking surveys (PETS) and school-level surveys would be worthwhile initiatives. While Lebanon is currently investing in international student assessment examinations such as TIMSS to monitor learning outcomes, participation in the PETSs will enhance transparency and help ensure that education expenditures reach the intended beneficiaries. International experience with PETS has shown a tremendous positive impact on outcomes.
- g. **Given the significant role that private education plays, strengthening equity and quality of education by better government engagement of private providers.** This includes strengthening oversight and inspection, disseminating information about school quality, and targeting of subsidies. A stronger regulatory framework could foster improved education quality and equity in Lebanon.
- h. **Creating financing options to enable the poor to benefit from the private sector quality.** While the free-private one is a good approach it needs to be more targeted, and continuity needs to be linked with performance. More options need to be pursued, and lessons from countries such as Chile could be applicable to expand the current system.
- i. **Improving targeting of public resources to the poorest households.** International approaches range from cash transfer schemes (that are part of larger social development programs including other sectors) to subsidizing private schools in exchange for removing tuition fee requirements.
- j. **Proposing enhancements to improve accountability for grants provided to schools and parent committees.** Proposed accountability and internal control improvements include: (a) Introducing a simple fund accountability module, to cover both Committees funds, to the existing Schools Information Management System (SIMS) in which schools will access information of funds credited to them and record expenditures. MEHE will access consolidated information enabling periodic monitoring of advances and their accountability; (b) MEHE will enter memoranda of understanding (MOU) with commercial banks holding school bank accounts requiring the banks to submit periodic account balance summaries to MEHE for purposes of monitoring fund utilization and reconciliation; (c) Regional Education Offices will be mandated to more closely monitor the performance of schools including monitoring accountability for funds; (d) The internal audit function proposed to be established at MEHE will include periodic visits to schools to monitor accountability for funds in its mandate (World Bank 2016).

Improving Public Finance Management

A select number of recommendations are proposed grouped under the five dimensions (institutional, strategic planning, budget formulation and implementation, and M&E). The list includes a mix of practical steps that may be introduced at the administrative level and more complex but required reforms that are needed to introduce a well-functioning PFM system that relies less on irregular practices and more on a structured, modern, and efficient system.

Institutional and Capacities

- Review MEHE functions (focus on PFM) and design a modern organization structure
- Set up a strategic planning and performance management (SPPM) taskforce (or unit)
- Revise the accounting department, creating a proper and staffed budget preparation unit
- Set up a PFM working group between CERD and MEHE
- Create a special taskforce to manage the Syrian crisis and ensure donor coordination
- Identify resource gaps in PFM functions and develop job profiles
- Secure civil service approval and recruit the PFM positions
- Develop a training plan and roll it out, targeting staff working on PFM areas

Strategic Planning

- Develop sector strategic plans every five years (by MEHE staff)
- Revise and adopt the medium-term expenditure framework (MTEF) prepared with an EU project
- Develop regularly medium-term expenditure frameworks in coordination with MoF
- Embed the pillars of the strategic plan and the MTEF in the formulation process (by decree)

Budget Formulation

- Prepare the budget in coordination with the Strategic Planning Department and take into account ex post evaluation reports (prepared by the performance management team)
- Initiate the preparation process earlier and introduce a proper process with clear roles
- Enforce, by decree, adherence to spending ceilings, calendar deadlines, etc.
- Set up formally a sector group with MoF to manage the budget negotiation process
- Introduce a step (CERD-MEHE Working Group meeting) prior to budget formulation
- Integrate capital and current expenditures in MEHE's budget

Budget Implementation

- Prepare cash management plans on a monthly basis and share them with MoF
- Stop the utilization of budget advances
- Enforce hard rules to limit gradually the shifting in budget lines to cover pending payments
- Reengineer internal execution processes and automate
- Introduce and monitor hard rules on the use of conciliatory contracts

Audit and M&E

- Compile detailed budgets and publish them on MEHE’s website
- Prepare a roadmap with the aim of introducing an internal audit function at MEHE
- Introduce the function (or a taskforce) of ex post evaluation of capital projects and initiatives
- Produce regular reports to the DGs and the proposed strategic planning unit/taskforce

Prioritization of the recommendations: The recommendations across the five dimensions are mapped by benefit and level of implementation complexity and categorized as either MEHE-specific or relevant to the whole public administration. Implementation complexity takes into account the cost (e.g., resources required), technical complexity, and risk factors associated with implementing the initiative. The impact expected from the initiative covers tangible and intangible benefits. An example of an intangible benefit is enhanced staff capacity, while a tangible benefit may include a strategic plan developed. The score is estimated using a simple four-grade scale: low, medium (–), medium (+), and high. This simple and straightforward approach allows us to prioritize the various initiatives for reform along four “baskets”:

- The *quick wins* or the low-hanging fruits where impact is expected to be medium (+) to high and implementation is relatively easy, that is, low to medium (–).
- The *structurally significant* initiatives that are important to roll out due to their medium (+) to high impact, but they are difficult or costly to implement.
- The *opportunistic* initiatives that are good to introduce when the opportunity arises. They will generate a low impact, but they are also easy to implement.
- The *last group* are initiatives that could be introduced in the later stages of reform.

Figure 68. Prioritization of Recommendations

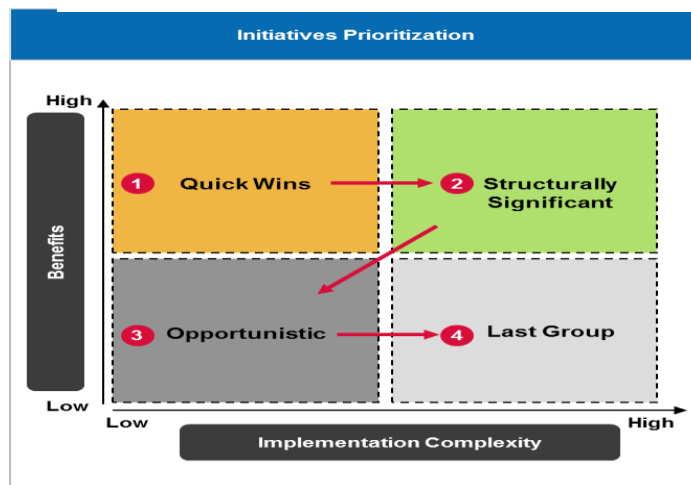


Table 16. Proposed Initiatives by Dimensions: Benefit, Complexity, and Prioritization

#	Initiative	Benefits	Complexity	Basket	Owner
Institutional and Capacities					
1	Review MEHE functions (focus on PFM) and design a modern organization structure	Medium (-)	High	Last Group	Minister Team
2	Set up a strategic planning and performance management (SPPM) taskforce or unit	High	Medium (+)	Significant	Director Generals
3	Revise the accounting department creating a proper and staffed budget preparation unit	High	Medium (+)	Significant	Director Generals
4	Set up a PFM working group between CERD and MEHE	Medium (+)	Low	Quick-win	Minister
5	Create a special taskforce to manage the Syrian crisis and ensure donor coordination	Medium (+)	Low	Quick-Win	Minister
6	Identify resource gaps in PFM functions and develop job profiles	High	Low	Quick-Win	Director Generals
7	Secure civil service approval and recruit the PFM positions	High	High	Significant	Director Generals
8	Develop a training plan and roll it out targeting staff working on PFM areas	High	High	Significant	Director Generals
Strategic Planning					
9	Develop sector strategic plans every five years (by MEHE staff)	High	High	Significant	Director Generals
10	Revise and adopt the MTEF prepared by an EU project	Medium (+)	High	Significant	Director Generals
11	Develop regularly MTEF in coordination with MoF	Medium (+)	High	Significant	Director Generals
12	Embed by decree the pillars of the strategic plan and the MTEF in the formulation process	High	Low	Quick-win	Minister
Budget Formulation					
13	Prepare the budget in coordination with the Strategic Planning Department and taking into account ex post evaluation reports	High	High	Significant	Director Generals
14	Initiate the preparation process earlier and introduce a proper process with clear roles	Medium (+)	Low	Quick-win	Director Generals
15	Enforce, by decree, the adherence to spending ceilings, calendar deadlines, etc.	High	High	Significant	Minister
16	Set up formally a sector group with MoF to manage the budget negotiation process	Medium (+)	Low	Quick-win	Minister
17	Introduce a step (CERD-MEHE Working Group meeting) prior to budget formulation	Low	Low	Opportunistic	Minister
18	Integrate capital and current expenditures in MEHE's budget	High	High	Significant	Director Generals
#	Initiative	Benefits	Complexity	Basket	Owner
Budget Implementation					
19	Prepare cash management plans on a monthly basis and share them with MoF	Medium (+)	Low	Quick-win	Relevant Department
20	Stop the utilization of budget advances	Medium (-)	Medium (-)	Opportunistic	Director Generals
21	Enforce hard rules to limit gradually the shifting in budget lines	Medium (-)	Medium (+)	Last Group	Director Generals
22	Reengineer internal execution processes and automate	Medium (+)	Medium (+)	Significant	Director Generals
23	Introduce and monitor hard rules on the use of conciliatory contracts	Medium (-)	Medium (-)	Opportunistic	Director Generals
Audit and M&E					

24	Compile detailed budgets and publish them on MEHE's website	Low	Low	Opportunistic	Relevant Department
25	Prepare a roadmap with the aim of introducing internal audit function at MEHE	Medium (-)	High	Last Group	Director Generals
26	Introduce the function or taskforce of ex post evaluation for capital projects	Medium (-)	High	Last Group	Minister
27	Produce regular reports to the DG and the proposed Strategic Planning unit/taskforce	Medium (+)	Low	Quick-win	Relevant Department

Table 17. Draft MEHE Budget: 2015 and 2016

Budget Chapters and Items	In Billion LL	% of Total
Chapter 1	1,573	96.5%
Civil servants' salaries	39	
Elementary teachers' salaries	533	33%
<i>O/W in the Cadre</i>	470	
<i>O/W Contractual</i>	60	
High school teachers' salaries	230	14%
<i>O/W in the Cadre</i>	212	
<i>O/W Contractual</i>	18	
Rent of schools	10	
Public school fund	43	
Support to CERD	25	
Support to Lebanese University (LU) ²¹	347	21%
Support to LU professors pension fund	35	
Contribution to private (noncommercial) schools	115	7%
Chapter 2	56.9	3.5%
Lebanese University	10	
IT infrastructure linking schools to MEHE	4	
School constructions	13.6	
Operate and maintain Harriri Hadath University Campus	20.6	
Maintenance	3.6	
Equipment	4.2	
Ongoing construction	0.9	
Total Budget	1,630	

Table 18. Mapping of Schools (Approximate Numbers)

School Category	Schools	Students	Role
Private commercial	1,500	700,000	Regulatory: license, curricula, etc.
Private-free	380	25,000	Regulatory and provide contribution
Public	1,290	240,000	Direct support

MEHE provide a contribution equal to 160 percent of minimum wage per student. The number of licenses has been 380 since the mid-1990s. These are schools run by NGOs, religious bodies, and the like.

²¹ The Directorate for Higher Education transfers funds to LU (in 2015 it was 347 billion LL) to cover current costs—salaries and staff benefits—and this transfer consumes almost 95 percent of the DG's budget.

References

- Central Administration of Statistics. 2011. Lebanon: The Labor Market in Lebanon, Statistics in Focus (SIF), issue number 1. http://www.cas.gov.lb/images/pdfs/sif/cas_labour_market_in_lebanon_sif1.pdf
- Central Administration of Statistics. 2013. Lebanon: Children in Lebanon, Statistics in Focus (SIF), issue number 4. <http://www.cas.gov.lb/images/pdfs/sif/children%20-%20english.pdf>
- OECD. 2015. *Education at a Glance 2015: OECD Indicators*. Paris: OECD Publishing. DOI: <http://dx.doi.org/10.1787/eag-2015-en>
- World Bank. 1999. Lebanon: Education. Public Expenditure Review (PER). Washington, DC: World Bank. http://imagebank.worldbank.org/servlet/WDSContentServer/IW3P/IB/2001/03/20/000094946_01030205335484/Rendered/PDF/multi0page.pdf
- World Bank. 2005. Lebanon—Public Expenditure Review: Reform Priorities for Fiscal Adjustment, Growth and Poverty Alleviation. Public Expenditure Review (PER). Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/2005/03/6725028/lebanon-public-expenditure-review-reform-priorities-fiscal-adjustment-growth-poverty-alleviation>
- World Bank. 2010. SABER Teacher Country Report: Lebanon 2010. Systems Approach for Better Education Results (SABER) Country Report. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/2010/01/18064243/saber-teacher-country-report-lebanon-2010>
- World Bank. 2013. SABER Student Assessment Country Report: Lebanon 2013. Systems Approach for Better Education Results (SABER) Country Report. Washington, DC: World Bank Group. <http://documents.worldbank.org/curated/en/2013/01/20137625/saber-student-assessment-country-report-lebanon-2013>

Annex 1: Data Sources

Data Source	Indicators
Ministry of Finance	Teacher (civil servant and contractual) salaries
CERD, MEHE	Enrollments, assessments, private school data
Household Budget Survey	Private sector data
Mount Lebanon Directorates	Enrollments, teacher deployment, workload, allowances, and infrastructure of school buildings
MEHE, CDR, other ministries	Expenditures and allowances
World Bank, OECD, UNESCO	Education trends
International Association for the Evaluation of Educational Achievement TIMSS	International assessments in math and science

Annex 2: Primary Civil Servant Teacher's Salary (as Percentage of GDP per Capita), Detailed

Table 19. Teacher's Salary as a Share of GDP per Capita (Primary Education)

Country	Teacher's Maximum Salary as a Share of per Capita GDP	Teacher's Starting Salary as a Share of per Capita GDP	Teacher's Average Salary as a Share of per Capita GDP
Turkey	156%	134%	145%
Germany	154	117	135
Portugal	208	112	160
Spain	155	110	132
Denmark	120	105	113
Mexico	208	97	153
Canada	155	92	124
Australia	131	91	111
Korea, Rep.	248	89	168
Slovenia	159	87	123
New Zealand	123	83	103
Finland	106	81	93
Chile	169	81	125
Netherlands	117	79	98
United States	126	79	102
Italy	115	78	97
Ireland	138	76	107
Japan	168	76	122
Luxembourg	136	76	106
France	131	72	102
Austria	142	72	107
Greece	136	69	103
Poland	108	63	86
Norway	74	63	68
Iceland	74	62	68
Czech Republic	72	59	65
Estonia	66	50	58
Hungary	74	46	60
Slovak Republic	64	42	53
Lebanon	134	50	82

Source: OECD, Education at a Glance 2015.

Annex 3: Secondary Civil Servant Teacher's Salary (as Percentage of GDP per Capita), Detailed

Table 20. Teacher's Salary as a Share of GDP per Capita (Secondary Education)

Country	Teacher's Maximum Salary as a Share of per Capita GDP	Teacher's Starting Salary as a Share of per Capita GDP	Teacher's Average Salary as a Share of per Capita GDP
Turkey	356%	140%	248%
Korea, Rep.	248	88	168
Germany	193	140	166
Poland	238	63	151
Slovenia	199	87	143
Lebanon	169	N/A	134
Chile	179	86	132
Japan	173	76	124
Canada	156	92	124
New Zealand	160	86	123
Austria	165	79	122
Luxembourg	153	88	120
Denmark	126	106	116
France	141	82	111
Australia	131	91	111
Ireland	140	80	110
Italy	132	85	108
Finland	123	93	108
Slovak Republic	173	42	107
Greece	136	69	103
Netherlands	99	83	91
Portugal	61	87	112
Hungary	93	50	71
Iceland	78	60	69
Czech Republic	72	59	65
Estonia	66	50	58
Norway	40	55	69

Source: OECD, Education at Glance, 2015.

Annex 3: Salary Cost per Student of Permanent Teachers

Table 21. Salary Cost of Permanent Teachers per Student (USD)

OECD	Primary	Lower Secondary	Upper Secondary
Australia	3,608	4,684	
Luxembourg	11,674	12,821	12,821
Canada	4,755	4,755	4,839
Norway	4,307	4,525	
Germany	4,047	5,047	5,573
Belgium (Fl.)	3,842	5,218	6,344
Belgium (Fr.)	3,739	5,078	6,167
Austria	3,609	5,191	5,093
Ireland	3,426	4,063	4,063
Netherlands	3,258	4,176	3,593
Spain	3,067	4,052	
Finland	3,008	4,749	
Iceland	2,985	2,970	
Korea	2,981	2,941	
Japan	2,790	3,491	
Portugal	2,777	3,516	4,366
Greece	2,720	3,515	
Italy	2,692	3,100	2,963
OECD average	2,677	3,350	3,749
Slovenia	2,392	4,661	
Poland	2,247	2,519	
Israel	1,956	2,131	2,391
France	1,735	2,374	3,643
Lebanon	1,586		3,044
Turkey	1,368	1,459	1,800
Hungary	1,229	1,252	1,287
Chile	1,181	1,095	1,124
Estonia	1,015	1,350	
Czech Republic	973	1,633	
Mexico	958	1,057	
Slovak Republic	924	1,254	1,152
United States		3,967	

Source: OECD, Education at a Glance 2015.

Annex 4: Trends in Education Spending

Table 22. Trends in Educational Recurring Spending, 2005–13 (Percentage Share)

	2005	2006	2007	2008	2009	2010	2011	2012	2013
General Directorate for Education									
General Administration									
Civil Servant Salary	48.2	61.1	52.9	0.5	51.9	50.6	48.0	76.3	50.0
Contractual Worker Salary	0.0	0.0	0.1	2.0	0.4	0.6	1.0	1.1	0.7
Various Allowances	33.0	15.4	30.6	1.6	32.0	28.2	31.9	0.6	41.0
Transportation Allowance	4.6	5.2	4.6	25.2	6.0	5.8	6.4	5.5	3.5
Rent Costs	3.3	5.2	1.4	0.0	0.4	0.4	1.0	0.5	0.4
Other recurrent	10.9	13.0	10.4	70.6	9.2	14.4	11.8	15.9	4.5
Sub-total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
General Education									
Civil Servant Salary	69.50	64.62	65.22	64.83	66.62	66.72	67.07	65.49	63.14
Contractual Worker Salary	-	-	-	-	-	2.25	9.03	7.48	9.69
Various Allowances	0.20	-	4.50	0.05	-	-	-	-	-
Transportation Allowance	6.47	5.20	5.99	5.73	5.38	6.08	6.12	3.41	4.44
Rent & Maintenance of Schools	3.61	3.28	3.05	3.38	3.46	2.69	3.49	2.00	2.45
Contributions to the Public Sector	3.37	10.98	7.78	8.55	11.51	10.91	3.41	7.86	5.47
Contributions to non-profit organizations	8.37	13.37	10.87	14.21	11.14	9.35	9.21	12.94	13.57
Other recurrent	8.47	2.55	2.60	3.25	2.00	2.00	1.68	0.83	1.23
Sub-total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Secondary Education									
Civil Servant Salary	63.8	81.2	81.3	79.2	80.0	81.6	80.5	84.0	81.3
Contractual Worker Salary	26.5	6.5	7.3	8.0	8.1	5.6	5.1	5.5	7.5
Transportation Allowance	3.3	4.2	4.7	5.0	4.5	6.3	6.6	4.9	4.8
Rent & Maintenance of Schools	3.8	4.9	3.7	4.3	5.2	3.8	5.2	3.8	4.2
Other recurrent	2.6	3.2	3.1	3.5	2.3	2.8	2.6	1.8	2.2
Sub-total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
General Directorate for Higher Education									
Civil Servant Salary	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Contractual Worker Salary	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Lebanese University Salaries	99.1	99.2	99.5	99.3	99.5	99.5	99.5	99.6	99.5
Other recurrent	0.8	0.7	0.4	0.6	0.4	0.4	0.4	0.3	0.4
Sub-total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
General Directorate for Technical and Vocational Education and Training									
Civil Servant Salary	24.7	23.6	26.4	23.6	23.1	21.0	20.0	92.3	28.2
Contractual Worker Salary	45.3	63.5	62.5	65.1	67.8	70.1	70.7	1.3	61.4
Various Allowances	3.2	3.6	3.1	4.5	3.0	3.3	4.6	0.0	4.7
Transportation Allowance	2.3	2.1	2.4	2.2	2.1	2.0	1.6	2.6	2.1
Legal Provisions and Reconciliations	19.6	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0
Other recurrent	4.9	7.1	5.6	4.6	3.9	3.6	3.1	3.7	3.6
Sub-total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: MEHE, Lebanon.

Annex 4: Simulation for Teacher Workload Policy

Table 23. Teacher Workload and Presence of Surplus Teachers in Basic Education²²

Teacher workload in basic education	Total
Total number of civil servant teachers in basic education	19,743
Total number of teaching hours needed annually	600
Total number of hours taught by civil servants	379
Difference (shortage of hours)	221
Loss of teaching hours, annually	(19,743×221) =4,363,202
Surplus of teachers, if everyone taught 600 hours	(4,363,202/600) =7,272
Teachers needed to meet teaching standards	12,471

Source: Authors' calculation using Mount Lebanon Directorate data.

²² Does not include secondary education. Based on data from Mount Lebanon only and not the whole country.

