

# THE LEBANON BRIEF

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# FINANCIAL MARKETS

## Equity Market Stock Market

	10/10/2014	03/10/2014	% Change
BLOM Stock Index*	1,174.84	1,174.41	0.04%
Average Traded Volume	175,480	2,547,329	-93.11%
Average Traded Value	1,485,073	15,591,397	-90.48%

\*22 January 1996 = 1000

### BLOM Stock Index



### Banking Sector

	Mkt	10/10/2014	03/10/2014	% Change
BLOM (GDR)	BSE	\$9.45	\$9.50	-0.53%
BLOM Listed	BSE	\$8.75	\$8.75	0.00%
BLOM (GDR)	LSE	\$9.35	\$9.40	-0.53%
Audi (GDR)	BSE	\$6.07	\$6.15	-1.30%
Audi Listed	BSE	\$6.00	\$6.00	0.00%
Audi (GDR)	LSE	\$6.00	\$6.20	-3.23%
Byblos (C)	BSE	\$1.67	\$1.63	2.45%
Byblos (GDR)	LSE	\$73.00	\$73.00	0.00%
Bank of Beirut (C)	BSE	\$18.39	\$18.39	0.00%
BLC (C)	BSE	\$1.70	\$1.70	0.00%
Fransabank (B)	OTC	\$28.00	\$28.00	0.00%
BEMO (C)	BSE	\$1.73	\$1.75	-1.14%

	Mkt	10/10/2014	03/10/2014	% Change
Banks' Preferred Shares Index *		104.91	104.78	0.12%
Audi Pref. E	BSE	\$101.50	\$101.50	0.00%
Audi Pref. F	BSE	\$100.50	\$100.50	0.00%
Audi Pref. G	BSE	\$100.50	\$100.50	0.00%
Audi Pref. H	BSE	\$100.00	\$100.00	0.00%
Byblos Preferred 08	BSE	\$101.00	\$100.70	0.30%
Byblos Preferred 09	BSE	\$100.80	\$100.50	0.30%
Bank of Beirut Pref. E	BSE	\$25.80	\$25.80	0.00%
Bank of Beirut Pref. I	BSE	\$25.75	\$25.70	0.19%
Bank of Beirut Pref. H	BSE	\$25.85	\$25.75	0.39%
BLOM Preferred 2011	BSE	\$10.20	\$10.20	0.00%
BLC Pref A	BSE	\$101.40	\$101.40	0.00%
BLC Pref B	BSE	\$100.00	\$100.00	0.00%
BLC Pref C	BSE	\$100.00	\$100.00	0.00%
Bemo Preferred 2013	BSE	\$101.20	\$101.20	0.00%

\* 25 August 2006 = 100

A cautious sentiment prevailed on the Beirut Stock Exchange (BSE) over the past week. In fact, the BLOM Stock Index (BSI) barely gained 0.04% to close at 1,174.84 points.

After last week's listing of additional Audi listed shares the average traded volume and value were significantly lower this week. The average traded volume went from 2,547,329 shares to 175,480 while the average traded value slid from \$15.59M to \$1.49M. As for the market capitalization, it slightly broadened from last week's \$9.71B to \$9.72B.

The BSI outperformed the S&P AFE40 Index that slid by 0.15% to 74.76 points and the S&P Pan Arab Composite Large Midcap Index that shed 0.11% to 162.88 points. However, the Morgan Stanley Emerging Index (MSCI) outpaced the BSI as it rose by 1.59% to 1,008.33 points.

Among Arab Bourses, no trading occurred in Muscat, Qatar, Saudi Arabia and Kuwait as the stock exchanges were shut for the Eid holiday. Tunisia was the only bourse to close in the green with a 0.47% upturn. However, Egypt ended the week with the biggest loss of 1.80% followed by a fall of 0.66% for Abu Dhabi, and a 0.31% slide for Amman stock exchange and Dubai financial market.

Back to the BSE, the banking sector contributed for around 85% of total traded value and was followed by the real estate sector with a contribution of 15%.

In the banking sector, Byblos' listed shares added 2.45% to close at \$1.67. Meanwhile, the Global Depositary Receipts of BLOM and Audi declined by 0.53% to \$9.45 and 1.30% to \$6.07, respectively. BEMO's listed shares also fell by 1.14% to close at \$1.73.

The BLOM Preferred Stock Index (BPSI) also posted a minor uptick of 0.12% to 104.91 points. The increase was driven by the 0.30% lift in the share prices of Byblos' preferred 08 and 09 shares which ended the week at \$101.00 and \$100.80, respectively. Likewise, Bank of Beirut's preferred I and H shares rose by 0.19% to \$25.75 and by 0.39% to \$25.85, respectively.

## Real Estate

	Mkt	10/10/2014	03/10/2014	% Change
Solidere (A)	BSE	\$12.05	\$12.11	-0.50%
Solidere (B)	BSE	\$11.97	\$12.00	-0.25%
Solidere (GDR)	LSE	\$11.81	\$12.00	-1.58%

On the London Stock Exchange (LSE), the Global Depository Receipts (GDRs) of Solidere, BLOM, and Audi lost a weekly 1.58%, 0.53% and 3.23% to \$11.81, \$9.35, and \$6.00, respectively.

## Manufacturing Sector

	Mkt	10/10/2014	03/10/2014	% Change
HOLCIM Liban	BSE	\$15.00	\$15.01	-0.07%
Ciments Blancs (B)	BSE	\$3.50	\$3.50	0.00%
Ciments Blancs (N)	BSE	\$2.75	\$2.75	0.00%

Solidere shares class "A" and "B" performed poorly, losing 0.50% to \$12.05 and 0.25% to \$11.97, respectively.

In the industrial sector, HOLCIM shares slid by a minor 0.07% to reach \$15.00.

## Funds

	Mkt	09/10/2014	02/10/2014	% Change
BLOM Cedars Balanced Fund Tranche "A"	-----	\$7,334.58	\$7,430.08	-1.29%
BLOM Cedars Balanced Fund Tranche "B"	-----	\$5,242.82	\$5,246.84	-0.08%
BLOM Cedars Balanced Fund Tranche "C"	-----	\$5,570.66	\$5,574.84	-0.07%
BLOM Bond Fund	-----	\$9,608.62	\$9,608.62	0.00%

Activity on the Lebanese stock exchange is likely to remain subdued as soldiers of the Lebanese army are still held hostages, as clashes are taking place in remote parts of the country and as the political deadlock is still hindering the election of a new president.

## Retail Sector

	Mkt	10/10/2014	03/10/2014	% Change
RYMCO	BSE	\$3.32	\$3.32	0.00%
ABC (New)	OTC	\$33.00	\$33.00	0.00%

## Tourism Sector

	Mkt	10/10/2014	03/10/2014	% Change
Casino Du Liban	OTC	\$380.00	\$380.00	0.00%
SGHL	OTC	\$7.00	\$7.00	0.00%

## Foreign Exchange Market

### Lebanese Forex Market

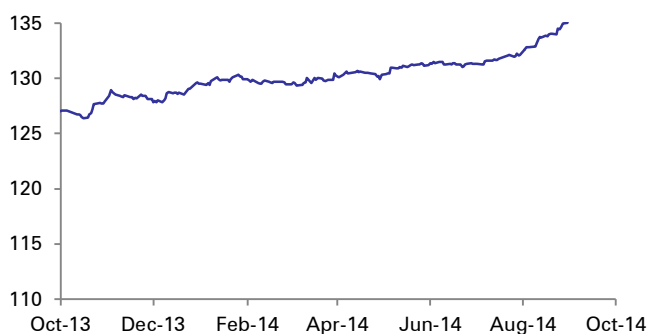
	10/10/2014	03/10/2014	% Change
Dollar / LP	1,512.00	1,512.00	0.00%
Euro / LP	1,910.00	1,903.97	0.32%
Swiss Franc / LP	1,577.54	1,575.07	0.16%
Yen / LP	13.96	13.84	0.87%
Sterling / LP	2,421.95	2,425.12	-0.13%
NEER Index**	138.73	138.88	-0.11%

\*Close of GMT 09:00+2

\*\*Nominal Effective Exchange Rate; Base Year Jan 2006=100

\*\*The unadjusted weighted average value of a country's currency relative to all major currencies being traded within a pool of currencies.

### Nominal Effective Exchange Rate (NEER)



Demand for the dollar steadied over the prior week as reflected by the Lebanese pound's peg against the dollar that remained at \$/LP 1,510-1,514 with a mid-price of \$/LP 1,512, since last week. Foreign assets (excluding gold) at the Central Bank rose by a monthly 0.97% from \$38.05B by August to \$38.42B by end-September. Meanwhile, the dollarization rate of private sector deposits stood at 66.08% in July compared to 66.13% in December 2013.

Some correction took place on the Euro during the week following 13 weeks of free fall of the European currency. Hence, the euro gained 0.32% against the dollar, ending the week at €/ \$ 1.2670.

Fearing that the global economy might be expecting more stimulus bolstered demand for a store of value. This led gold to undergo its biggest weekly rise since June, where its price went from \$1,213.30/ounce last Thursday, to \$1,223.75 this week.

By Friday October the 10th, 2014, 12:30 pm Beirut time, the dollar-pegged LP depreciated against the euro going from €/LP 1,903.97 to €/LP 1,910.00. The Nominal effective exchange Rate (NEER) dropped by 0.11% to 138.73 points, with a 7.49% gain since year-start.

## Money & Treasury Bills Market

### Money Market Rates

	09/10/2014	02/10/2014	Change bps
Overnight Interbank	2.75	2.75	0
BDL 45-day CD	3.57	3.57	0
BDL 60-day CD	3.85	3.85	0

### Treasury Yields

	09/10/2014	02/10/2014	Change bps
3-M TB yield	4.39%	4.39%	0
6-M TB yield	4.87%	4.87%	0
12-M TB yield	5.08%	5.08%	0
24-M TB coupon	5.84%	5.84%	0
36-M TB coupon	6.50%	6.50%	0
60-M TB coupon	6.74%	6.74%	0

During the week ending September 25, 2014, broad Money M3 dropped by LP 52B (\$34.49M), to reach LP 175,228B (\$116.24B). M3 growth rate reached 7.17% year-on-year and 4.57% since year start. However, M1 regressed by LP 109B (\$72.31M) due to the decrease in money in circulation by LP 104B (\$68.99M) and in demand deposits by LP 5B (\$3.32M).

Total deposits (excluding demand deposits) grew by LP 56.76B (\$37.65M), given the rise in term and saving deposits in domestic currency by LP 164B, while deposits denominated in foreign currencies lessened by \$71M. Over the above mentioned period, the broad money dollarization went down from 59.19% to 59.14%. According to the Central Bank, the overnight interbank rate dropped from 9.00% end of June 2014 to 2.75% end of July.

In the TBs auction held on the 25th of September 2014, the Ministry of Finance raised LP 241.94B (\$160.49M), through the issuance of bills maturing in 3M and 6M, and 5Y notes. The highest demand was achieved on the 5Y notes that took a share of 86.01%, while the 3M and 6M bills accounted for 4.77% and 9.22% respectively. The 3M and 6M bills yielded 4.39% and 4.87%, respectively. Meanwhile the average coupon rate for the 5Y notes stood at 6.74%. New subscriptions exceeded Maturing T-bills by LP 138.27B (\$91.72 M).

## Eurobond Market

## Eurobonds Index and Yield

	09/10/2014	02/10/2014	Change	Year to Date
BLOM Bond Index (BBI)*	108.290	108.150	0.13%	2.51%
Weighted Yield**	5.16%	5.17%	-1	14
Weighted Spread***	366	356	10	-64

\*Base Year 2000 = 100; includes US\$ sovereign bonds traded on the OTC market

\*\* The change is in basis points

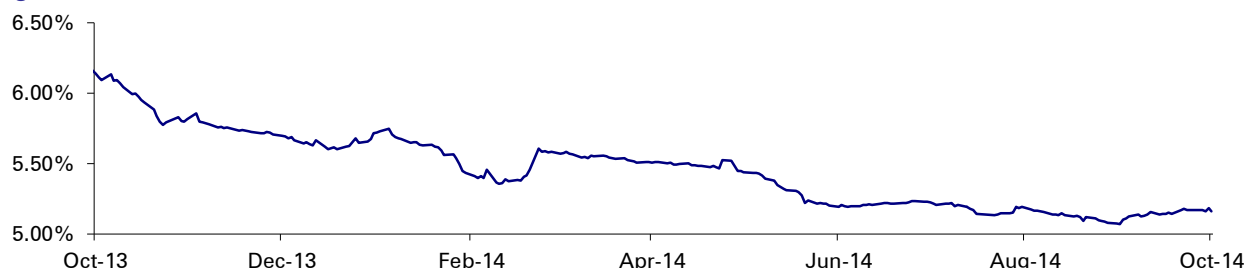
\*\*\*Against US Treasuries (in basis points)

## Eurobonds Lebanese Government

Maturity - Coupon	09/10/2014 Price*	02/10/2014 Price*	Weekly% Change	09/10/2014 Yield	02/10/2014 Yield	Weekly Change bps
2015, Aug - 8.500%	104.192	104.164	-0.03%	3.31%	3.45%	14
2016, Jan - 8.500%	106.028	106.01	-0.02%	3.63%	3.71%	8
2016, May - 11.625%	111.881	112.114	0.21%	3.86%	3.79%	-7
2017, Mar - 9.000%	111.167	111.148	-0.02%	4.16%	4.20%	4
2018, Jun - 5.150%	101.497	101.494	0.00%	4.71%	4.71%	0
2020, Mar - 6.375%	104.453	104.371	-0.08%	5.42%	5.44%	2
2021, Apr - 8.250%	114.758	114.88	0.11%	5.53%	5.51%	-2
2022, Oct - 6.100%	101.799	101.827	0.03%	5.82%	5.82%	-1
2023, Jan - 6.000%	100.805	100.676	-0.13%	5.89%	5.90%	1
2024, Dec - 7.000%	106.362	106.263	-0.09%	6.20%	6.19%	-1
2026, Nov - 6.600%	102.215	102.127	-0.09%	6.34%	6.35%	1
2027, Nov - 6.75%	103.192	102.993	-0.19%	6.40%	6.41%	2

\*Bloomberg Data

## Weighted Effective Yield of Eurobonds



Lebanon's Eurobonds market slightly improved during the week, where the BLOM Bond Index (BBI) rose by 0.13%, to settle at 108.29 points. The gauge posted a 2.51% year-to-date (y-t-d) increase, mainly attributed to higher demand on short-term maturities. However, yields on the 5Y and 10Y Lebanese Eurobonds remained at 5.14% and 6.21%, respectively.

Slowing worldwide economic growth has negatively impacted investments in emerging markets. This was mirrored by the JP Morgan emerging countries' bond index weekly performance as the gauge gained a weekly 0.54% to 678.58 bps.

In the U.S, the Fed's failure to send inflation above 2% and the possible postponement of the interest rate increase boosted demand for U.S Treasuries. This return to the safe assets' market sent the 5Y and 10Y U.S yields down by 12 bps and 10 bps to 1.58% and 2.34%, respectively. Correspondingly, the 5Y spread between the Lebanese Eurobonds and their U.S benchmark widened by 12 bps to 356 bps, while the 10Y spread broadened by 10bps to 387 bps.

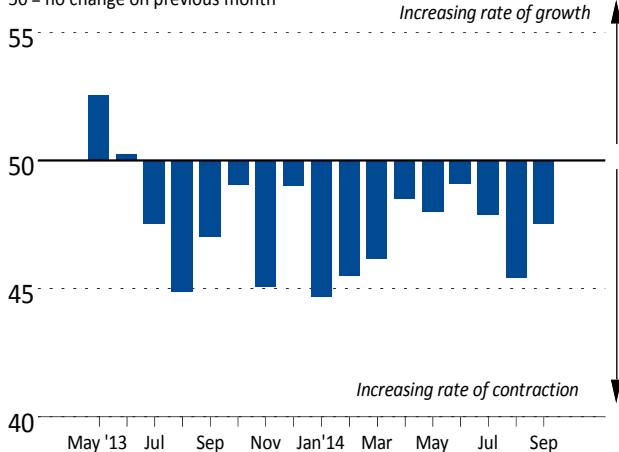
Lebanon's Credit Default Swaps for 5 years (CDS) stood at 334-364 bps, compared to last week's quote of 335-365 bps. In regional economies, the 5Y CDS quotes of Saudi Arabia and Dubai broadened from 51-57 bps and 161-171 bps to 53-58 bps and 164-174 bps, respectively. In emerging economies, the 5Y CDS of Brazil and Turkey narrowed from 175-177 bps and 205-208 bps to 154-156 bps and 193-196 bps.

## ECONOMIC AND FINANCIAL NEWS

### BLOM Lebanon PMI Historical Readings

#### BLOM Lebanon PMI

50 = no change on previous month



Source: Markit, Blominvest Bank

### BLOM Purchasing Managers' Index Stood at 47.6 in September

The BLOM Lebanon PMI inched up from 45.5 in August to 47.6 in September, implying a slowdown in the rate of contraction. September's PMI remained below the 50.0 mark, due to a hard drop in output levels at businesses and a fall in export sales.

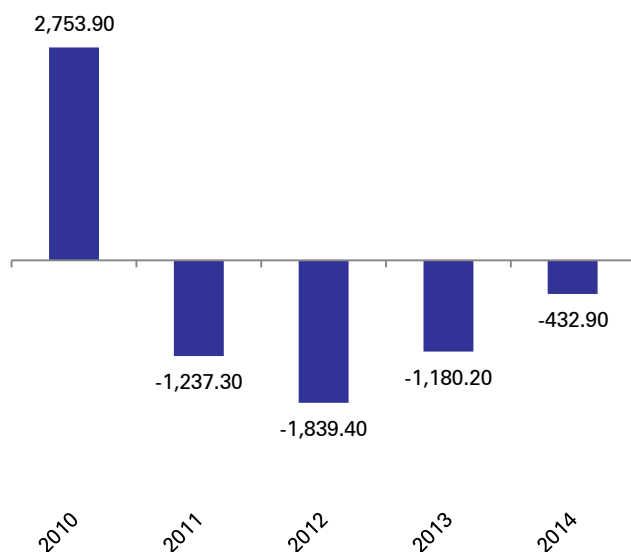
However, companies raised their stocks of purchases for the third time in the past four months and businesses added their workforce for the first time in three months. Even though private sector businesses faced higher costs, output prices kept declining in an attempt to encourage client spending.

Commenting on September's results, Dr Ali Bolbol, Economic Advisor at BLOMINVEST Bank, said:

"The Lebanese economy has yet to get a notable break, still mired in the quagmire of domestic and regional instabilities. Although September's PMI increased to 47.6, driven mainly by the containment of the ISIS-related disturbances in the east of the country and by the positive employment numbers, a sustainable economic recovery is still far from assured. A necessary condition to jolt the economy on that path is putting the internal political house in order and embarking on the crucial step of electing a president."

### Balance of Payments Up to August

(In \$M)



### Balance of Payments Deficit Narrowed by \$747.3M from August 2013

Lebanon's Balance of Payments displayed considerable improvement by August 2014, as deficit tightened by \$747.3M from the same period in 2013, to stand at \$432.9M. Net Foreign Assets (NFA) of the Lebanese Central Bank (BdL) grew \$4,271.5M by August 2014, while that of commercial banks plunged by \$4,704.4M.

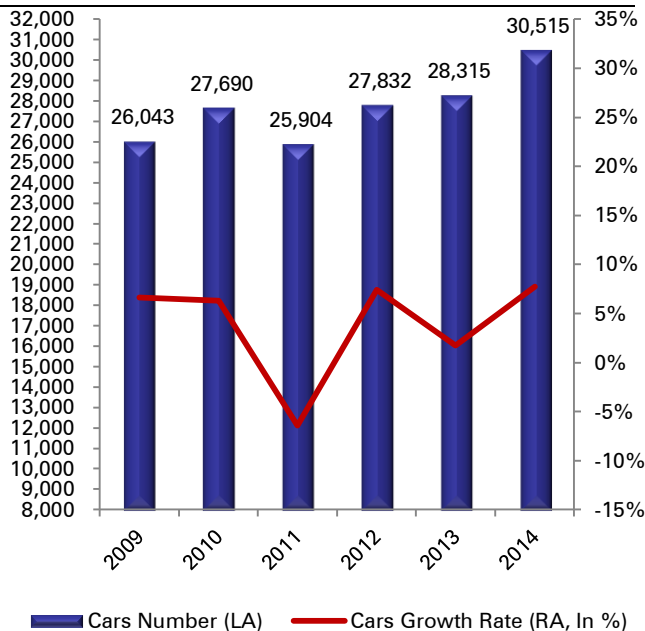
As for the month of August, deficit reached \$563.9M, up from the \$84.7M deficit recorded in July 2014. This can be partly attributed to the \$287.20M broadening of the trade deficit in August 2014 compared to August 2013, in addition to a decline in foreign direct investment due to the increased political and security instability.



Source: BdL

## Registered New and Commercial Cars increased by 7.77% by September

### Total car registration by September



Source: AIA

According to the Association of Car Importers in Lebanon (AIA), there was a 7.77% increase in the number of registered new passenger and commercial cars, reaching 30,515 vehicles by September, compared to the same period last year.

This was due to the 8.22% year-on-year (y-o-y) surge in the registration of new passenger vehicles to 28,787 in the first nine months of the year. Likewise, the number of registered commercial cars inched up by 0.82% y-o-y to 1,728.

Looking at the car sales brand breakdown, Kia topped the list with a 22.90% share of the total, followed by Hyundai (19.57%), Nissan (12.59%), Toyota (12.21%) and Renault (3.51%).

As for the top five distributors in Lebanon by September, NATCO SAL had the highest share of 21.78% of the total, followed by Century Motor Co (18.85%), RYMCO (13.10%), BUMC (12.46%), and Bassoul Heneine (7.19%).

In September alone, the number of registered cars surged by 31.24% y-o-y, mostly due to the increase in the purchase of Toyota cars, which more than tripled from September last year.



## Economic Indicator Forecasts

	2013	2014f	2015f
Real GDP Growth (%)	0.9	1.5	2
Inflation Rate (%)	2.7	1.5	3.4
Fiscal Balance (% of GDP)	-9.4	-10.2	-11.2
Current Account Balance (% of GDP)	-8.5	-8.3	-8

Source: World Bank

## The World Bank Expects Growth Rate at 1.5%

Amidst global and regional mixed economic outlooks for growth in 2014 and 2015, Lebanon's economy is expected to grow by not more than 1.5% in 2014, as shown in the Latest issue of the MENA Economic Report released by the World Bank. This is due to the escalation of the war in neighboring Syria resulting in the income of refugees. Not forgetting the fact of presidential vacuum which might further risk the country's political, security, and economic positions.

On the fiscal front, fiscal deficit is expected to broaden from 9.4% in 2013, to 10.2% in 2014, with a gross public debt of 149% of GDP.

In the external sector, current account deficit is projected to be 8.3% of GDP in 2014, same as the previous 2 years, where the balance of payments depending mostly on remittances and international aid for refugees.

Looking at the banking sector, the conserved financial sector and the high spread between domestic and international rates of return have prompted abundant inflows of deposits to Lebanese banks, resulting in solid liquidity buffers.

Globally, growth is forecasted to be almost 2.5%, while the MENA is projected to grow by around 3% this year, however with disparity between high-income and developing countries.

## CORPORATE DEVELOPMENT

### Works Launched in the Port of Tripoli and the Port of Jounieh

#### Tripoli Customs and VAT Revenues

in USD	Customs Revenues	VAT Revenues
2010	64,467,217	102,205,687
2011	42,762,403	107,081,467
2012	37,304,848	66,154,425
2013	46,319,429	56,400,302

Source: Ministry of Finance

Two years ago, a \$60M, 600 m long, 15.5m deep quay was built at the Port of Tripoli. Just recently, Businessnews reported that infrastructure works on the new quay will begin early next year. Local contractor Mouawad-Edde is set to handle the first phase of these works over a 50,000 square meter plot near the quay, which will allow for the terminal to process up to 400,000 containers annually. Phase Two of the project will allow the terminal to process 800,000 containers. Through a Build-Operate-Transfer (BOT), The UAE-based GulfTainer will handle the finance, design, construction and operation of the facility for the next 25 years.

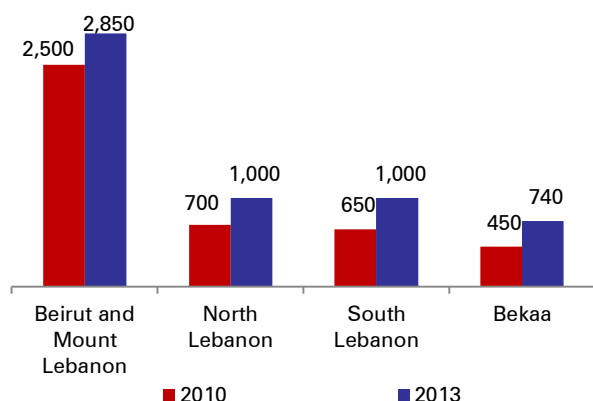
As for the Jounieh Port, it is set to be transformed from the shipping port it is today to a tourist hosting hub. The project is worth \$500,000, shall be completed in 2015 and will allow the port of Jounieh to host 600 passengers/day.

The Municipality of Jounieh is also planning to build a tourist port in Kaslik. The Project has been reported to cost \$40M and to attract charters able to transport 2,000 passengers.

## FOCUS IN BRIEF

### Syrians' Misery Burdens the Precarious Environmental State of Lebanon

Municipal Solid Waste Generation by Mohafaza



Distribution of Incremental Quantities of Municipal Solid Waste by end 2014

Mohafaza	Incremental Daily Quantity	Daily Capacity before crisis (t/d)	Increased Burdens (%)
BML	321	2950	10.9
North Lebanon	198	1100	18
Bekaa	253	670	37.7
South of Lebanon	117	940	12.4
<b>Total</b>	<b>889</b>	<b>5660</b>	<b>15.7</b>

Source: MoE

Shortly after the Syrian war began in 2011, thousands of refugees overwhelmed Syria's neighboring countries that were already struggling to look out for their own people. Lebanon was one of them, especially with its expected 20% unemployment rate<sup>1</sup> and 1% slackening economic growth<sup>2</sup>, by the end of 2014. In fact, and even though the Syrian crisis started in March 2011, the tangible impact on Lebanon was felt starting the summer of 2012. The refugees' registries reveal a huge leap from 57,335 by September 2012 to 1.14M by the end of September 2014, currently accounting for 26% of Lebanon's population.

The Syrian conflict squeezed economic growth since 2012 and heavily impacted numerous facets of Lebanon's society and economy. In a previous World Bank report, a rapid "Economic and Social Impact Assessment of the Syrian conflict on Lebanon" was prepared for the purpose of quantifying the impact on the Lebanese economy. The report assessed the losses of Lebanon's economy prompted by spillovers from conflict in Syria at \$7.5 billion, (\$1.1 billion in 2012, \$2.5 billion in 2013 and \$3.9 billion in 2014). This is equivalent to a 2.9% cut in real GDP growth for each conflict year, and entails large losses in terms of wages, profits, taxes, private consumption and investment.

However, some impacts are still not entirely felt and could emerge long after refugees' problem is solved, of which the environmental impact. Inevitably, any arrival of a huge influx of refugees would intensify pressure on the environment of the hosting country. Some of the direct environmental impacts are deforestation, water contamination and depletion, land erosion, air pollution and poorer solid waste management.

The Ministry of Environment (MoE) recently undertook an environmental assessment of the Syrian conflict's impact on Lebanon to quantify the level of damage and the reforms needed to respond to the upcoming crisis. Under the title of "Lebanon Environmental Assessment of the Syrian Conflict & Priority Interventions", a measurement was conducted between May and July 2014 using 2010 or 2011 as baseline years to assess the environmental situation before the Syrian crisis. The report was prepared by the MoE and supported by the European Union (EU) and the United Nations Development Programme (UNDP) and only took into account the environmental impact of the Syrian turmoil in 2014<sup>3</sup>. The

<sup>1</sup> According to the World Bank

<sup>2</sup> According to the International Monetary Fund (IMF)

<sup>3</sup> The assessment does not account for the cumulative impacts since the start of the conflict

report further expects the influx of refugees to reach 1.84M by the end of 2014, based on current trends and considering the Palestinian refugees from Syria and the Lebanese returnees as well.

Besides environmental assessment, the report proposed several interventions complementing “Lebanon Roadmap of Priority Interventions for Stabilization from the Syrian Conflict”<sup>4</sup> report. Below is a summary of the report’s main findings on 4 major scales: solid waste, water and wastewater, air pollution, and land-use and ecosystems.

### **The Increase of Solid Waste Hinders the “Reduce, Reuse and Recycle” Concept**

Hosting around 37% of the region’s Syrian refugees, Lebanon saw levels of its Municipal Solid Waste (MSW) hiking hand in hand with municipal spending, pollution of water and deteriorating health conditions.

As the growth in MSW is being managed with the current infrastructure facilities, Lebanon’s municipalities almost increased their spending, from national treasury<sup>5</sup>, by 11% during 2011-2012 and 40% during 2012-2013. Worth mentioning that the additional cost to manage the generated MSW is estimated to reach \$24.0M per year (M/y) in 2014. This is explained by the Syrian refugees’ incremental daily quantity of MSW that is expected to touch the 324,568 tons per year (t/y) by the end of 2014, almost constituting 15.7% of total MSW generated by the Lebanese citizens prior to the crisis.

However, only 48% of MSW is treated by municipalities, while the remaining 52% of solid waste is left in existing open dumps. This enhances possibilities of land and soil contamination with Mount Lebanon standing as the region to suffer the most from MSW’s negligence, followed by Zahleh, Baalbeck and Akkar.

Furthermore, the mismanagement of incremental levels of MSW threatens Lebanon’s surface and ground water as well as land and soil. Risk of polluting the water is constantly rising along with the mounting amounts of solid waste being left in dumps. Srar in the North, Machghara in the Bekaa, Qana in the South are selected sites threatened by surface water pollution. Groundwater contamination is highly expected to be present in Berkayel (North of Lebanon), Taalbaya (Bekaa) and Kfartibnit (South).

MSW’s actual condition severely jeopardizes the surrounding environment’s quality which is a critical condition for human’s persistence and healthy existence. In fact, the quantity of infectious waste, generated from health care waste, is estimated to show a 420 t/y increase by the end of 2014, noting that 18% of the total is deposited without any treatment. Moreover, mismanaged dumpsites enhance risks of breeding insects carrying vector-borne diseases such as eye irritation, tuberculosis, diarrhea etc...

The assessment suggested several interventions to reduce the negative environmental impact of the increasing quantities of solid waste. Those suggestions amounted for \$131.1M with Operation and Maintenance costs touching \$57.6M per year (M/y). Some of the short term actions included the reduction of food items’ packaging, the collection and treatment of health care waste and the implementation of recycling activities in areas where refugees are present. On the medium term, the open and uncontrollable MSW dumps should be closed and new landfilling facilities need to be established. According to the report, an appropriate infrastructure should be built in order to properly manage solid waste generation.

### **Water and Waste Water Management Reach a Critical Standing in 2014**

The increasing Syrian influx over the past three years is placing further strains on Lebanon’s water resources. Water demand is expected to surge around 43-70 Million Cubic Meter (MCM) by the end of 2014, an average of 8-12% increase. Different regions started to show drops between 1 and 20 meters in groundwater levels of several wells. Bekaa is the most overstressed region on the increase of national water demand along with other governorates (the North, Beirut, Mount Lebanon and the South). Also, poor hygiene and sanitation conditions deteriorated water quality as revealed by the increase of diarrheal and communicable diseases.

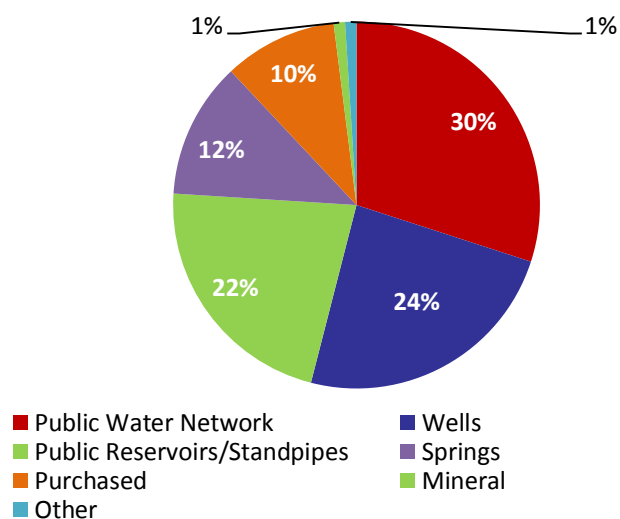
<sup>4</sup> Report prepared by the Lebanese Government with the support of the World Bank and the United Nations

<sup>5</sup> The municipalities have a weak local revenue base leading them to depend on treasuries’ transfers to cover their financial needs

Waste Water (WW) management is another issue to address as levels of WW are getting higher along with the increasing number of displaced Syrians. The report measured the rise in WW between 34 MCM and 56 MCM with Bekaa topping the list of regions in terms of highest additional WW.

A worsening pollution is, once again, the main repercussion of refugees discharging their WW. It is expected that incremental pollution will hover around 40,000 tons of BOD<sub>5</sub><sup>6</sup> per year (or 34% national increase in BOD<sub>5</sub> level) mainly concentrated in Baalbeck, Akkar, Zahleh and Baabda. Likewise, the untreated WW that causes oxygen depletion will contaminate agricultural crops, fish and wildlife populations.

#### Sources of water used by Syrian refugees



Source: MoE

Later on, the report discussed the potential measures to mitigate the Syrian turmoil negative impacts on water and WW management in Lebanon. Yet, it did not provide an exact figure concerning total costs but a preliminary one (\$1,287.3M) as costs of the majority of projects are to be determined. For one, groundwater usage should be controlled and an emergency action plan should be developed to hamper scarcity and poor management. Second, raising awareness on water management and conservation besides improving infrastructure storage, transmission and distribution systems are also schemes to be considered. Water quality and sludge disposal, implementing wastewater collection and conducting infrastructure projects remain vital.

#### Poor Air Quality Worsen Health Conditions

Similarly, air pollution is one of the environmental repercussions of the Syrian exodus to Lebanon. Several sectors reside behind the worsening of air quality such as residential heating, open burning of solid waste, electricity production. On-road transport is also another source of air pollution following the 5% increase in traffic on the main national axes especially in Beirut where chronic air pollution already exists.

#### Incremental Quantities of Air Pollutants Emissions in 2014 Compared to 2010

	CO	NOx	SO2	PM10	PM2.5
<b>Incremental Quantities of Air Pollutants in 2014 compared to 2010 (in tons)</b>	100,346	15,317	2,222	1,221	1,077

<sup>6</sup> Biochemical Oxygen Demand in Water Bodies: it measures the amount of oxygen required or consumed for the microbiological decomposition (oxidation) of organic material in water

**Percent Increase in 2014 compared to 2010  
(in %)**

18      20      4      11      13

Source: MoE

The report considered that the Syrian conflict will enhance the emission of air pollutants up to 20% in 2014 and several actions could be undertaken (worth \$1,986.8M with Operation and Maintenance costs around \$139M/y). Solutions to improve the transportation system were proposed to be initiated over the short and medium term such as the implementation of a Bus Rapid Transit (BRT) and organized mass transport systems in cities. The worsening air quality also implies using bio-energy for residential heating, decreasing the emissions of energy production (private generators), increasing access to sustainable energy, strengthening the electricity network etc...

## Land Use and Ecosystems

Lastly, the report discusses the impact of the Syrian conflict on urban densification, rental and construction sectors as well as the outcome of Informal Tented Settlement (ITS) on land use and agriculture.

Lebanon has seen a quick urban densification since the Syrian crisis forced citizens to relocate. As a result, population density in Lebanon widened 37% to 520 persons/km<sup>2</sup>. The country is now standing at the 16<sup>th</sup> rank in terms of world highest population density, up from the 20<sup>th</sup> rank before the war in Syria. However, such urban densification implies higher quantities of solid waste, further water problems, proliferating noise pollution etc...

The influx of Syrian refugees boosted both rental and construction sectors. The report estimated the total amount of rental transactions made by Syrian refugees to hit the \$34.0M per month. As lodging activity boosted up, Lebanese residents hurried to initiate new construction projects or finalize unfinished ones randomly.

Despite being an asylum for Syrian refugees, ITS accommodations are behind considerable problems on both the economic and environmental fronts. Only 15% of refugees are benefiting from ITSs but their number is expected to increase especially with more evictions due to unpaid rent. Bekaa is the region with the highest concentration of ITSs (712 ITS) followed by Akkar with 300 ITS. Since the majority of ITSs are located near agricultural lands, any growth in those settlements would threaten agricultural production.

The negative impact of Syrian refugees outspreads to forest resources, yet to a lesser extent. In border areas, the displaced Syrians saw their demand for fuel and firewood rising as they were trying to look for alternative energy sources. Accordingly, illegal chopping of forest trees witnessed a considerable rise mainly in the North of Lebanon.

To reduce the repercussions caused by refugees on land use and ecosystems in Lebanon, the report presented a series of potential measures costing around \$16.0M with Operation and Maintenance costs hitting the \$78.5M/y. These approaches include improving environmental planning at local level, supporting municipalities in urban planning and preventing ITSs encroachment on environmentally sensitive areas, agricultural and flood prone areas. Enforcing forest laws and regulations (Law 85/1991, Law 558/1996) is also considered a backbone in the protection of forest resources. Specific attention should also be given to ensure alternative sources of energy before each winter season.

To sum up, refugee crisis is not going to disappear as the environment will remain at risk as long as no robust measures are implemented. Refugees' concentrated demand for natural and land resources will only aggravate the situation as their number goes up. Even though it is difficult to scale the problem of environmental degradation caused by refugees, the MoE managed to offer an assessment providing remedies to the frail environment situation via intervention strategies and actions. However, and besides enduring shelters to refugees in time of need, the most important role that the Lebanese government should play is to act as mediator between addressing human needs and the welfare of the environment.







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