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Lebanon's Economic Crisis by Sector: Challenges and Opportunities in Manufacturing

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This brief examines the impact of the ongoing crisis in Lebanon on the manufacturing sector, based on a literature review, insights from a roundtable of experts, and other secondary data sources on the history and the recent state of the manufacturing sector. It starts with a background on the ongoing economic crisis, the history and current status of manufacturing in Lebanon, and the experience of manufacturers in other countries in dealing with similar market issues. The brief then summarizes the many challenges facing industrialists, particularly those related to energy, finance, and regulations, among others. In addition, the authors highlight some advantages tied to the current crisis, such as reduced labor cost. Finally, recommendations inspired by the roundtable discussions, modern trends, and technology advances are offered as possible solutions.

Introduction

The ongoing Lebanese crisis has been described by many experts as a ‘perfect storm,’ as it affects both the financial sector (a run on the banks, quasi-capital control, and a low recovery value on deposits) and the economy as a whole (significant drop in GDP and challenges faced in all economic sectors). The October 2019 social protest movement that some blame for the crisis, the COVID19 pandemic, and the catastrophic explosion at the Beirut port all led to compounding the suffering of the Lebanese people and the near-collapse of the economy.

All the sectors of the economy suffered from the decline in consumer purchasing power, operational difficulties tied to commuting and transport, and the need to rely on full cash financing in the absence of bank credit lines. Parts of the services sector, such as some hospitality and healthcare establishments, managed to achieve a modest recovery with the removal of restrictions tied to COVID19 and the return of seasonal visits by Lebanese ex-pats and tourists.

Other sectors dealing with tangible commodities, such as agriculture and manufacturing, continue to suffer from high operating costs and limited finances, but are attempting to compensate by trying to grow exports and benefit from increased local demand, as imported goods became too expensive for most of the population. Heavily reliant on financing, especially for importing raw material, the manufacturing sector continues to suffer from the lack of credit facilities, which combined with high energy prices, seems to be the major challenge at present.

One advantage for manufacturing, in addition to the increase in local demand, is the reduced labor cost, as the equivalent value of wages in foreign currency are still below their pre-crisis levels. Can these advantages help manufacturing in Lebanon survive the crisis and even advance further? The evidence from the literature on the response of other countries to similar crises is not conclusive. Moreover, the absence of a government plan that can support manufacturers further undermines the chances of success for Lebanese industrialists.

Given these unique challenges and opportunities faced by manufacturers in the current crisis, the Lebanese Center for Policy Studies (LCPS) invited a panel of experts that included manufacturers, academics, economists, and representatives of concerned international and national organizations to discuss the issue and offer their views.

These experts identified the challenges faced by the manufacturing sector, emphasizing common issues such as the high energy cost. They also agreed that there are potential opportunities for the sector, which needs a minimum of government support to materialize. These conclusions are in-line with recommendations recently made by the Association of Lebanese Industrialists (ALI) in a detailed policy agenda.¹

¹ ALI, 2022. How The Industrial Sector Can Save Lebanon. <https://ali.org.lb/assets/uploads/2022/06/Policy-Agenda-2022.pdf>

This brief addresses the challenges and opportunities faced by industrialists in Lebanon under the current crisis. The following section presents some background on the ongoing economic crisis and the manufacturing sector in Lebanon, as well as lessons from other countries, which have suffered such shocks. Next, specific challenges and opportunities are presented in detail. In conclusion, we offer a set of concrete policy recommendations, which were inspired, in part, by the roundtable discussions.

Background

We start this section by providing a brief account of the ongoing financial and economic crisis hitting Lebanon. As a personal perspective of the authors of this paper, the ongoing Lebanese crisis can be attributed to the high corruption rooted in the ruling political parties and a financial sector (including the Lebanon's central bank - BDL) which is highly amenable to these parties, if not deemed an integral part of them. Each political party has found its way to public money through various governmental institutions or shady business dealings with the government. When the ruling regime failed to extract more money from external support, it utilized its financial arm to take over Lebanese bank deposits through practices which were originally called 'financial engineering' by BDL,² and ended-up being called 'Ponzi finance' by the World Bank in one of its recent reports.³

² See, for example, <https://www.bdl.gov.lb/downloads/download/210/en>

³ World Bank. 2022. Lebanon Public Finance Review - Ponzi Finance.

⁴ Honohan, P., Mazarei, A. (2020). Lebanon's monetary meltdown tests the limits of central banking. Peterson Institute for International Economics (No. PB20-12).

In other words, the financial engineering, starting around 2016, offered Lebanese banks high interests (around 18%) for lending BDL funds that mostly came from private deposits. This led the banks to attract more depositors by equally high interest rates (reaching 10%).⁴ BDL 'lent' the funds to governments formed by the ruling parties to finance corruption schemes, whether in the high salaries of the inflated employees' body, expenditures on the dysfunctional energy sector, or in continuing to fund archaic institutions that are inherited from the civil war era. This vicious lending cycle continued for around five years, crippling all economic sectors that could not compete in attracting investments with the high interest offered by the banks, and

burning tens of billions dollars of private money deposited in banks. The dubious lending scheme collapsed with a run on the banks that coincided with the eruption of the protest movement in October 2019.

The Lebanese crisis was compounded by local and international events. First, the COVID19 pandemic started in February 2020 with the government rushing to pre-mature lock-downs that added pressure on most economic sectors, including industrialist, who were forced to shut down their plants. Then, in August 2020, the Beirut port disaster took place, which displaced many people and businesses, and led to a wave of emigration out of the country. More recently, the war in Ukraine, starting in February 2022, disrupted the regional supply chains and led to a significant increase in the cost of imported raw material.

Some of the more quantitative indicators of the Lebanese crisis are the high depreciation of the local currency, with the exchange rate continuing to steadily increase from around 1,500 LBP/USD in October 2019 to around 80,000 LBP/USD in February 2023, with around a 25% increase in February 2023 only. The continuous fluctuation of the exchange rate, while maintaining an exponentially compounded upward trend (Figure 1), creates challenges to local businesses, including manufactures in areas such as maintaining customer demand, pricing, and staff retention. The corresponding inflation rates have been estimated by the World Bank at 150% percent in 2021 and 218% in the first half of 2022. Another alarming indicator is the negative growth in GDP, with estimates of total drop in 2020 reaching 20% with respect to 2016, and a partial recovery in 2021, while continuing to be at 5% below 2016.⁵

⁵ World Bank. Lebanon Economic Monitor, Fall 2022: Time for an Equitable Banking Resolution.

Figure 1
LBP/USD Exchange Rate



Source <https://lirarate.org/>

Next, we present some history and facts on manufacturing in Lebanon. The start was with the silk industry with more than 200 factories operating in the country before 1924 and generating the major local source of income. After 1924, the popularity of silk declined with the abundance of substitute material. However, the global economic depression of 1929 allowed the Lebanese industrialists to up their game and acquire heavy machinery at low cost, which then proved very profitable during the Second World War, with the partitioning of the regional market and the absence of competition. The spinning, weaving, beer brewing, and canning industries flourished during the war years. Unfortunately, the newly founded Lebanese state in the late forties adopted a 'laissez faire' economic policy, which exposed manufacturing to heavy competition and crippled its success.⁶

⁶ For an account of this early period, see, for example, an article based on the archive of *Le Commerce du Levant*, <https://www.lecommercedulevant.com/article/29389-lebanese-industry-standing-at-a-crossroads>

⁷ T. Collelo, T. and H. H. Smith (1989). *Lebanon, a Country Study*. Library of Congress.

It is not until the early seventies with the influx of foreign investment to Lebanon that manufacturing started to see growth again. A study by the Library of Congress⁷ describes this period well. It notes that the Lebanese industrial sector grew rapidly between the late-sixties and mid-seventies, achieving 20% of GDP in 1974, and employing 120,000 people, with a key focus on textile, furniture, and wood. The 1975 Civil War that followed halted this growth, leading to closure of more than half of manufacturing facilities in 1981. The economic difficulties that Lebanon faced in the late-eighties further restricted investments in manufacturing and led to more downsizing.

The post-civil war era saw a major shift of focus to construction and real estate, with the government turning its back on manufacturing again. The manufacturing contribution to GDP was estimated around 12% in the mid-2000s. This modest contribution continued despite the influx of capital following the increase in oil prices in 2007.

The status of manufacturing in the years preceding the crisis can be understood from a report by Association of Lebanese Industrialists (ALI).⁸ According to the this report, the total revenue from the Lebanese manufacturing sector was around \$8.8 billion in 2015, which represented around 17% of the GDP at the time. The sector seems to have a Pareto distribution in terms of size and revenue, with 71% of the revenue coming from 5% of the firms (each having capital exceeding \$20 million). Geography, around 65% of the firms are located in the Mount Lebanon area. In terms of the main specialties, ALI data indicates that food industries have the largest number of firms at around 19% (of the total of 1,077 firms), followed by plastic and chemicals at 14% of the total count, then paper and packaging

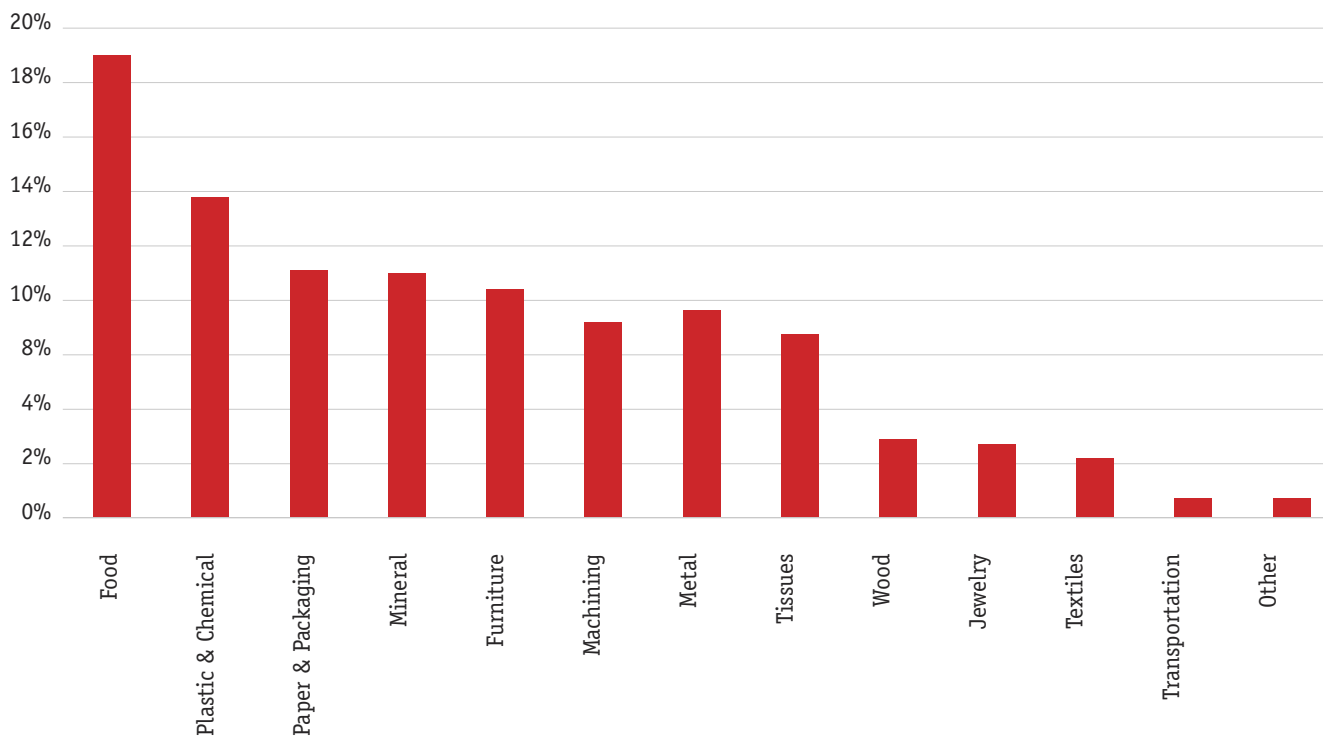
⁸ ALI Industrial Indicators, March 2017, <https://ali.org.lb/indicators/ali-indicators-march-2017/>

and minerals at around 11% of the count each.

Figure 2 shows the full distribution of the count of Lebanese manufacturing firms based on specialties. The fact that this distribution of firm count seems to be consistent across firms with different capital values suggests that the distribution of revenue among different specialties is similar to that in Figure 2.

Figure 2

Distribution of Lebanese Manufacturers by Number of Firms per Specialty



Source ALI

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This is based on an estimation of the workforce at around two million in a study by GIZ, https://www.giz.de/en/downloads/ELMA_Lebanon_2019.pdf

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World Bank estimate, <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=LB>

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Atallah, S. Ezzeddine, N. and Mourad J. (2019). Lebanon must develop an export strategy to create jobs. LCPS Policy Brief, <https://www.lcps-lebanon.org/articles/details/2169/lebanon-must-develop-an-export-strategy-to-create-jobs>

In terms of labor, the total number employed in manufacturing in 2015 was estimated by ALI to be around 77,700, which represents around 4% of the total workforce.⁹ The average individual annual income in 2015 was \$10,400, which is above the GDP per capita of \$7,800 at the time.¹⁰

The output of the manufacturing sector in 2015 was split between local consumption, at 83% of the total, and exports at 17% of the total. According to a recent LCPS study, the major exports in 2017 were jewelry (17% of total), machinery (15% of total), metals (14% of total), food (13% of total), and chemicals (9% of total).¹¹ Another LCPS study focused on the export potential of Lebanon, and found that Lebanese manufacturers generally export goods

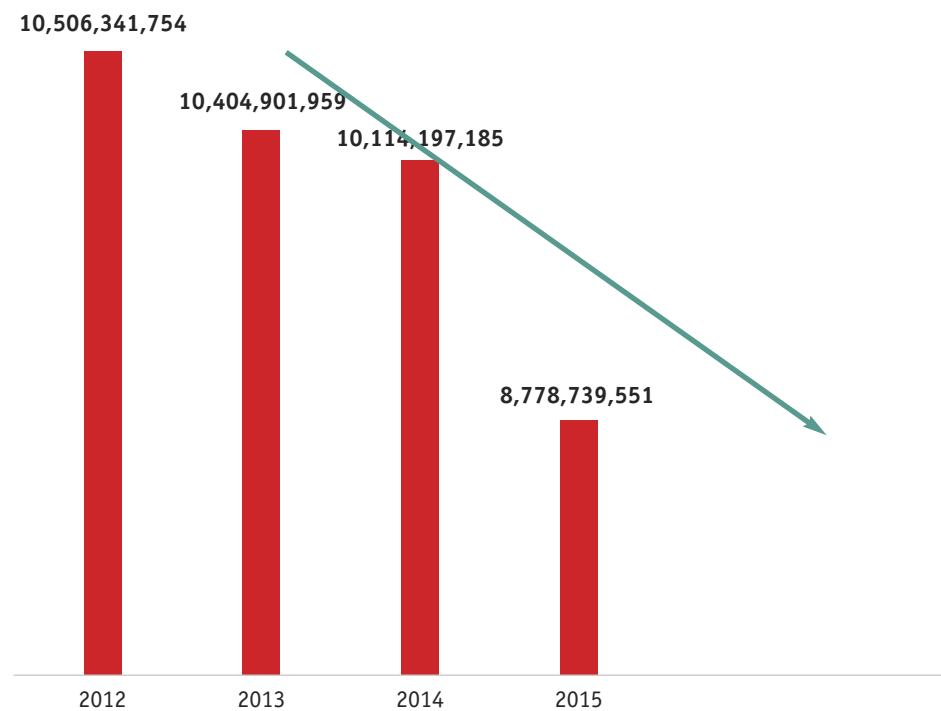
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Bustos, S. and Yildirim, M. A. (2017). Lebanon's manufacturing sector inaction and untapped potential. LCPS Policy Paper, <https://www.lcps-lebanon.org/articles/details/2285/lebanon%E2%80%99s-manufacturing-sector-inaction-and-untapped-potential>

that are in the vicinity of complex ones in the product space.¹² Accordingly, the study recommended the development of new complex products, particularly in the machinery and chemical specialties, as a means of advancing exports.

Finally, it is worth noting the high interest rates (resulting from the financial sector's sketchy practices) and the rentier economy prevailing before the crisis seem to have led to a downward trend in Lebanese manufacturing many years before the crisis actually happened. A 2017 report by ALI reveals a decrease in the number of manufacturing firms, which dropped from 2,163 in 2012 to 1,977 in 2015 (around 9%), and in manufacturing revenue, which dropped from \$10.5 billion in 2012 to \$8.8 billion in 2015 (around 16%). Figure 3 illustrates this downward trend in revenue. This, unfortunately, suggests that the Lebanese industrial sector needs to recover from rogue economic policies preceding the current crisis by many years, if not decades, as our brief historical review above indicates.

Figure 3

Downward Trend in Manufacturing Revenue (in USD) before the Crisis



Source ALI

To conclude this background section, we summarize, based on a cursory literature review, the experience of manufacturers in countries hit by similar economic and financial turbulence, with the hope of drawing useful lessons for Lebanon.

The economic crises in some countries in South America (such as Bolivia, Brazil, and Argentina) and Zimbabwe,^{13,14} which are characterized by high inflation, have been reported to complicate procurement, especially as they limit supply sources and financing options. Hyperinflation in these countries led some companies to shut down their manufacturing operations and to engage in speculation in the local currency as a means of survival. A detailed account of the financial crisis that hit Zimbabwe in the early 2000s reveal a large number of manufacturers closing, a significant drop in the number of establishments working at full capacity, and a significant decrease in exports. It seems that Lebanese manufacturing has not been hit as hard during the current crisis, despite similar challenges facing the two countries related to lack of foreign currency, weak domestic demand, fuel shortages, and unreliable power.

While the experience of the manufacturing sector in Zimbabwe in the early-2000s financial crisis is not encouraging, there is some evidence from Chile that its financial crisis in 2009 led to an increase in new product and process development.¹⁵ In addition, a study about the effect of the 2009 crisis on Greece employment suggests some manufacturing sectors, such as the food industry, were less affected by the crisis, which led the authors of the study to propose measures (such as tax cuts and investment subsidies) that encourage the growth of the less affected sectors.¹⁶ Another study took a closer look at a sub-sector of the food industry in the same crisis, dairy manufacturing. This study found that market share, liquidity, and leverage have a significant effect on profits during the crisis and explains profitability differences among the firms.¹⁷

A broader study examined the impact of financial crises on exports by looking at 147 banking crises in over 160 countries in the period 1970-2012.¹⁸ The study found that the availability of banking finance has a significant impact on exports, and that industries relying on credit lines from banks struggle the most on the export front. Specifically, firms relying on banking finance were found to grow their exports 14% less than other firms not relying on banks. This suggests that it is challenging for Lebanese manufacturers to boost exports during the current crisis, particularly with an effectively bankrupt ('zombie') banking system.

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Dube, C. and Chipumho, E., (2016). Response of the manufacturing sector to the Zimbabwe economic crisis. *Economic Management in a Hyperinflationary Environment: The Political Economy of Zimbabwe, 1980-2008.*

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Swanson, G. (1989). *The Hyperinflation Survival Guide: Strategies for American Business*, Lake Oswego: Eric Englund.

15
Alvarez, R., Benavente, J.M. and Crespi, G. (2010). Economic crisis and organisational change in developing countries: Evidence from Chile. *International Journal of Technological Learning, Innovation and Development*, 3(1), pp.67-86.

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Voulgaris, F., Agiomirgianakis, G. and Papadogonas, T. (2015). Job creation and job destruction in economic crisis at firm level: the case of Greek manufacturing sectors. *International Economics and Economic Policy*, 12(1), pp.21-39.

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Notta, O. and Vlachvei, A. (2014). The impact of financial crisis on firm performance in case of Greek food manufacturing firms. *Procedia Economics and Finance*, 14, pp.454-460.

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Iacovone, L., Ferro, E., Pereira-López, M. and Zavacka, V. (2019). Banking crises and exports: Lessons from the past. *Journal of Development Economics*, 138, pp.192-204.

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Maarek, P. and Orgiazzi, E.,
(2013). Currency crises and
the labour share. *Economica*,
80(319), pp. 566-588.

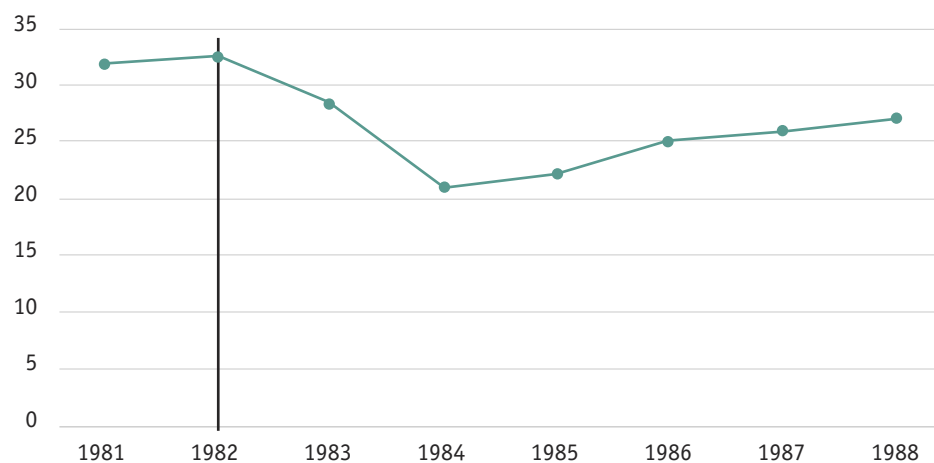
Another study examined the effect of financial crises on manufacturing wages by looking at several countries in the 20th century.¹⁹ The study found that currency crises tend to affect manufacturing wages negatively, and that wages drop significantly after a crisis and then correct to a level lower than before the crisis (Figure 4). The study found on average a drop of 2% in labor share, defined as the fraction of economic output that accrues from workers compensation. With a similar trend being observed in the Lebanese manufacturing sector, these findings should be reassuring to the manufacturing workforce in Lebanon.

Figure 4

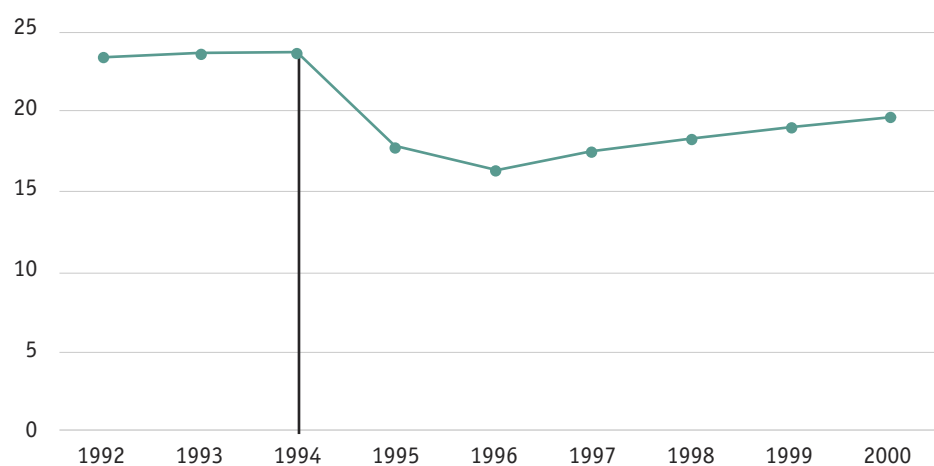
Effect of Crisis on Manufacturing in Uruguay and Mexico

(the solid line indicates the start of the crisis)

a Uruguay



b Mexico



Source Maarek and Orgiazzi

Challenges Facing Manufacturers

In this section, we summarize the numerous challenges facing manufacturers in Lebanon at present, based on financial, employment, infrastructure, government, political, and economic policy aspects.

Financial challenges

These can be discussed under four important categories:

■ Declining purchasing power of the local customer

The erosion of private and public sector salaries, hyperinflation, and the depreciation of the national currency²⁰ have created vast restraints on purchasing power. Lebanon ranked second, after Sudan, in the highest inflation rates globally in 2022, according to Fitch Solutions.²¹ The multiplier effects of the crisis plunged many families into income poverty, which in turn impacted local demand. UNESCWA identifies nearly 4 million people living in multidimensional poverty in Lebanon, an estimated 82 percent of the total population in 2021.²² More severely, an assessment for Lebanon's food security phase classification²³ reveals that an estimated 2 million people in Lebanon, including 1.29 million Lebanese residents and 700,000 Syrian refugees, were facing food insecurity between September and December 2022. Projections reveal the situation will worsen in the first quarter of 2023, with 2.26 million people expected to require urgent assistance.²⁴

■ Pricing difficulty

Indeed, the aforementioned factors are highly regressive, drive reductions in manufacturing output, and force Lebanese manufacturers to reduce their margins. Furthermore, the steady adoption of the Sayrafa rate as the new official rate,²⁵ across several economic transactions, including customs tariffs, implies that input cost pressures are not expected to ease anytime soon. As the country's political uncertainty rumbles on, coupled with the Central Bank's depletion of foreign currency reserves, a continuous depreciation in the currency is expected. Pricing strategies are also affected by (1) hyperinflation that increased raw material, telecommunication, and energy costs, (2) inventory imbalances (3) supply chain disruptions and inefficiencies and high shipping costs, partially due to trade agreements and regional political turmoil. While some cost increases may cause only a temporary challenge in pricing strategies, others are probably permanent and can contribute to eroding margins for Lebanese manufacturers.

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In the first week of February 2023, the Lebanese pound hit a new low against the dollar on the black market, an average of 62,000 against the US dollar, amid the country's economic crisis and relative political standstill.

21

<https://www.fitchsolutions.com/country-risk/lebanon-set-second-highest-inflation-rate-globally-2022-10-08-2022>

22

According to the UNESCWA, from a multidimensional poverty perspective, a household can be classified as poor if it is subjected to deprivation in the areas of health care, medicine, services, education, employment, or housing and assets, even if it is not materially poor.

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Lebanon: Acute Food Insecurity Situation September - December 2022 and Projection for January - April 2023 | IPC Global Platform (ipcinfo.org)

24

Economic crisis, currency depreciation, and unprecedented increase in food and non-food prices leave 2 million people in need of assistance in Lebanon | World Food Programme (wfp.org)

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As of February 1, 2023, Lebanon adopted a new official exchange rate of 15,000 pounds per US dollar.

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The term 'fresh dollars' is currently used in Lebanon to refer to dollars that entered the country after the beginning of the crisis (specifically after October 17, 2019). Bank accounts opened with these dollars are not subject to withdrawal restrictions.

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Manufacturers have struggled with informal capital control, especially in circumstances where banks closed down after becoming the target of public rage. Also, withdrawals in local currency apply exchange rates that erase up to 95% of their value.

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'Catastrophe' warning as Lebanese officials lift fuel subsidies | Business and Economy News | Al Jazeera

■ Lack of bank credit lines

The banking crisis, in particular, negatively impacted the investment growth of Lebanese manufacturers. Getting 'fresh dollars' is a main challenge for manufacturers (mainly those with limited exporting strategies), and the banks are giving no facilities after informally adopting strict capital controls, ceasing lending, and severely limiting all withdrawals from dollar accounts.^{26, 27} Additionally, the unclear and chaotic nature of support and subsidies from the government have created bottlenecks for manufacturers, especially subsidies related to importing fuel, wheat, and raw materials,²⁸ an already unsustainable scheme which depletes foreign reserves. Following the vast removal of subsidies on goods starting in 2021, the upward drift in prices will remain, adding to the inflationary pressures confronting both the consumer and manufacturer.

■ Judiciary and governance challenges

Finally, the financial situation created difficulty in drafting contracts stemming from the fact that they are only legally enforced in the rapidly deteriorating LBP (or in USD at the outdated peg/official exchange rate).

Employment and Wages

Lebanese manufacturers are suffering acutely from labor shortages, and the reasons are four-fold: (1) an unbalanced labor market, (2) a high emigration rate among the skilled labor force, (3) a skills gap evident from the shortage in the labor supply of people with the necessary skills, and (4) a lack of young professionals with an interest in technical and mechanical work. Some of these challenges are structural, such as the limitation of vocational schools that provide the skills and training needed for modern manufacturing, in addition to the lack of interest in manufacturing especially from the young generation. Recruiting and retaining skilled employees is harder now, especially for smaller manufacturers who are less able to adapt to the shifting labor market situation. Additionally, a large number of employees voluntarily left their jobs searching for better wages.

According to UNESCWA, a 27% loss in full-time employment was observed in the manufacturing sector between 2019 and 2020,²⁹ coupled with a 44.7% drop in sales between October 2019 and the average sales of 2020, two main consequences of the pandemic and the Beirut port explosion. Following the financial crisis, manufacturers who survived have tried to adjust to the new reality of wages. A sample of 133 households whose livelihood comes from

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21-00075-covid-19-policy-brief-en_feb1.pdf (unesco.org)

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Dagher, L., Jamali, I., Abi Younes, O. (2022). 'Advancing Evidence-Based Policy in Crisis Management: The Case of Lebanon.'

the manufacturing sector shows that 12% earn more than LBP10,000,000 monthly as of August 2022, which is relatively above the range for most other sectors (10% for retail, 5% for education, and 7% for agriculture). While only 2% earn below LBP650,000, 63% make between LBP1,200,000 and LBP5,000,000.³⁰ Many employers are paying their employees up to 80% of their salary in fresh US dollars. Of course, this finding cannot be generalized and there remain differences in the private sector, depending on the job category, size of the firm, product, market, and exporting, among other determinants.

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Dagher, L., Jamali, I., Abi Younes, O. (2022). 'Advancing Evidence-Based Policy in Crisis Management: The Case of Lebanon.'

Furthermore, the country's economic woes have translated into a rough societal reality. One recent study offers an evidence-based assessment of the cross-sectoral effects of Lebanon's protracted economic crisis on employment, incomes, energy poverty, livelihood and food-based coping strategies, and attitudes towards emigration in seven economic sectors.³¹ We highlight here the main findings relevant to the households earning a livelihood from the manufacturing sector. Generally, the sector has scored relatively better in several areas, as compared to the construction and agriculture sectors, for example. Still, some results highlight the severe consequences of the economic downturn on employees in this sector. One finding related to livelihood-based coping strategies relevant to energy savings shows that 85% of these households turn the heating down despite the house being too cold. The study also revealed that 59% of households are not able to make ends meet, given their monthly income, with 43% having had to sell an asset to cope and 72% reducing the number of food staples.

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Multidimensional poverty in Lebanon (2019-2021): Painful reality and uncertain prospects (unesw.org)

Decaying Infrastructure

Manufacturers are facing energy challenges with the failure of the main grid and the need to rely on private diesel generators and renewable energy, which have become very expensive. In 2021 and 2022, almost all governorates were experiencing interruptions that sometimes exceed 22 hours per day.³² Such infrastructural deficits take an additional toll on manufacturers' bottom lines, driving an increase in costs, unreliable delivery times, and higher inefficiencies. Some manufacturers have decided to move production to UAE, Oman, and other countries providing incentives, mainly due to a lack of electricity. Generators are polluting, expensive, and have a lower comparative advantage. While the integration of renewable energy sources is helping some manufacturers, factories still suffer from shortages in energy supply. Participants in the LCPS

roundtable on manufacturing revealed they are operating under 40% capacity, even with generators and renewable energy, mainly due to the absence of the main grid. The industrial sector has not been favored in the past and thus its infrastructure is initially very poor and relies heavily on private sector initiatives.

In addition to fuel costs, which have soared as the government gradually lifted subsidies and ended them in September 2022, the cost of imported goods through the port created new challenges for manufacturers since mid-2022. Additionally, shipping difficulties, related to the poor state of the roads and Beirut port have been leading to high losses. Finally, transportation and commuting challenges (as in the ability of workers to reach the plant) are leading to further waste of resources. If not corrected, the deterioration of infrastructure will inevitably hinder efforts to grow the Lebanese manufacturing base.

Dysfunctional Government

Corrupt and dysfunctional are two characteristics of successive Lebanese governments, which have been the main drivers of the country's decay. This challenges manufacturers in several ways: (1) delays in the processing of incoming raw material shipments and outbound exports (ministries are operating at less than 30% capacity, opening one day per week), (2) challenges in maintenance and capacity expansion, (3) lack of local production protection laws, (4) outdated environmental policies, and (5) illegal smuggling. After the Caesar Act of 2019, smuggling from Lebanon to Syria has expanded, exploiting the difference in prices of imports between the two countries. Since then, the financial crisis and exchange rates have also increased smuggling, especially of fuel oil. Additionally, Syrians based in Lebanon are opening their own manufacturing plants making cheeses and other milk products, an additional source of competition for some Lebanese industrialists, which is an issue yet to be seriously tackled by the relevant ministry.

Political Aspect

Regional political dynamics have severely impacted industrial growth in Lebanon. Affected by the Israeli-Lebanese conflict, the Syrian crisis since 2011, and the more recent crisis with the GCC countries, along with a lack of political support, the Lebanese manufacturing sector is not capable of adapting fast enough to cope with these regional export challenges. The barriers to export and market access, the limitation of transit exports through borders, lack of

access to larger Arab markets (such as Syria and Saudi Arabia, for different reasons) are all factors that restrict any growth potential for industrialists.

As an example of recent trade barriers, we shed light on the Saudi market. The diplomatic crisis with the GCC countries was exacerbated as Saudi Arabia announced a boycott of Lebanon in October 2021 and an implementation of a Saudi embargo on Lebanese imports in mid-2021. ALI revealed that the Saudi ban has directly hit around \$250 million worth of exports, though their initial target for 2022 was to move to \$500 million in exports to Saudi Arabia.³³ In 2019, Saudi Arabia was one of the key export destinations for Lebanese manufacturers, totaling 6% of industrial exports³⁴ and 14% of agri-food exports.³⁵ Thus, manufacturing was pushed to the brink of collapse, despite modest attempts to mitigate the damage to regional trade stemming from political tensions.

The Vulnerable Economic Model

Lebanese industry was neglected for 50 years, with little to no room for significant growth. Mounting challenges have dire effects on the sector from a liquidity crunch, dried-up consumption, implements on exporting, and eroded infrastructure. The vulnerable economic model, led by political elites, marginalized productive sectors, focused on tourism, banking, and other services, created an overreliance on imports, delayed digitalization, and created under-diversified supply chains. Lebanon is a net importer of food, 80% of its food needs are covered through imports.³⁶ Food accounted for 33 percent of the country's total imports in 2017, and 17% in 2021.³⁷ Changing the import-dependent nature of the Lebanese economy requires a shift in the economic model from vulnerability to resilience, a path that can only be achieved through adequate policy, macroeconomic stability, microeconomic industrial efficiencies, good governance, and social progress.

Opportunities Offered by the Crisis

The limited opportunities emerging from the crisis are tied to lower labor cost, increased local demand, and export potential.

Lower Labor Costs

One of the main production costs for Lebanese manufacturers is labor. Employee salaries are mostly being paid in LBP, with additional benefits, such as transportation fees, schooling, and medical support. Salaries are very low

33
No longer a 'cash cow', Saudi squeezes Lebanon's ruined economy | International Trade News | Al Jazeera

34
IDAL - Sectors in Focus - Industry (investinlebanon.gov.lb)

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IDAL Agrifood Industry in Lebanon Factbook 2020.pdf (investinlebanon.gov.lb)

36
Reducing Import Dependency: Challenges and Opportunities | Berytech

37
Food imports (% of merchandise imports) - Lebanon | Data (worldbank.org)

relative to previous years. Though some percentage of salaries is being paid in 'fresh dollars,' based on the roundtable findings, this segment of the salary remains partial, and salaries are obviously at lower rates than 2019 even if in fresh USD.

A sample study of 133 household income in August 2022 revealed only 12 percent earn more than LBP10 million (equivalent to \$300 at the time) per month. Referring to the sticky-wage economic theory,³⁸ the short-run aggregate-supply curve slopes upward because nominal wages are slow to adjust to changing economic conditions. Thus, wages are 'sticky' in the short run, and Lebanese manufacturers can take advantage by hiring more workers and increasing the quantity of output supplied. Manufacturers can also benefit from lower customs fees and taxes. Though the application of the new exchange rate to customs tariffs can hinder some advantages, the costs are relatively lower than paying in fresh USD, mainly for exporting companies.

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Borjas, G.J. (2020) *Labor Economics*. 8th ed. New York, NY: McGraw Hill Education.

Increased Local Demand

Opportunities might also exist in sourcing some raw materials locally. Currency depreciation makes foreign products more expensive. Many households are paid in LBP, which is altering consumer preferences towards local alternatives. Reducing the reliance on imports for local consumption can encourage local production at a micro-economic level and reduce the country's trade deficit at the macro level.

Higher Export Potential

Again, with the lower cost, there might be more demand for Lebanese exports. Evidence can be derived by the Product Space Analysis conducted by USAID. Opportunities need to be leveraged by way of two key dimensions: distance to existing capabilities and product complexity. Such room for growth can be identified at a sub-sectoral level, considering the potential growth of specific sub-sectors, their local particularities, and potential countries of destination. The study also highlights opportunities in specific subsectors relative to the country's comparative advantage analysis: (1) vaccines, blood, antisera, toxins, and cultures production, (2) washing and bottling machines, (3) textile products and articles for technical uses, (4) motor vehicle parts and accessories, and (5) other heating machinery. Of course, such opportunities exist in targeting new geographical destinations, such as the Netherlands, France, Mexico, Czech Republic, Slovakia, US, China, Canada, Australia, and others.

39

Wu, L., Wei, Y. and Wang, C. (2021) 'Disentangling the effects of business groups in the Innovation-Export Relationship,' *Research Policy*, 50(1), p. 104093.

Furthermore, higher export potential might also be mediated by enhanced innovation capabilities and research and development investments. Literature³⁹ emphasizes that the export intensity of innovating firms is steadily higher than that of non-innovating firms. Academic-industrial partnerships in this regard can create sound opportunities. Overall, export potential opportunities exist, and vary along the product lines. However, it is essential to recognize that, in some cases, the exchange rate volatility somewhat counterbalances the positive effect of currency depreciation on exports, which can slow growth in manufactured exports. A weak currency can depress certain production due to diminished profitability. Potential for growing exports needs to also analyze the relative price demand elasticity of products.

Recommendations

In the following, we offer policy recommendations that we deem to be useful to manufacturers in the current crisis based on insights from the expert roundtable discussion, the background and literature reviewed in Section 2, and emerging trends and technologies. We classify these recommendations into target sectors, government regulations, energy, infrastructure, finance solutions, and embracing emerging paradigms.

Target Sectors

There is a need for manufacturing in Lebanon to focus on key sectors where profitability and export potential are plausible. This can be done by looking at the product space and attempting to incrementally increase the complexity of the products manufactured in Lebanon. For example, some studies suggest focusing on boosting electronics manufacturing,⁴⁰ while others propose advancing production of medical lab supplies.⁴¹ Lebanese manufacturers should embrace the results of these studies and partner with research institutions to update and refine the findings in light of the ongoing crisis. Manufacturers also need to actively work on import substitution by developing local manufacture of popular products, especially in light of shifting economics (decrease in cost of the labor component) and changing consumer behavior (customers becoming more price sensitive, preferring local brands).

Finally, Lebanese manufacturers should seek the support of the government in this targeted effort, perhaps with tax and import fee reduction incentives. The government, for its part, should also identify some sectors where protection

40

Bustos, S. and Yildirim, M. A. (2017). Lebanon's manufacturing sector inaction and untapped potential. LCPS Policy Paper, <https://www.lcps-lebanon.org/articles/details/2285/lebanon%E2%80%99s-manufacturing-sector-inaction-and-untapped-potential>

41

USAID, 2022, Lebanon's Product Space Exploring Paths for Export Diversification in Lebanon, September 2022.

from imports is needed for the sake of national interest, which applies on both the finished product and the raw material level.

New Government Regulations

LCPS roundtable experts stressed the need for improved governmental regulations and policies, including:

- Instituting a new tax and customs policy that gives manufacturers a competitive edge over imported products for a well-defined time period, until these manufacturers can compete on their own in the open global market,
- Revisiting trade agreements to ensure the benefit of local manufacturers, while not being too restrictive on imports to keep local high-quality products competitive,
- Adopting a more genuine approach to control illegal smuggling both via border control and subsidy policy,
- Creating incentives for operating in industrial zones by way of improved infrastructure and low property and municipal taxes.

Energy, Infrastructure, and Finance Solutions

Energy is a key challenge, and with many industries located in the Greater Beirut area, the potential of benefiting from renewable energy becomes challenging (for example, due to limited space available for solar panels). Adopting micro-grid solutions to connect to other organizations and even residential units can be beneficial. The government can contribute to easing-up the electricity crisis by 'opening up the grid' where it takes on the role of managing the grid while it allows private businesses to generate and sell electricity to the grid. For example, a solar farm in Bekaa can generate power for factories in Beirut and Mount Lebanon.

Regarding the high cost of fuel, a possible remedy could be in ride sharing (busses and carpooling) and technology-enabled ones (apps for ride sharing among employees of one or more companies). To reduce the need for extensive capital financing, manufacturers can share major resources—a solution which has been adopted in other countries.⁴² Sharing can also provide procurement financing solutions. For example, several manufacturers can form a cluster for procurement of raw material, which would facilitate obtaining credit lines and quantity discounts.

42
Yu, C., Xu, X., Yu, S., Sang, Z., Yang, C. and Jiang, X., 2020. Shared manufacturing in the sharing economy: concept, definition and service operations. *Computers & Industrial Engineering*, 146, p.106602.

43

Heizer, J., Reder, B. and Muson, C., 2016. *Operations Management: Sustainability and Supply Chain Management*. Pearson.

Embracing Emerging Trends

The crisis in Lebanon should not prevent manufacturing companies from adopting modern trends that can add efficiency and reduce cost, especially in pain areas such as energy and transportation. Automation, sensory technologies (relying on electronic sensors to collect data) and data science can all help in this vain. Moreover, the efficiency of operations inside the manufacturing plant continues to improve globally, and Lebanese manufacturers can avail themselves of this. For example, productivity, defined as the ratio of output goods over input resources, has been improving by 2.5% per year in the US every year. More than 52% of this improvement comes from advances in operations management.⁴³ Collaborating with researchers in local universities with expertise in these emerging trends could prove to be beneficial for Lebanese manufacturers.

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About the Policy Brief

A Policy Brief is a short piece regularly published by LCPS that analyzes key political, economic, and social issues and provides policy recommendations to a wide audience of decision makers and the public at large.

About LCPS

Founded in 1989, the Lebanese Center for Policy Studies is a Beirut-based independent, non-partisan think-tank whose mission is to produce and advocate policies that improve good governance in fields such as oil and gas, economic development, public finance, and decentralization.

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