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Performance diagnosis of urban economic recovery and resilience:

The case of Beirut

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Beirut

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This "Performance diagnosis of urban economic recovery and resilience: The case of Beirut" report is a main output of the UN Development Account Project on "Building Urban Economic Resilience during and after COVID-19" implemented in 16 cities around the globe including three cities in the Arab region, namely Alexandria (Egypt), Beirut (Lebanon) and Kuwait City (Kuwait). The project falls under the framework of the Economic and Social Commission for Western Asia (ESCWA) on Sustainable Urban Development, particularly on Smart, Safe and Resilient Cities in the Arab region. The project is led by Ms. Sukaina Al-Nasrawi, under the overall guidance of Ms. Mehrinaz El-Awady, Director and lead of Cluster on Gender Justice, Population, and Inclusive Development.

This report was developed by Mr. Walid Marrouch, Associate Professor of Economics at the Lebanese American University and ESCWA consultant for the implementation of the project in Beirut, Lebanon under the overall guidance and substantive support of Ms. Sukaina Al-Nasrawi, Lead of ESCWA's portfolio on Sustainable Urban Development. The report also benefited from the valuable comments of Ms. Nisreen Al Araj, Regional Consultant on Urban Development and Mr. Adnan Hassoun, Researcher at ESCWA. It also benefited from the valuable insights of UN-Habitat-Lebanon and of experts in the field through focus group discussions and a related validation workshop.[1]

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Key messages

Encourage investment in knowledge economy to decrease the vulnerability of the local economy to trade shocks and enhance the capacity of the city to export services and create a business development hub at the municipal level.

Address informal employment and encourage local and national authorities to reduce its prevalence through measures including by providing financial incentives to employers who hire workers on a formal basis.

Encourage the issuance of municipal bonds to provide the city with a source of financing for targeted projects, many of which are unlikely to be financed by the national Government. Bond issuance would reduce financial vulnerability by decoupling revenue collection at the central and local levels.

Encourage increased engagement of citizens in decision-making and increased accessibility to public information though establishing a primary municipal data portal, or a "one-stop shop" for information.

Encourage investment in infrastructure through fostering public private partnerships, thereby increasing access to basic services and reducing the vulnerability of the business environment. Efforts should address substantial city weaknesses including renewable power generation facilities and transportation infrastructure.

Executive summary

This report, entitled "Performance diagnosis of urban economic recovery and resilience: The case of Beirut", is based on findings from the second phase of the "Building Urban Economic Resilience during and after COVID-19" project, which was implemented in 16 cities across the Africa, Arab, Asia-Pacific, European and Latin American regions. The project aims to support efforts by local governments to design, implement and monitor sustainable, resilient, and inclusive coronavirus disease (COVID-19) recovery plans. The Economic and Social Commission for Western Asia (ESCWA) is leading implementation of the project in three Arab cities, including Beirut.

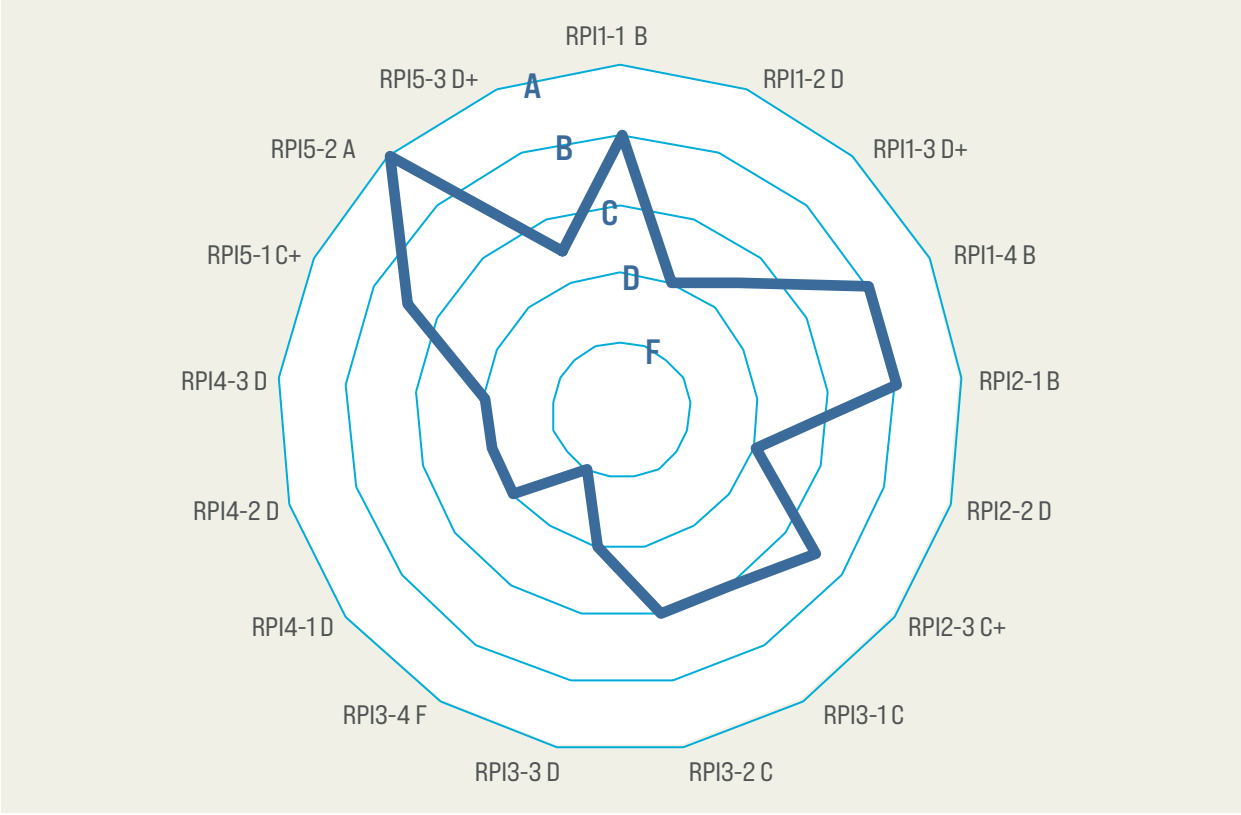
Specifically, this report analyses the urban resilience of Beirut. It also aims to inform and guide the development of an economic resilience-building plan for the city. The diagnostic methodology followed herein was developed by the United Nations Capital Development Fund (UNCDF), in collaboration with the key project partners, including ESCWA. That methodology is based on the Guiding Principles and Practices for Urban Recovery and Resilience[2] and the Global Compendium of Practices on Local Economic and Financial Recovery,[3] both of which were developed specifically for this project. According to the diagnostics and planning tool (DPT),[4] resilience is based on the concept of balanced growth, which requires that increases in output per capita are accompanied by a constant or declining capital-output ratio, interest rate and capital-labour ratio of income. Although those requirements are macroeconomic in nature, the DPT adopts a microeconomic approach in order to examine the economic and structural features that provide a foundation for balanced growth. Resilience stems from social and community cohesion, and efforts to promote resilience must be based on a participatory

approach that provides for urban development while also taking into account the needs of particularly vulnerable members of society, including women and young people. Promoting resilience also means to protect existing jobs, foster environmentally sustainable job creation, and create the fiscal space needed for macroeconomic responses that ensure the long-term financial sustainability of the city.

This report introduces solutions that can be used to formulate a practical framework for the creation of more resilient cities in the post COVID-19 world. This is of particular importance for Beirut, the capital of Lebanon and the economic, political, and financial centre of the country. The first COVID-19 case in Lebanon was reported in February 2020 and the series of lockdowns that were then imposed to combat the pandemic significantly disrupted economic activity. The lockdowns were, moreover, imposed in a country that was already finding it hard to withstand the major economic and financial challenges resulting from the political upheavals that took place in late 2019.

The resilience diagnostic process for the city of Beirut was based on a mapping exercise, which made use of data provided by public authorities and other key stakeholders. It included a detailed analysis of the performance of Beirut in five urban resilience areas, namely the local business environment, the local labour market, the local financial system, economic governance, and basic service infrastructure and connectivity. Those five areas were assessed using 17 quantitative and qualitative indicators. Quantitative data were obtained from national and international sources and input from key stakeholders was sought in order to complement the data collected. Qualitative data were collected in two focus group discussion meetings, held on 18 and 19 February 2021. Input was provided by stakeholders from the Ministries of Finance and Labour, industry, the banking sector, business start-ups, academic institutions and civil society organizations. The scoring of all 17 indicators was endorsed at the Validation of Beirut Diagnostics and Local Stakeholders Visioning Workshop,[5] organized by ESCWA in Beirut on 29 March 2021.

Figure 1. Beirut resilience performance indicators (RPI)



Source: Author.

The scores given for the indicators across the five urban resilience areas indicate that, overall, Beirut performs weakly in terms of its resilience. It is particularly weak in terms of economic governance, but the city demonstrates only moderate to weak resilience across the other four areas. The results are summarized below. Further details are provided in the findings section of this report.

- **Resilience of the local business environment:** Beirut demonstrates moderate resilience in connection with a number of business performance indicators. The city has strong to moderate local economy diversity (RPI 1-1), weak openness and external market integration (RPI 1-2), weak entrepreneurship and innovation (RPI 1-3), and moderate productivity, economic, and financial capacity (RPI 1-4).
- **Resilience of the local labour market:** Beirut demonstrates moderate resilience, mainly due to low female labour force participation rates. It demonstrates moderate labour market flexibility (RPI 2-1), weak labour mobility (RPI 2-2) and moderate social protection of labour (RPI 2-3).
- **Resilience of the local financial system:** Beirut demonstrates moderate resilience with regard to local financial system indicators. The size and depth of the financial system (RPI 3-1) is rated as moderate, as is financial performance and soundness (RPI 3-2). City fiscal space (RPI 3-3) is rated as weak, while city financial health and stability (RPI 3-4) is rated as very weak.
- **Resilience of economic governance:** Beirut performs weakly in this area. Beirut has weak economic governance structures and leadership (RPI 4-1), weak scope and quality of city planning (RPI 4-2) and weak investment readiness (RPI 4-3).
- **Resilience of basic service infrastructure and connectivity:** Beirut is rated as strong to moderate in this resilience area. The city is rated as moderate in terms of the coverage and functionality of basic public services and infrastructure (RPI 5-1), strong in terms of health service coverage (RPI 5-2) and weak in terms of connectivity and mobility (RPI 5-3).

Overall, the results of the analysis suggest that the city of Beirut needs to strengthen its capacity in all five urban resilience areas. On the business environment side, it is important for the city to enhance its ability to export services, particularly as it remains heavily reliant on imports. Moreover, the creation of a business development hub at the municipal level could help align private sector efforts and facilitate the provision of legal advice for businesses in the informal economy seeking to move into the formal economy. In addition, the business environment could be further developed by providing vocational training to women and girls without a university education and by providing subsidies for nurseries for the children of working women. With regard to the labour market, the Municipality of Beirut could implement worker (re)training programmes and promote women's participation in the job market with a view to strengthening diversity in the labour force. Furthermore, creating an export platform to market the products of female-owned businesses would further strengthen the participation of women in the economy. With regard to financial system resilience, the analysis makes clear the need for the city to diversify its sources of income and for urgent efforts to be made to promote a culture of audits and accountability. Issuing municipal bonds could increase fiscal space for the city on the revenue side. With regard to economic governance, the analysis underscores the need to streamline bureaucratic procedures and provide greater autonomy to the Municipality to manage publicly owned land, as doing so could create investment opportunities and therefore reduce the city's vulnerability to economic shocks. Finally, with regard to the resilience of the city's basic infrastructure and connectivity, the analysis draws attention to the need to promote private-public partnerships, which could help mobilize the resources needed to finance critical public infrastructure projects.

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Introduction

Introduction

A. Programme context

This report presents a detailed analysis of the economic resilience of Beirut in the context of the COVID-19 pandemic. The analysis was undertaken at the municipal level as local governments act as focal points for action related to urban resilience. The analysis is an important component of the "Building Urban Economic Resilience during and after COVID-19" project, which is being implemented in 16 cities located across the Africa, Arab, Asia-Pacific, European and Latin America regions.[6] Beirut is one of three cities chosen for the project in the Arab region. Seven partners have contributed to the project, namely, ESCWA, the Economic Commission for Africa (ECA), the Economic Commission for Europe (ECE), the Economic and Social Commission for Asia and the Pacific (ESCAP), the Economic Commission for Latin America and the Caribbean (ECLAC), the United Nations Human Settlements Programme (UN-Habitat), and UNCDF.

The project aims to deepen understanding of the key drivers of urban resilience within cities. It examines solutions that contribute to a practical framework for creating more economically resilient cities and local government practices that are better able to withstand shocks such as the COVID-19 pandemic and other broad-based socioeconomic stresses likely to occur in an increasingly urban world.

B. General information about the city of Beirut

Beirut is the capital city of Lebanon, which until 2019 was an upper-middle-income country in the Arab region. Beirut, which is located on the shores of the Mediterranean, encompasses the largest port in the country and the country's only passenger airport. Although, greater metropolitan Beirut is a relatively large area, administrative Beirut (reviewed in this report) is a relatively small city in terms of its surface area, covering some 21.5 square kilometres. Beirut is the economic, political, and financial centre of Lebanon. According to the national Labour Force and Household Living Conditions Survey 2018-2019, conducted by the Central Administration of Statistics,[7] the population of administrative Beirut stood at 342,000 in 2018, while Lebanon as a whole had a population of 4.8 million inhabitants. It should be noted, however, that more than 50 per cent of the residents of Lebanon live in greater Beirut, which includes the city and its southern and eastern suburbs. According to the Central Administration of Statistics, the gross domestic product (GDP) of Lebanon was $53 billion in 2019,[8] and according to data provided by the Central Administration of Statistics and the Labour Force and Household Living Conditions Survey 2018-2019, the city gross product for Beirut in 2019 was estimated at $4.3 billion. Furthermore, most of the large universities and hospitals in the country and many private and public schools are located in administrative Beirut. The economic and geographic centrality of Beirut causes its daytime and night-time population to differ

342,000

was the population of administrative Beirut in 2018

substantially. Indeed, according to commuter data provided by the Ministry of the Interior, the city's population almost doubles during the day.[9]

Beirut is governed by the Municipal Council,[10] an elected body comprising 24 members, who in turn elect the mayor of the city. The mayor reports to the Office of the Governor of Beirut, which is overseen by the Ministry of the Interior and Municipalities. The Ministry allocates municipal budgets to cities across Lebanon. Both the Governor and the Ministry supervise the activities of the Municipal Council. The municipal bureaucracy reports directly to the Governor, who holds ultimate authority to implement any plan proposed by the Municipal Council. All substantial municipal spending must be approved by the national Government, while any suspected misconduct is investigated by the Central Inspection Bureau. This arrangement results in a two-track executive decision-making process at the municipal level. As a consequence, some duplication and uncertainty are common in municipal policymaking.

The current municipal vision of urban resilience focuses on catastrophic environmental concerns rather than on other resilience areas. In that regard, the city of Beirut has enacted legislation that, while appropriate in theory, has proven inadequate in practice. Furthermore, although the Municipal Council has adopted a vision for urban resilience, that vision has not yet been integrated into a long-term planning framework. Particular attention is currently given to short-term solutions that may not address the longer-term interests of city residents. Furthermore, all resilience planning is currently conducted on an ad hoc basis with no input provided by specialized municipal departments or offices. The city's economy, governance, and polity have had a significant impact on its resilience to external shocks, such as the recent COVID-19 pandemic.

C. COVID-19 impact

The first COVID-19 case in Lebanon was reported in February 2020. A month later, Lebanon, including the city of Beirut, went into its first COVID-19-related lockdown, which caused severe disruption to economic activity. The various lockdowns were, moreover, imposed in a country that was already finding it hard to withstand the major economic and financial challenges resulting from the political upheavals that took place in late 2019, following the 17 October uprising, a watershed moment that followed a long series of public policy failures in a challenging macroeconomic climate. Since the start of the crisis in the Syrian Arab Republic, the Lebanese economy has struggled to grow while the country has suffered the repercussions of a massive influx of Syrian nationals. Starting in 2016, the Banque du Liban (the country's central bank) has been compelled to enact a series of financial measures to maintain the Lebanese pound's peg to the United States dollar and ensure the solvency of the country's banks. Those measures have proven costly, however, and have been largely ineffective at improving the country's balance of payments. Moreover, in 2018, prior to general elections, the Government approved a series of ill-conceived public sector salary and benefit increases that further increased the country's fiscal burden.[11] Thus, on the eve of the 2019 uprising, Lebanon faced a number of serious fiscal and monetary challenges that became all too apparent once the uprising started.

Against that backdrop, the largest manmade explosion in the world of the twenty-first century occurred at the port of Beirut on 4 August 2020. The explosion caused the death of more than 200 individuals, injured some 6,500 others and caused damage to the homes of more than 300,000 people. The World Bank estimated the physical damage at between $3.8 billion and $4.6 billion.[12] Combined, the explosion, the ongoing economic and political unrest and the multiple lockdowns and restrictions imposed in order to combat the COVID-19 pandemic made 2020 a

very difficult year for the inhabitants of Lebanon, and particularly for those living in Beirut.

The recent events in Lebanon have had a very negative impact on all economic sectors in all five urban resilience areas. According to the Global Compendium of Practices on Local Economic and Financial Recovery, the Ministry of Social Affairs anticipated that the COVID-19 pandemic and the country's economic crisis would have a very negative impact on the country's labour market in 2020 and 2021. The Ministry also anticipated a contraction in GDP of some 15 per cent, and an increase in the poverty and unemployment rates to more than 50 per cent over the same period. As for the local business environment, the International Labour Organization reported that, in a sample of 363 small-scale business enterprises, around half of those businesses had ceased operations because of the COVID-19 pandemic and the repeated lockdowns.[13] As for the local financial system, the Lebanese pound fell sharply against the United States dollar following the imposition of the first lockdown to combat COVID-19 and the Government's Eurobond default in March 2020. In 2020, the precipitous fall in the value of the Lebanese pound coincided with a sharp rise in the rate of inflation, which, at one point, reached 80 per cent according to the Central Administration of Statistics.[14] Some economists suggest that the real inflation rate was actually much higher.[15] Rampant inflation has severely reduced the purchasing power of all households in Lebanon. Those unfortunate developments are reflected in a widening budget deficit that is expected to rise to 15 per cent while GDP per capita expressed in United States dollars at purchasing power parity contracted by 12.8 per cent in 2020. Moreover, collapsing economic growth has increased the percentage of the population living in poverty, namely those living on less than $8.50 per day, from 8 per cent in 2019 to 12.7 per cent in 2020, an increase of more than 50 per cent. As for economic governance the Government, keenly aware of the challenges facing the economy, has overseen a five-phase plan for gradually easing the measures enacted to combat the COVID-19 pandemic.

D. Key crisis response and recovery measures

The Lebanese Government implemented various measures at the national and municipal level in response to the COVID-19 pandemic. For example, the national parliament extended the deadlines for debt and tax payments for individuals and corporations, while the Municipality of Beirut established a dedicated COVID-19 committee to coordinate action taken by State authorities and non-governmental organizations at the city level. That committee also supervised the distribution of relief to poor families. The national parliament also approved the disbursement of cash transfers, amounting to some 1,200 billion Lebanese pounds, to poor households across Lebanon. In addition, a national solidarity fund was established by the national Government to collect monetary and in-kind donations. At the ministerial level, a number of specific actions were also taken. The Ministry of Finance, for example, extended financial deadlines and approved the disbursement of

450 billion Lebanese pounds to private hospitals, while the Ministry of Social Affairs implemented a cash aid programme to provide support to poor households.[16] The Ministry of Public Health refurbished a number of public hospitals to enhance their capacity to accommodate COVID-19 patients[17] and the Ministry of Finance provided aid to private hospitals to increase their bed capacity.[18] Relief efforts have sometimes been impeded, however, by a lack of coordination among ministries and the overlapping jurisdictions of municipalities and the central Government.[19] For example, the distribution of cash aid to 20,000 households in Beirut in 2020 was delayed due to disagreements regarding the mandates of the Municipality and relevant ministries. Challenges in that regard tend to stem from weak governance mechanisms. That weakness, the failure of the authorities to reach all poor households, and the disbursement of monetary relief in Lebanese pound banknotes further undermined the country's efforts to combat COVID-19. Indeed, the cash disbursed increased the Lebanese banknotes in circulation, which resulted in a further devaluation of the Lebanese pound and rendered the financial aid largely ineffective. The weakness of the Government's response spurred action from civil society organizations, a number of which provided in-kind aid to poor households, including aged persons who were unable to shop safely during the pandemic. Moreover, UN-Habitat conducted a rapid assessment of the municipal response to COVID-19 in order to help municipalities focus their interventions on "urban basic services, including Water, Sanitation and Hygiene (WASH)".[20] Overall, it is clear that, in order to enhance the effectiveness of assistance provided at the local level, more effectively coordinated, targeted interventions by relevant stakeholders, including aid agencies and governmental authorities, are urgently needed.

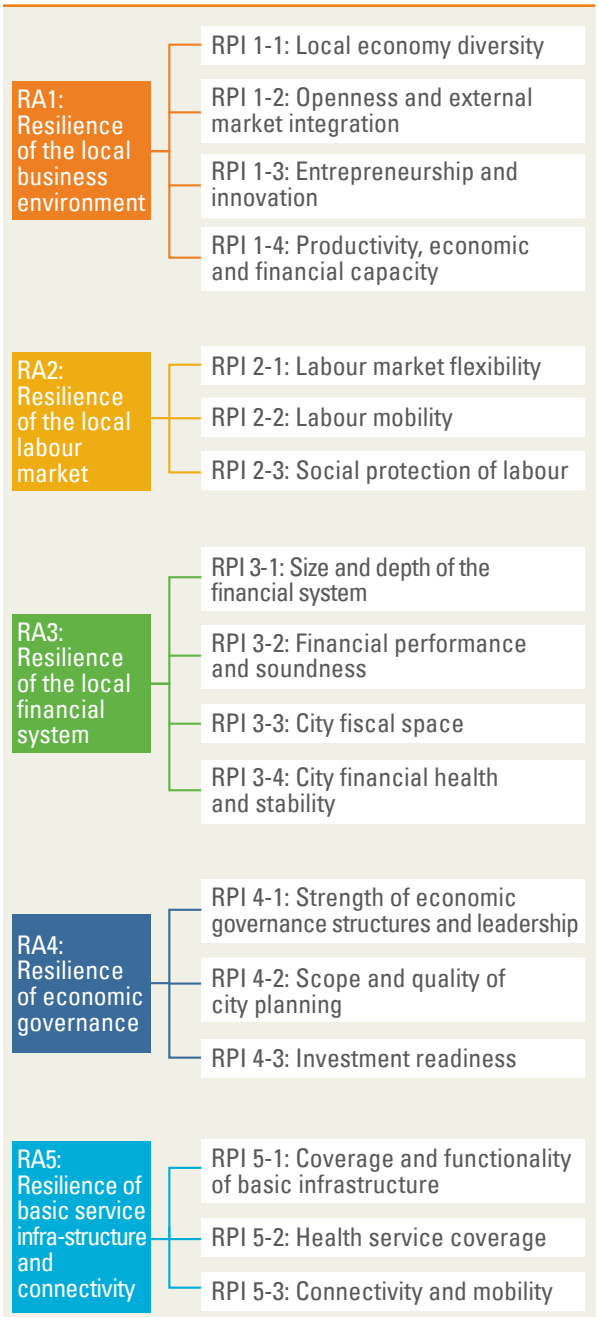
E. Diagnostic process

The DPT was used to assess the resilience of the city of Beirut in a coherent, holistic and comprehensive manner. As mentioned previously, the five urban resilience areas were assessed on the basis of 17 quantitative and qualitative indicators, each of which was given a score on the basis of the methodology outlined in the DPT document. ESCWA compiled the values in each performance indicator and gave an overall score for the performance indicator based on the conversion tables provided as part of

the DPT methodology. Thus, the figures in this report are based on data compiled by ESCWA.

The five urban resilience areas and their corresponding indicators, as set out in the DPT document, are illustrated in figure 2.

Figure 2. Design of the diagnostic tool



Source: Author.

The DPT adopts a demand-driven approach to urban resilience and assesses the design, implementation, and monitoring of COVID-19 responses by local governments. The DPT was formulated with a view to enhancing understanding of the drivers of economic and urban resilience in the context of external shocks, which are likely to become more frequent in the twenty-first century as the world becomes increasingly urbanized. The DPT comprises two interlinked tools for urban analysis. Firstly, a tool to assess resilience was designed with a view to answering the "what" questions by identifying weakness and strengths in a city's urban resilience. Secondly, a tool to assess planning for resilience was designed to inform policymakers on the most effective ways to enhance the resilience of a city and to plan for future shocks.

The data collection process revealed a number of challenges. Firstly, insufficient high-quality data is available at the municipal and city levels in Lebanon. Secondly, there is no or very limited data disaggregated by gender and age. An attempt was made to address those data gaps by making use of applicable national data on vulnerable groups. Thirdly, a number of public authorities are not at liberty to disclose their data. Proxies were therefore used for certain indicators when this was applicable.

Findings of the diagnostic tool

To assess the resilience of the city of Beirut, the DPT framework detailed in figure 2 was used.

In terms of the resilience of the local business environment, Beirut received a moderate performance score overall. The RPI 1-1 score shows that the city of Beirut has strong to moderate local economy diversity. Weak openness and external market integration is indicated by the RPI 1-2 score, weak entrepreneurship and innovation is indicated by its RPI 1-3 score and moderate productivity, economic, and financial capacity is reflected in the city's RPI 1-4 score.

As for the resilience of the local labour market, Beirut received a moderate performance score, primarily as a result of its low female labour force participation rate. The city demonstrates strong to moderate labour market flexibility as reflected in its RPI 2-1 score, weak labour mobility as shown in its RPI 2-2 score and moderate social protection of labour, as indicated by its RPI 2-3 score.

With regard to the resilience of the local financial system, Beirut received a moderate performance score overall. The size and depth of the city's financial system were rated as moderate, as illustrated by its RPI 3-1 score, and financial performance and soundness were also rated as moderate, as shown by its RPI 3-2 score. The city's fiscal space was judged to be weak, however, as reflected by its RPI 3-3 score, and its financial health and stability were assessed as very weak, as indicated by RPI 3-4.

As for the resilience of economic governance, the city received a weak performance score for strength of economic governance structures and leadership (RPI 4-1), scope and quality of city planning (RPI 4-2) and investment readiness (RPI 4-3).

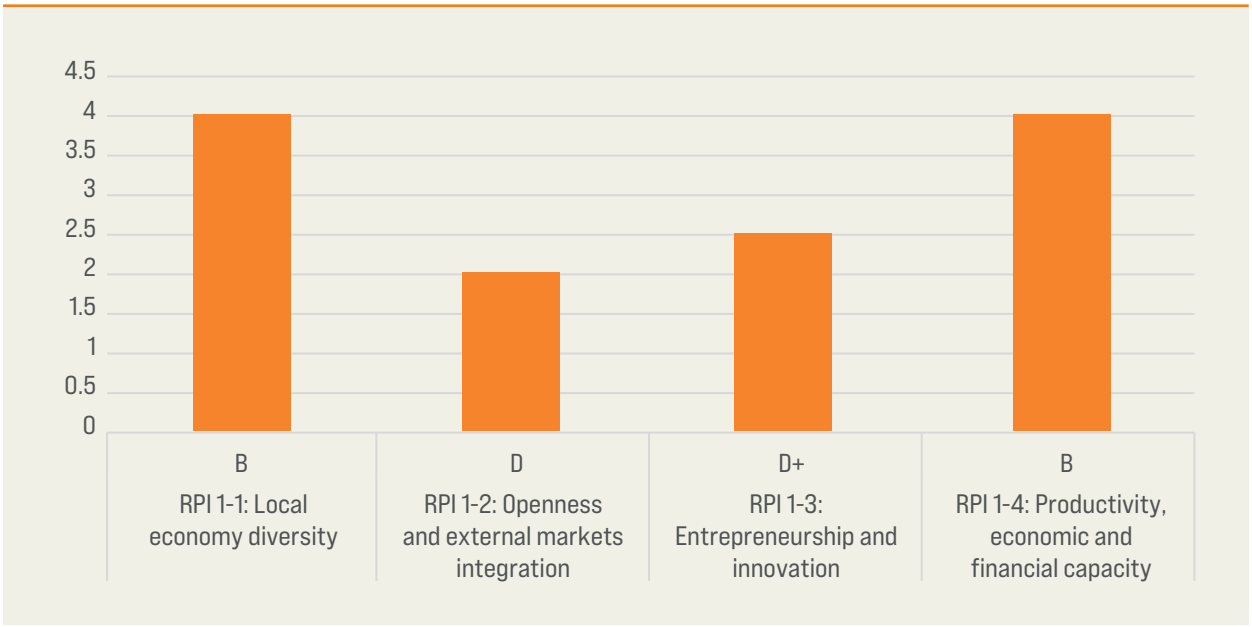
Finally, with regard to the resilience of basic service infrastructure and connectivity, Beirut was rated as strong to moderate overall.

Coverage and functionality of basic public services and infrastructure (RPI 5-1) was rated as moderate, health service coverage (RPI 5-2) was rated as strong, while connectivity and mobility (RPI 5-3) was rated as weak.

A. Resilience of the local business environment

The resilience of the local business environment is assessed using four resilience performance indicators that measure the capacity of local businesses (including public sector enterprises) to sustain growth and respond to changing demographic, technological and market conditions. Those indicators are: local economy diversity (RPI 1-1), openness and external market integration (RPI 1-2), entrepreneurship and innovation (RPI 1-3), and productivity, economic, and financial capacity (RPI 1-4). Figure 3 provides an overview of the resilience of the local business environment in Beirut as reflected in the scores given for each indicator in this resilience area.

Figure 3. Local business environment performance indicators



Source: Author.

Table 1. Local economy diversity

RPI 1-1: Local economy diversity		B
City product diversity	12.4%	A
Informality	34.0%	B
Public economy strength	14.0%	C
COVID-19 impact concentration	Not applicable	

Source: Author.

The first performance indicator in this resilience area is RPI 1-1: Local economy diversity, which comprises four measures for assessing the city, namely product diversity, the degree of informality, the size of the public sector economy and the percentage of businesses that ceased operations due to the COVID-19 crisis. Table 1 shows the values of those measures and corresponding scores. The overall score for RPI 1-1 is indicated in bold.

The first measure in this indicator is city product diversity, which is calculated using the Herfindahl-Hirschman Index, a common measure of market concentration. Unfortunately, city-level data to inform this measure were unavailable and national-level data from national accounts compiled by the Central Administration of Statistics for the year 2019 were used as a proxy. The second measure, informality, was calculated on the basis of data contained in the national Labour Force and Household Living Conditions Survey 2018-2019, carried out by the Central Administration of Statistics. The share of total employment in Beirut accounted for by jobs in the informal sector was used to assess that measure. It should be noted that women held 31 per cent of informal sector jobs and 30

per cent of formal sector jobs in Lebanon in 2018. The third measure, namely the strength (size) of the public sector economy was also calculated using data contained in the same survey, namely the share of total employment accounted for by public sector jobs at the national level. Finally, data on the impact of the COVID-19 pandemic on businesses were unavailable and were therefore not used in the scoring.

Overall, for indicator RPI 1-1, Beirut was given a B score. This indicates that the city has a low sector concentration, relatively low levels of informality in its economy, and a medium to small public sector.

The second performance indicator in this resilience area is RPI 1-2: Openness and external market integration, which uses two measures, namely location quotient range and local economy openness, to assess the degree of dependence of the local economy on external markets and the vulnerability of that economy to external shocks, respectively. Table 2 shows the values of those measures and their corresponding scores. The overall score for RPI 1-2 is indicated in bold.

Data to assess the location quotient range were unavailable and the measure was therefore not used in the scoring. The openness of the local economy was assessed by dividing the value of exports by the value of imports, with relevant data in that regard provided by BLOM Research Indicators and Trends in the Economy for the year 2019.[21]

Overall, for indicator RPI 1-2, Beirut was given a D score. This indicates that the economy of the city is heavily dependent on external markets.

The third resilience performance indicator is RPI 1-3: Entrepreneurship and innovation. This indicator is composed of four measures that address entrepreneurship and the business environment in addition to digital access and the availability of investment information. Table 3 shows the values associated with those measures and their corresponding scores. The overall score for RPI 1-3 is indicated in bold.

Table 2. Openness and external market integration

RPI 1-2: Openness and external market integration		D
Location quotient range	Not applicable	
Local economy openness	9.96%	D

Source: Author.

Table 3. Entrepreneurship and innovation

RPI 1-3: Entrepreneurship and innovation		D+
New business creation	Not applicable	
Business digitization rate	Not applicable	
Digital access	59.5%	C
State of the ecosystem for innovation support	Poorly developed ecosystem for innovation support with very few financial and technical facilities operating to support innovation at specific lifecycle stages	D

Source: Author.

Table 4. Productivity, economic and financial capacity

RPI 1-4: Productivity, economic and financial capacity		B
Business productivity	1	C
Share of businesses with access to electricity	100%	A
Access to affordable finance	Not applicable	
COVID-19-induced business failure rate	Not applicable	

Source: Author.

No data were available on the creation of new businesses or on the business digitization rate: those measures were therefore not used in the scoring. Digital access was calculated using the proposed proxy in the DPT, namely the GSM Association Mobile Connectivity Index.[22] The state of the ecosystem for innovation support is a qualitative measure that was scored on the basis of discussions held in a focus group meeting with subject matter experts that took place online on 19 February 2021.

Overall, for indicator RPI 1-3, Beirut was given a score of D+, reflecting the fact that the city has medium to low Internet access and very patchy mobile network coverage. Beirut has only a limited ecosystem for innovation support and very few financial and technical facilities currently support innovation.

The fourth resilience performance indicator in this resilience area is RPI 1-4: Productivity, economic and financial capacity. This includes four measures, namely business productivity, the share of businesses with access to electricity, access to affordable finance, and the COVID-19-induced business failure rate. Table 4 shows the values associated with those measures and their corresponding scores. The overall score for RPI 1-4 is indicated in bold.

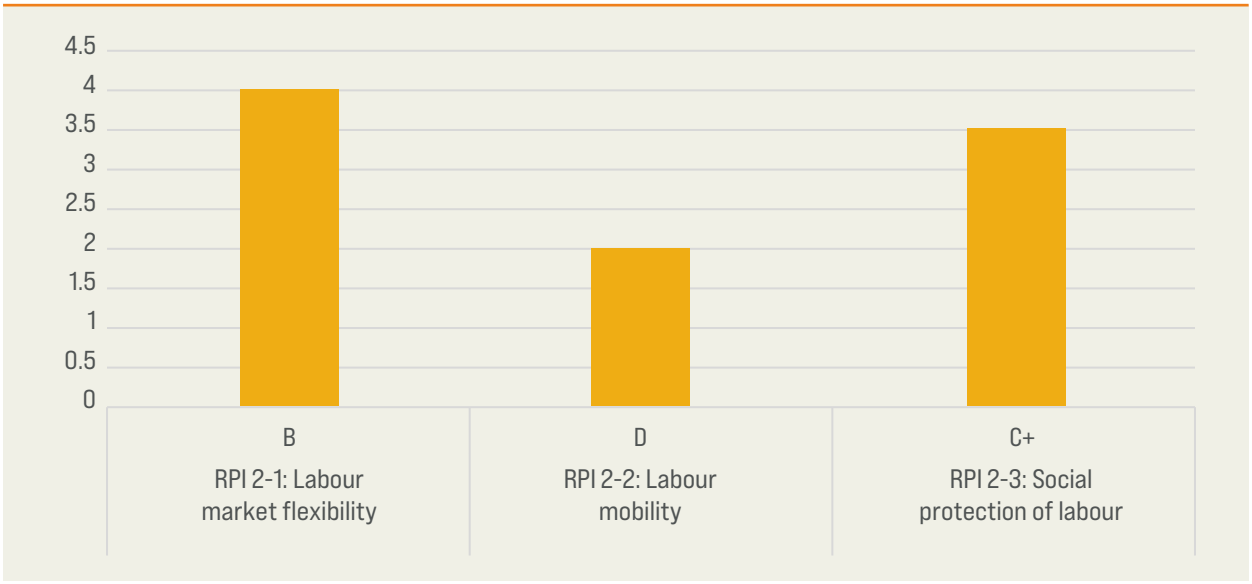
Business productivity was calculated using the ratio of average labour productivity of the city to average national productivity, measured as the output in monetary terms per worker. Data was drawn from the national accounts compiled by the Central Administration of Statistics for the year 2019 and the Labour Force and Household Living Conditions Survey 2018-2019. According to Maher Itani, Project Manager at KVA SAL, an electricity distribution service provider for Beirut Municipality and Bekaa Valley, 100 per cent of businesses enjoy access to electricity, although this comes from various sources, including backup generators. No data were available on access to affordable finance or on the COVID-19-induced business failure rate, and those measures were therefore not used in the scoring.

Overall, for indicator RPI 1-4, Beirut was given a score of B, indicating that business productivity in Beirut is similar to the productivity levels for the country as a whole. In addition, all businesses enjoy access to electricity via a combination of access to the public electric grid and to privately-operated backup generators.

B. Resilience of the local labour market

The resilience of the local labour market was assessed using three resilience performance indicators, namely labour market flexibility (RPI 2-1), labour mobility (RPI 2-2), and social protection of labour (RPI 2-3). Those indicators are used to assess the capacity of the local labour market to adjust to changes in economic activities and reallocate labour while minimizing unemployment. Figure 4 provides an overview of the resilience of the local labour market in Beirut as reflected in the scores given for each indicator in this resilience area.

Figure 4. Local labour market performance indicators



Source: Author.

Table 5. Labour market flexibility

RPI 2-1: Labour market flexibility		B
Employment diversity	9.40% according to the Herfindahl-Hirschman Index; female labour force participation rate: 30.50%	C
Population/employment ratio	Nationally: 3.04; city level: 2.66	A
COVID-19-induced unemployment	Not applicable	
COVID-19-induced business failure rate	Not applicable	

Source: Author.

The first performance indicator assessed is RPI 2-1: Labour market flexibility, which includes employment diversity, the population to employment ratio and COVID-19-induced unemployment. Table 5 shows the values associated with those measures and their corresponding scores. The overall score for RPI 2-1 is indicated in bold.

Employment diversity was assessed using the Herfindahl-Hirschman Index. In this context, the Index provides insights into labour concentration by economic sector. Unfortunately, city level data were unavailable and national level data collected within the context of the Labour Force and Household Living Conditions Survey 2018-2019 were used as a proxy. It should be underscored that women comprised only 30.5 per cent of the total labour force in Lebanon in 2018, including in the context of both formal and informal employment. Moreover, according to the aforementioned survey, women remain underrepresented in agriculture and fishing, manufacturing, construction, the wholesale and retail trade, the repair of

motor vehicles, transportation and storage, accommodation and food service activities, and information and communications. Beirut is therefore characterized by significant gender inequality in employment. The population to employment ratio measure for the city was compared with the ratio for the country as a whole on the basis of data collected within the context of the Labour Force and Household Living Conditions Survey 2018-2019. No data were available on COVID-19-induced unemployment and that measure was therefore not used in the scoring.

Overall, for indicator RPI 2-1, Beirut was given a score of B, indicating that the city is characterized by low labour concentration by sector, and that the population to employment ratio is relatively low and lower than the population to employment ratio for Lebanon as a whole.

The second performance indicator in this resilience area is RPI 2-2: Labour mobility, which includes four measures, namely occupational labour mobility, the availability of worker (re) training programmes, geographic labour mobility and the proportion of household budgets spent on rental housing. Table 6 shows the values associated with those measures and their corresponding scores. The overall score for RPI 2-2 is indicated in bold.

No data were available on occupational labour mobility and that measure was therefore not used in the scoring. The availability of worker (re)training programmes is a qualitative measure that was scored on the basis of discussions held in a focus group meeting with subject matter experts that took place online on 18 February 2021. The geographic labour mobility measure was not included in the scoring as the score used in the diagnostics tool was not representative of the situation in Beirut. Indeed, although there is a very high commuter rate in Beirut, workers commute over longer distances due to the city's inadequate transport infrastructure. The average proportion

of a household budgets spent on rental housing was calculated by dividing the average rental expense by average household income. Data on income was collected within the context of the Labour Force and Household Living Conditions Survey 2018-2019 and the figure for average rental expense was taken from the Global Property Guide for the year 2019.[23]

Overall, for indicator RPI 2-2, Beirut was given a score of D, indicating that the city is characterized by (re)training programmes with medium capacity that cover numerous occupations across many sectors of the economy. The score also reflects the very high cost of rental housing in the city.

The third performance indicator is RPI 2-3: Social protection of labour, and includes measures for the unemployment rate, the proportion of the unemployed receiving unemployment benefits, the informal employment rate, and city expenditure on social protection. Table 7 shows the values associated with those measures and their corresponding scores. The overall score for RPI 2-3 is indicated in bold.

Table 6. Labour mobility

RPI 2-2: Labour mobility		D
Occupational labour mobility	Not applicable	
Availability of worker (re)training programmes	Numerous (re)training programmes, rated at medium capacity in this analysis, have been launched, including for many occupations across sectors	C
Geographic labour mobility	Not applicable	
Proportion of household budgets spent on rental housing	140.52%	F

Source: Author.

Table 7. Social protection of labour

RPI 2-3: Social protection of labour		C+
Unemployment rate	13.8%	C
Unemployed receiving unemployment benefits	0.0%	F
Informal employment rate	34.0%	B
City expenditure on social protection	Not applicable	

Source: Author.

The unemployment rate is calculated by dividing the number of unemployed individuals (persons without work, available for work and seeking work during the reference period) by the number of individuals currently employed in the labour force; this is not the typical way to measure the unemployment rate. Both values were calculated on the basis of data collected within the context of the Labour Force and Household Living Conditions Survey 2018-2019. It should be noted that the female unemployment rate is 16.8 per cent at the national level: higher than the male unemployment rate, which stands at 11.1 per cent. No unemployment benefits are provided to unemployed individuals in Beirut. The informal employment rate was calculated by assessing employment in the informal economy as a percentage of total non-agricultural employment. As there is no

agricultural employment in Beirut, total non-agricultural employment is equivalent to total employment. The share of the informal sector in total city employment was calculated on the basis of data collected within the context of the Labour Force and Household Living Conditions Survey 2018-2019. No data were available on city expenditure on social protection and that measure was therefore not used in the scoring.

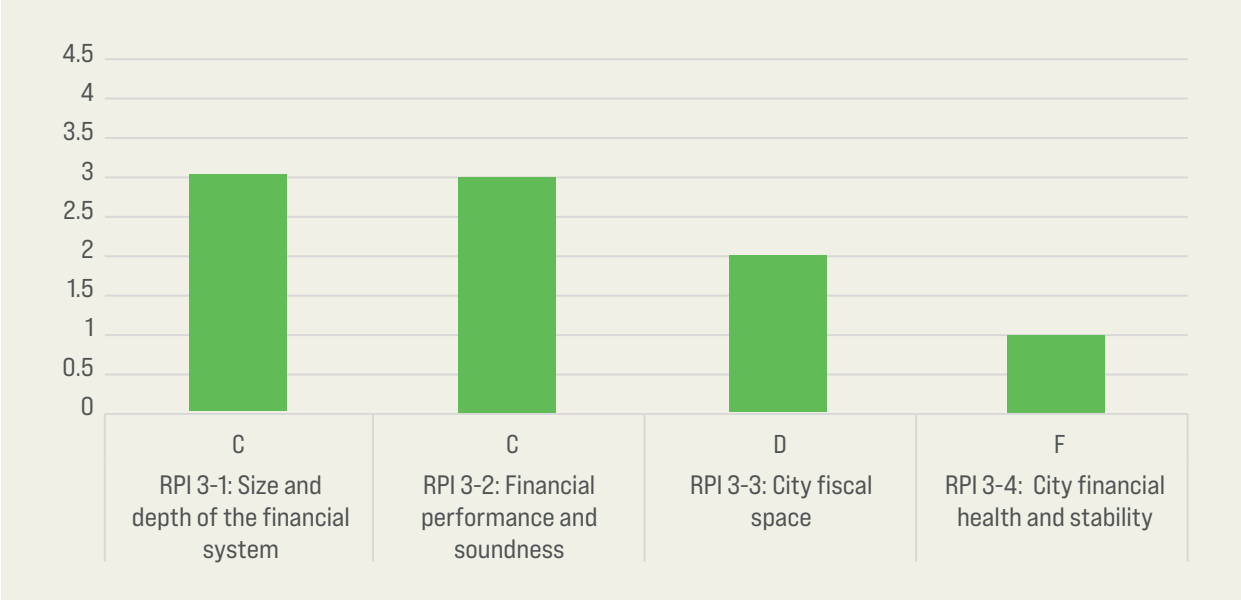
Overall, for indicator RPI 2-3, Beirut was given a score of C+, reflecting the fact that the city has an average unemployment rate, no benefit schemes that provide financial assistance to unemployed individuals, and a low informal employment rate as a proportion of city employment.

C. Resilience of the local financial system

The resilience of the local financial system is assessed by means of four resilience performance indicators, namely size and depth of the financial system (RPI 3-1), financial performance and soundness (RPI 3-2), city fiscal space (RPI 3-3), and city financial health and stability (RPI 3-4). This resilience area centres on the capacity of the local financial system to maintain an adequate and continuous supply of finance to economic activities and the availability of appropriate financial instruments. Figure 5 provides an overview of the performance of the local financial system in Beirut as reflected in the scores given for each indicator in this resilience area.

The first performance indicator in this resilience area is RPI 3-1: Size and depth of the financial system, which includes four measures, namely financial institutions per 100,000 inhabitants, the proportion of the population with a bank account, the percentage of the adult population with a registered digital finance account, and the market share of financial institutions offering affordable finance for start-ups and innovative business initiatives. Table 8 shows the values associated with those measures and their corresponding scores. The overall score for RPI 3-1 is indicated in bold.

Figure 5. Local financial system performance indicators



Source: Author.

Table 8. Size and depth of the financial system

RPI 3-1: Size and depth of the financial system		C
Financial institutions per 100,000 inhabitants	7.34	A
Proportion of the population with a bank account	55.20%	C
Percentage of the adult population with a registered digital finance account	Not applicable	
Market share of financial institutions offering affordable finance for start-ups and innovative business initiatives	Limited market share: there are few investors (mostly belonging to the same category of investor) and few types of finance are available for start-ups and innovative businesses	D

Source: Author.

Table 9. Financial performance and soundness

RPI 3-2: Financial performance and soundness		C
Interest rate spread	1.80	B
Non-performing loans rate	15.90%	C
Sectoral distribution of loans	Not applicable	
Change in the non-performing loans rate and percentage of loans restructured due to the COVID-19 pandemic	20.10%	D

Source: Author.

The number of financial institutions per 100,000 inhabitants is calculated by dividing the number of bank branches in Beirut per 100,000 inhabitants by the total number of bank branches in Lebanon per 100,000 inhabitants. In other words, this measure reflects the quotient of financial institutions in the city to those in the country as a whole. The figures were taken from Lebanon This Week, Issue 669, published by the Byblos Bank Economic Research and Analysis Department.[24] The proportion of the population with a bank account was calculated on the basis of data for the year 2017 provided by the World Bank. Data on the percentage of the adult population with a registered digital finance account were unavailable and were therefore not used in the scoring. Finally, the market share of financial institutions offering affordable finance for start-ups and innovative business initiatives was scored in a qualitative manner on the basis of discussions held on 19 February 2021, as quantitative data on that measure were unavailable.

Overall, for indicator RPI 3-1, Beirut was given a score of C, reflecting the fact that the city has more financial institutions per 100,000 inhabitants that the national average, an average share of the population with a bank account, and a limited market share for financial institutions offering affordable finance.

The second performance indicator in this resilience area is RPI 3-2: Financial performance and soundness, which includes four measures, namely interest rate spread, the non-performing loans rate, sectoral distribution of loans, and the change in the non-performing loans rate

and percentage of loans restructured due to the COVID-19 pandemic. Table 9 shows the values associated with those measures and their corresponding scores. The overall score for RPI 3-2 is indicated in bold.

The interest rate spread was calculated by subtracting the average rate paid on deposits at commercial banks from the average discount loans rate offered by commercial banks in 2019. Relevant data were provided by the Banque du Liban, the country's central bank. The non-performing loans rate was calculated by the World Bank for the year 2019. Data for the sectoral distribution of loans to total loans measure were unavailable and were therefore not used in the scoring. Finally, the change in the non-performing loans rate due to the COVID-19 pandemic was calculated on the basis of a proxy, namely the non-performing loans rate for the year 2020.[25] Data on the percentage of loans restructured were unavailable and were therefore not used in the calculations.

Overall, for indicator RPI 3-2, Beirut was given a score of C, reflecting the fact that the city has a low to medium interest rate spread and a medium to high non-performing loans rate, and also reflecting the significant increase in the non-performing loans rate that occurred during the COVID-19 pandemic.

The third performance indicator in this resilience area is RPI 3-3: City fiscal space, which includes four measures, namely city revenue diversity, the share of income inelastic revenues as a percentage of own source revenues, financial flexibility and fiscal flexibility. Table 10 shows the values associated with those measures and their corresponding scores. The overall score for RPI 3-3 is indicated in bold.

Data on city revenue diversity, the share of income inelastic revenues as a percentage of own source revenues, and financial flexibility were unavailable and those three measures were therefore not used in the scoring. Fiscal flexibility was scored in a qualitative manner on the basis of discussions held on 18 and 19 February 2021.

Overall, for indicator RPI 3-3, Beirut was given a D score. This reflects the fact that the city has limited fiscal capacity as it enjoys only limited legal capacity to set tax rates and establish fees within the city.

The fourth performance indicator in this resilience area is RPI 3-4: City financial health and stability, which includes four measures, namely the city share of the local financial market, the city credit rating, the city audit performance, and the impact of the COVID-19 pandemic on city financial health and stability. Table 11 shows the values associated with those measures and their corresponding scores. The overall score for RPI 3-4 is indicated in bold.

Table 10. City fiscal space

RPI 3-3: City fiscal space		D
City revenue diversity	Not applicable	
Share of income inelastic revenues as a percentage of own source revenues	Not applicable	
Financial flexibility	Not applicable	
Fiscal flexibility	Weak fiscal capacity: the city has limited legal capacity to establish tax rates and fees as these must be approved by the national Government	D

Source: Author.

Table 11. City financial health and stability

RPI 3-4: City financial health and stability		F
City share of the local financial market	0.%	F
City credit rating	Not applicable	
City audit performance	More than one adverse opinion	F
Impact of the COVID-19 pandemic on city financial health and stability	Not applicable	

Source: Author.

The city share of the local financial market is zero as Beirut does not issue municipal bonds. The city credit rating measure is not applicable to the city of Beirut and is therefore not included in the scoring. City audit performance is a qualitative measure that was scored on the basis of discussions held on 18 February 2021. Finally, data on the impact of the COVID-19 pandemic on the city's financial health and stability were unavailable and the measure was therefore not used in the scoring.

Overall, for indicator RPI 3-4, Beirut was given an F score. This reflects the fact that the city of Beirut has no share in the local financial market and that more than one adverse opinion has been issued in the context of city audits.

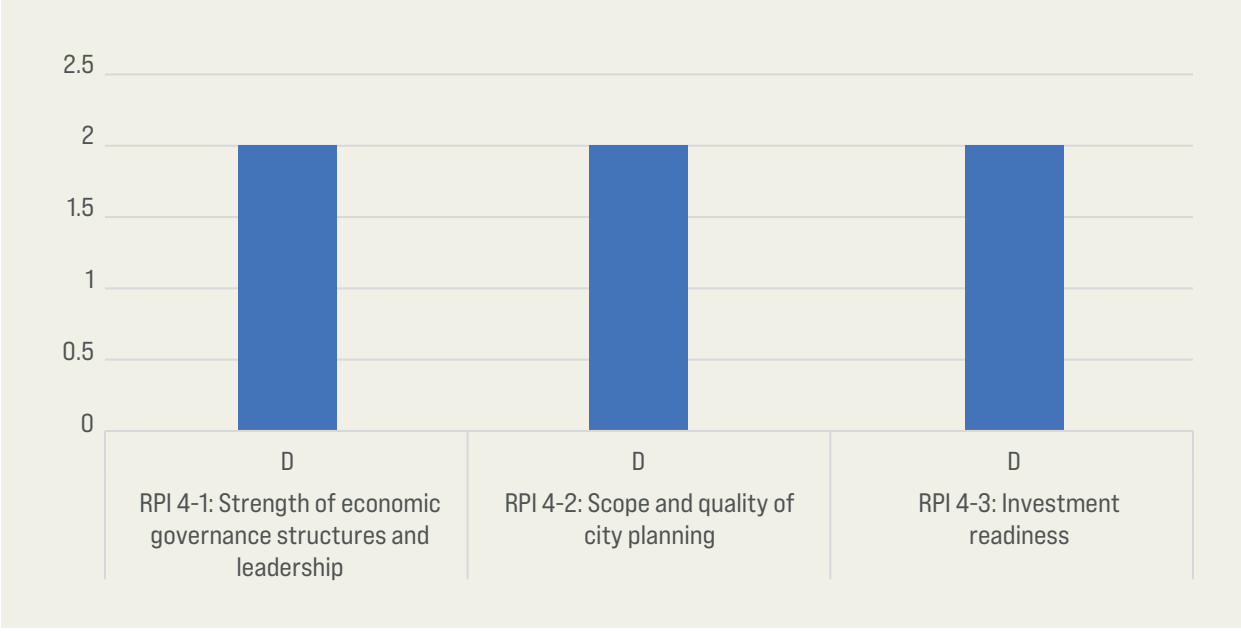
D. Resilience of economic governance

The resilience of the economic governance is assessed using three resilience performance indicators, namely the strength of economic governance structures and leadership (RPI 4-1), the scope and quality of city planning (RPI 4-2), and investment readiness (RPI 4-3). This areas of resilience analyses the effectiveness of local economic governance in terms of economic planning, allocating and mobilizing

resources, and coordinating public and private sector economic activity. Figure 6 provides an overview of the resilience of economic governance in Beirut as reflected in the scores given for each indicator in this resilience area.

The first performance indicator in this resilience area is RPI 4-1: Strength of economic governance structures and leadership, which includes three measures, namely inclusiveness of economic governance, public participation in economic governance, and access to local public information on economic issues. Table 12 provides an analysis of those measures and their corresponding scores. The overall score for RPI 4-1 is indicated in bold.

Figure 6. Economic governance performance indicators



Source: Author.

Table 12. Strength of economic governance structures and leadership

RPI 4-1: Strength of economic governance structures and leadership		D
Inclusiveness of economic governance	City economic governance structures have few or no non-government representatives; participation is sporadic or ad hoc	F
Public participation in economic governance	Low degree of public involvement (very few consultations or meetings and no dedicated forums); public feedback is rarely sought or incorporated into policy	D
Access to local public information on economic issues	Information is made available on a limited number of relevant economic issues, is of low quality and is provided irregularly	D

Source: Author.

The first two measures were scored on the basis of discussions held on 18 February 2021 while the third measure was scored on the basis of discussions held on both 18 and 19 February 2021.

Overall, for indicator RPI 4-1, Beirut was given a D score. This reflects the fact that Beirut has few or no non-government representatives in its economic governance structures. The city also has a low degree of public involvement in economic governance and public feedback is rarely sought or incorporated into policy. Moreover, the information presented on the city covers only a limited number of relevant economic issues, is typically of low quality and is provided on an irregular basis.

The second performance indicator in this resilience area is RPI 4-2: Scope and quality of city planning, which includes four measures, namely the comprehensiveness of city planning systems, the integration of crisis management provisions in planning and budgeting, the application of a vulnerability assessment methodology, and the extent of access to and application of digital technologies. Table 13 provides an analysis of those measures and their corresponding scores. The overall score for RPI 4-2 is indicated in bold.

The first three measures were scored on the basis of discussions held on 18 February 2021 while the fourth measure was scored on the basis of discussions held on 18 and 19 February 2021.

Overall, for indicator RPI 4-2, Beirut was given a D score.

The third performance indicator in this resilience area is RPI 4-3: Investment readiness, which includes four measures, namely strategic planning and resilience proofing of investment projects, access to public land, the intensity of regulation/administrative burdens and the quality of the investment-enabling environment. Table 14 provides an analysis of those measures and their corresponding scores. The overall score for RPI 4-3 is indicated in bold.

Table 13. Scope and quality of city planning

RPI 4-2: Scope and quality of city planning		D
Comprehensiveness of city planning systems	Limited planning systems in place: plans only drawn up on an annual basis and are unrelated to any other planning mechanisms	F
Integration of crisis management provisions in planning and budgeting	Crises management provisions address few issues and are ineffectively mainstreamed into relevant plans	D
Application of a vulnerability assessment methodology	No coherent vulnerability assessment methodology has been formulated; assessments take place rarely, if at all; relevant actions rarely incorporated into city plans	D
Extent of access to and application of digital technologies	Internet of Things and big data are underdeveloped and are being used only on a pilot basis and on a very modest scale by a limited number of services	D

Source: Author.

Table 14. Investment readiness

RPI 4-3: Investment readiness		D
Strategic planning and resilience proofing of investment projects	Investment projects are not derived from approved medium-term development plans, if they exist at all; no provisions have been made for mobilizing external finance, and project profiles, if they exist, do not address resilience issues	F
Access to public land	The city has limited autonomy to decide over the use and (re)allocation of land resources (higher-level government approval is required for most actions); the percentage of vacant/unutilized public land remains low	D
Intensity of regulation/administrative burdens	Business regulation processes are cumbersome; registration of a business takes considerable time and effort to complete	D
Quality of the investment-enabling environment	Little investment data is available and only a very limited number of dedicated financial and non-financial facilities have been established to promote investment	D

Source: Author.

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The first two measures were scored on the basis of discussions held on 18 February 2021 while the second two measures was scored on the basis of discussions held on 19 February 2021.

Overall, for indicator RPI 4-3, Beirut was given a D score.

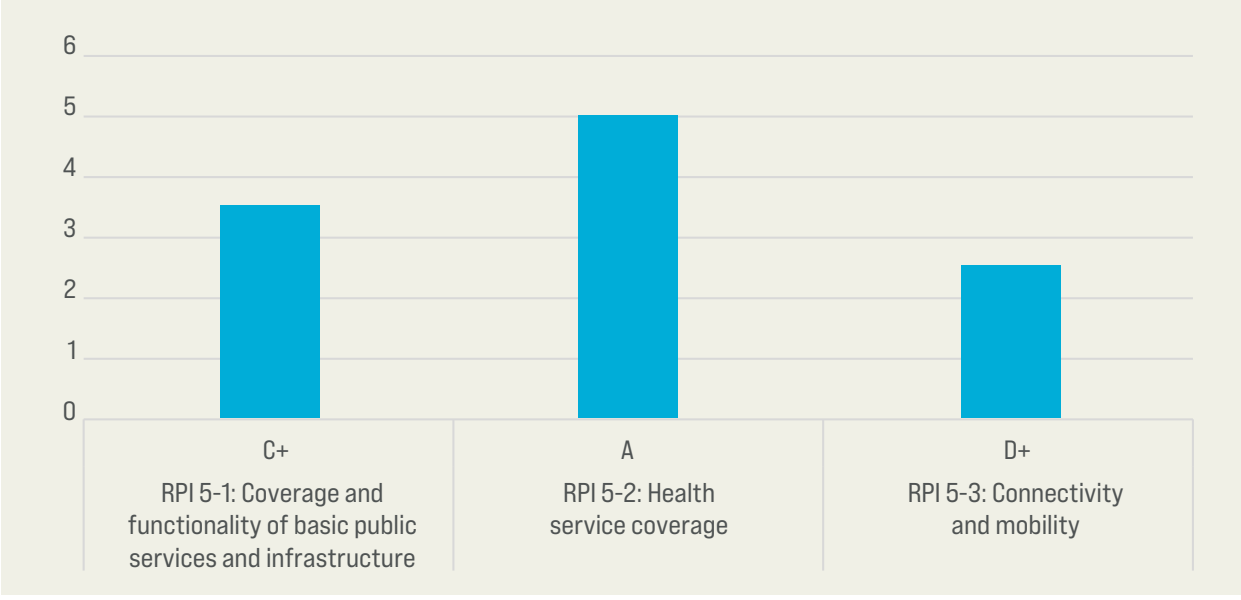
E. Resilience of basic service infrastructure and connectivity

The resilience of basic service infrastructure and connectivity is assessed on the basis of three resilience performance indicators, namely coverage and functionality of basic public

services and infrastructure (RPI 5-1), health service coverage (RPI 5-2), and connectivity and mobility (RPI 5-3). This area of resilience analyses the capacity of basic service infrastructure and connectivity systems to facilitate the operation of the other four urban economy resilience components in times of stress. Figure 7 provides an overview of the resilience of basic service infrastructure and connectivity in Beirut, as reflected in the scores given for each indicator in this resilience area.

The first performance indicator in this resilience area is RPI 5-1: Coverage and functionality of basic public services and infrastructure, which includes four measures, namely public open space per 1,000 inhabitants, the average number and length of interruptions per customer per year to the electricity network, the percentage of the population with access to water and sanitation services, and the percentage of the population with regular municipal solid waste collection. Table 15 shows the values associated with those measures and their corresponding scores. The overall score for RPI 5-1 is indicated in bold.

Figure 7. Basic service infrastructure and connectivity performance indicators



Source: Author.

Table 15. Coverage and functionality of basic public services and infrastructure

RPI 5-1: Coverage and functionality of basic public services and infrastructure		C+
Public open space per 1,000 inhabitants	0.00025	F
Average number and length of interruptions per customer per year to the electricity network.	3.84	C
Percentage of population with access to water and sanitation services	100%	A
Percentage of population with regular municipal solid waste collection	93%	B

Source: Author.

Public open space per 1,000 inhabitants was calculated by dividing the public open space[26] in Beirut by the population of the city, as established by the Labour Force and Household Living Conditions Survey 2018-2019. That figure was then multiplied by 1,000 to generate the per 1,000 inhabitants figure. The average number and length of interruptions per customer per year to the electricity network was calculated by multiplying the number of outages (total number of interruptions/distinct customers) by the length of outages (sum of interruptions duration/ total number of interruptions) in 2019. These interruptions stem from medium-and low-voltage faults within the distribution network in Beirut.[27] It should be noted that the figures obtained understate the actual number of interruptions because they do not take into account planned outages caused by fuel shortages at the power plants generating electricity for the city. The percentage of the population with access to water and sanitation services was calculated by dividing the number of residents with access to sanitation services by the total population of the city (those whose primary residence is in Beirut), as established by the Labour Force and Household Living Conditions Survey 2018-2019.[28] Finally, the percentage of the population with regular municipal solid waste collection was calculated by adding the number of residents who dump their waste in containers inside their residential buildings or close to their residence. That figure was then divided by the total number of residents. All relevant figures were drawn from data collected in the context of the Labour Force and Household Living Conditions Survey 2018-2019.

Overall, for indicator RPI 5-1, Beirut was given a C+ score, reflecting the fact that Beirut has less than one acre of public land per 1,000 inhabitants, suffers from relatively frequent interruptions to its electricity supply for relatively short periods, offers universal access to sanitation and running water, and provides most of its population with access to municipal solid waste collection.

Table 16. Health service coverage

RPI 5-2: Health service coverage		A
City quotient of health workers per 10 000 people	381.00	A
City quotient of hospital beds per 10 000 people	218.59	A
City expenditure on health	Not applicable	

Source: Author.

Table 17. Connectivity and mobility

RPI 5-3: Connectivity and mobility		D+
Continuity of telephone and Internet operations	2.48/5	C
Average commuting travel time disaggregated by transport mode	50.525	A
Total coverage of all superior modes of public transport	0	F
Walkability and cyclability	75-89% walkability and 0% bicycle lanes	D

Source: Author.

The second performance indicator in this resilience area is RPI 5-2: Health service coverage, which includes three measures, namely city quotient of health workers per 10,000 population, city quotient of hospital beds per 10,000 population, and city expenditure on health. Table 16 shows the values associated with those measures and their corresponding scores. The overall score for RPI 5-2 is indicated in bold.

The city quotient of health workers per 10,000 population was calculated by adding together the number of physicians and nurses in the city of Beirut[29] and then dividing that figure by the total population of the city. The number of health workers per 10,000 population was then computed. The same measure was computed for Lebanon. The quotient was computed by dividing the figure obtained for the city by the figure obtained for the country as a whole. The number of midwives was not used as figures for that specific measure were unavailable and are not particularly significant in Lebanon. Here, it is interesting to note that 79.5 per cent of all nurses in Lebanon are female.[30] The city quotient of hospital beds per 10,000 people was calculated by dividing the number of private hospital beds per 10,000 people in Beirut by the number of private hospital beds per 10,000 people in Lebanon as a whole. Unfortunately, data on the total number of hospital beds (including beds in public hospitals) were unavailable and data on private hospitals were used as a proxy. The number of hospital beds was calculated by ascertaining the number of hospital beds available in each individual hospital (using data from 2007) and then adding together the figures obtained for each hospital.[31] No data were available on city expenditure on health, and that measure was therefore not used in the scoring.

Overall, for indicator RPI 5-2, Beirut was given a score of A, reflecting the fact that the per capita numbers of health workers and hospital beds are significantly higher than the national average.

The third performance indicator in this resilience area is RPI 5-3: Connectivity and mobility, which includes four measures, namely the continuity of telephone and Internet operations, average commuting travel time disaggregated by transport mode, the total coverage of all superior modes of public transport, and the walkability and cyclability of the city. Table 17 shows the values associated with those measures and their corresponding scores. The overall score for RPI 5-3 is indicated in bold.

Data obtained by means of a survey of Internet users served as a proxy for assessing the continuity of telephone and Internet operations. The responses for all Internet providers in Lebanon were added together. Next, the number of responses regarding the service offered by each provider was divided by the total number of responses and multiplied by the rating of each specific provider.[32] Finally, all the figures were added together to obtain a score greater than five. The average commuting travel time disaggregated by transport mode was obtained by calculating the average duration of car, bus, taxi-service and minibus transportation within municipal Beirut.[33] The total coverage of all superior modes of public transport was measured as zero as the city is not covered by any superior modes. Finally, walkability and cyclability was assessed qualitatively as there are no accurate data available in that regard.[34]

Overall, for indicator RPI 5-3, Beirut was given a score of D+, reflecting the fact that the city has relatively frequent disruptions for relatively short periods to its Internet connectivity, short commuting times and no public transportation systems. The score also reflects the fact that there are no bicycle lanes in Beirut and only 75 to 89 per cent of the city's streets have sidewalks.

Conclusions and recommendations

The results of the performance diagnosis underscore the weak resilience of the city of Beirut, particularly in terms of its economic governance mechanisms. Other resilience areas are characterized as moderate to weak with a degree of variation in the strength of key indicators. An overview of the relative weaknesses and strengths of the city in the five resilience areas is provided in figure I in Chapter 1 of the present report.

A. Resilience of the local business environment (RA1)

The performance diagnosis reveals that Beirut demonstrates only moderate to weak resilience in connection with a number of business performance indicators. The city has strong to moderate local economy diversity (RPI 1-1) and was given a B score. This indicates that the city of Beirut has a well-diversified economy in terms of the sectorial distribution of the industries, limited informal employment and a low share of public economy employment in total city employment. Beirut also demonstrates strong to moderate performance in terms of the productivity, economic, and financial capacity indicator (RPI 1-4) and was again given a B score. This indicates that business productivity in Beirut is almost the same as business productivity in Lebanon as a whole, with all businesses enjoying access to electricity. The low score (D score) given for the openness and external market integration indicator (RPI 1-2) shows that Beirut remains highly dependent on imports, making it particularly vulnerable to external shocks, as was the case in 2019 and 2020, when the devaluation of the Lebanese pound led to a sharp reduction in total imports. As for entrepreneurship and innovation (RPI 1-3), digital access by businesses remains relatively limited while the ecosystem for innovation provides only limited support to entrepreneurial initiatives. The performance of Beirut in connection with that indicator was judged as weak and the city was given a score of only D+.

In order to address the vulnerability of the city's economy to trade shocks, the local and national governments should:

- Invest in the knowledge economy.
- Enhance the capacity of the city to export services.
- Create a business development hub at the municipal level.

Given the comparative advantage of Beirut in terms of the density of hospitals and universities compared with other areas in Lebanon.

- Priority should be given to the strengthening the resilience of the health-care and university sectors.

Those sectors have a strong track record in terms of their capacity to attract patients and students from across Lebanon and the wider Arab region to the city. Furthermore, to address the vulnerability of Beirut resulting from its low economic diversity, both the local and national authorities should:

- Take steps to increase the female labour force participation rate.

That goal could be achieved, inter alia, by providing vocational training to women and girls and subsidized childcare services.

Although businesses enjoy access to electricity, this is achieved at high cost as privately-owned backup generators must be used to cope with the frequent power interruptions that occur in the city. Those generators are inefficient, highly polluting and costly to operate. To address those challenges, the national Government should:

- Amend relevant legislation on the generation and distribution of electrical power in Lebanon.

That legislative step is a prerequisite for mobilizing substantial municipal investments in power generation and would pave the way for:

- The construction of a municipal gas-fired power plant, such as the power

plant proposed by Siemens AG to the Lebanese Government in August 2020.

The construction of a new power plant would have numerous benefits for both businesses and residents, including the provision of a reliable power supply, cost savings for those who would no longer need to operate private generators and a reduction in airborne pollution.

Moreover, the challenges facing entrepreneurs and innovators in Beirut could be partially alleviated by:

- Opening up the city's economy so that it becomes a more attractive destination for investments from abroad.

A more open economy would facilitate efforts to attract investments from foreign investors. Support to entrepreneurship could be further enhanced by:

- Expanding the role of the Beirut Digital District.

The Beirut Digital District has yet to reach its full potential, in large part because of the ongoing economic crisis and the COVID-19 pandemic. Municipal support, including rent subsidization, tax relief, and the streamlining of bureaucratic procedures for businesses could help to expand the role of the district and, potentially, provide a blueprint for the development of similar initiatives in other parts of the city.

B. Resilience of the local labour market (RA2)

The performance diagnosis reveals that Beirut demonstrates moderate resilience in connection with a number of labour market indicators. The city enjoys moderate to strong labour market flexibility (RPI 2-1) for which it was given a B score. That score reflects the fact that Beirut has a flexible labour market and well-diversified employment in terms of the industries present within the city. Employment is not particularly well-diversified in terms of gender, however. Indeed, as is the case in other parts of the country, Beirut is characterized by a low female labour force participation rate. In terms of labour mobility (RPI 2-2) Beirut performs weakly and was given a D score. This reflects the fact that Beirut is characterized by weak labour mobility, in part due to the medium capacity of (re) training programmes for workers and also because of the high cost of rental accommodation for workers in Beirut. Beirut performs moderately well in terms of the social protection of labour indicator (RPI 2-3), for which it was given a C+ score. This reflects the average to low unemployment rate in Beirut, its relatively low informal employment rate, but also the fact that the unemployed in the city receive no unemployment benefits.

In order to enhance labour mobility across sectors, the Municipality of Beirut is encouraged to:

- Establish worker (re)training programmes, including programmes that are specifically designed for women.

Of special interest are programmes related to:

- The knowledge economy, digital literacy, financial literacy and gender sensitivity.

Those programmes could pool resources and draw on expertise from the Ministry of Labour, the International Labor Organization and academic institutions. An export platform to market the products of female-owned businesses should also be established with a view enhancing female labour force participation.

Moreover, traffic congestion at the northern, eastern, and southern entry points to Beirut impose substantial pecuniary and non-pecuniary burdens on workers commuting to work inside the city. Those burdens could be substantially reduced if the Municipality of Beirut and the Government:

- Limited passenger car entry into the city and established parking facilities and bus shuttle services for commuters entering Beirut.

Informality in labour employment could also be reduced by having the local and national authorities:

- Provide financial incentives to employers who hire workers on a formal basis.

That goal could be achieved by offering tax incentives to employers.

C. Resilience of the local financial system (RA3)

The performance diagnosis reveals that Beirut demonstrates moderate to weak resilience in this area. The city performs moderately well in terms of the size and depth of its financial system (RPI 3-1), for which it was given a C score. This reflects the fact that Beirut has a relatively large financial system and relatively good access to financial institutions relative to the situation in other parts of the country. It also reflects the fact that a high proportion of the population has a bank account. The market share of financial institutions offering affordable finance remains limited, however. Beirut also performs moderately well on the financial performance and soundness indicator (RPI 3-2), for which it was also given a C score. This reflects the fact that the city of Beirut enjoys a low interest rate spread, but that it suffers from a medium to high non-performing loans rate, which has increased significantly as a result of steps taken to combat the COVID-19 pandemic. As for the city fiscal space indicator (RPI 3-2), Beirut performs weakly and was given a D score. In particular, Beirut suffers from weak fiscal flexibility and capacity as it has limited power to set taxes. Beirut also performs very weakly in terms of its financial health and stability (RPI 3-4) and was given an F score for that indicator. That weakness stems from the fact that the city does not participate in local financial markets. The city audit performance in also very weak and more than one adverse audit opinion has been issued. Although the number of financial institutions operating in Beirut is higher than the national average, the financialization of the economy remains somewhat limited. Indeed, there is considerable scope for increasing the number of bank accounts per 100 inhabitants. Nonetheless, the Lebanese authorities increased financial vulnerability during the COVID-19 pandemic by encouraging banks to close down accounts of small depositors. That action, which backfired, was intended to alleviate the impact of a run on banks that started in 2019 at the beginning of the current Lebanese economic crisis. As a result, many of the gains in terms of financial deepening that had been achieved since the end of civil war in 1990 were reversed during the COVID-19 pandemic. To remedy that situation, the Lebanese Central Bank, as a first step, is encouraged to::

- Reverse recently-enacted measures that limit the number of bank accounts per capita, and encourage the restructuring of the Lebanese banking sector.

Another important step to be taken is:

- The adoption of appropriate legislation on microfinance institutions.

Microfinance institutions have a proven track record of spurring economic growth and employment in developing countries. Addressing the gap in the Lebanese financial landscape posed by inadequate legislation on those institutions will facilitate efforts to tap into the underused skills and talents of many individuals in Beirut, particularly among artisans and others who are self-employed.

The Ministry of Finance is encouraged to:

- Enforce compliance with deadlines on loan repayments and on the filing and payment of taxes.

The weakness of the city's fiscal capacity, which, to a large extend, stems from the centralization of financial decision-making could be alleviated by:

- The issuance of municipal bonds.

The issuance of municipal bonds would provide the city with a source of financing for targeted projects, many of which are unlikely to be financed by the national Government. It would also reduce the city's financial vulnerability by decoupling revenue collection

at the central and local levels. Another step to improve the city's fiscal capacity could be:

- The adoption of municipal regulations to increase the taxes due on unoccupied apartments.

Targeted tax increases are likely to increase the supply of rental units in the city and revitalize the rental market.

D. Resilience of economic governance (RA4)

The performance diagnosis reveals that Beirut demonstrates weak resilience in this area. The city performs weakly in terms of the strength of economic governance and leadership (RPI 4-1), for which it was given a D score. This is due to the fact that the city's economic governance structures comprise few or no non-governmental representatives and public involvement in decision-making is low. In addition, access to public information on economic issues is very limited, and the information that is available is issued on an irregular basis. In terms of the scope and quality of city planning (RPI 4-2), the city also performs weakly and was given a D score. Indeed, Beirut has so far failed to adopt a holistic planning system or a coherent vulnerability assessment mechanism. The city's crises management provisions are weak and it has yet to exploit the potential offered by the development of the Internet of Things and big data. Moreover, the city performs weakly in terms of its investment readiness (RPI 4-3), for which it received a D score. This indicates that the city's investment planning mechanisms and facilities for investment remain underdeveloped. In fact, Beirut has launched investment projects that do not comply with an approved medium-term development plan, has limited autonomy to decide on how land should be used, and has failed to reform the complex regulations that continue to place a heavy administrative burden on potential investors. The city provides little relevant data to investors and has put in place few mechanisms to facilitate investment. As a result, the investment-enabling environment remains very weak.

Weaknesses in economic governance is related to weak public participation in decision-making and inadequate access to timely and accurate data on the city's economic and social performance. That shortcoming could be alleviated by:

- The inception of deliberative democracy at the municipal level.

Whereby citizens would be consulted directly on important decisions by means of small focus groups of citizens with a range of opinions and expertise.

Improving access to public information could be achieved, first and foremost, by:

- Establishing a municipal data portal (a so-called "one-stop shop").

That portal would aggregate data provided by the Municipality and the Government, which would be updated on a regular basis and provided in a user-friendly format.

In order to address weaknesses in city planning and crisis preparedness, Beirut should, first and foremost,

- Establish planning and crisis response departments at the municipal level.

The planning department would be tasked with the integration of short-, medium-, and long-term planning into a coherent city vision to guide day-to-day municipal decision-making. The crisis response department would act as a focal point for all public and private entities that are typically called upon in crisis situations, such as in the aftermath of the Beirut port explosion, which occurred in 4 August 2020. Both departments would benefit from access and analysis of big data provided by remote sensors installed in various locations across the city.

Investment readiness in Beirut could be improved on two fronts. Firstly, the Government is advised to:

- Grant greater autonomy to the Municipality to make decisions on the use of publicly-owned land.

Increasing the power of the city to decide how publicly-owned land should be used is likely to increase investment opportunities and reduce the city's vulnerability to economic shocks. Secondly, the regulatory burden on investors could be reduced by:

- Establishing a "one-stop shop" for investors to facilitate their interactions with the local authorities and the central Government.

E. Resilience of basic service infrastructure and connectivity (RA5)

The performance diagnosis reveals that Beirut demonstrates strong to moderate resilience in this area. The city performs moderately well in terms of the coverage and functionality of basic public services and infrastructure (RPI 5-1), for which it was given a C+ score. This indicates that residents of Beirut enjoy universal access to water and sanitation services, good access to regular municipal solid water collection, but relatively frequent interruptions to the electricity supply. Access to public open space per 1,000 inhabitants is very low in Beirut, however. Beirut performs strongly in terms of health service coverage (RPI 5-2) for which it was given an A score, reflecting the fact that the number of medical doctors and nurses and the number of hospital beds in Beirut are both higher than the national average. Beirut performs weakly in terms of the connectivity and mobility indicator (RPI 5-3), however, reflecting challenges related to the continuity of the Internet network in Beirut. Furthermore, although commuting times for residents in Beirut are relatively short, the city has no public transportation system, no bicycle lanes and a significant proportion of the city's streets have no sidewalks.

As mentioned previously:

- The establishment of a municipal power plant.

Would enhance the city's infrastructure, thereby reducing the vulnerability of the business environment. That power plant could be integrated into the broader municipal power generation infrastructure, which should, moreover, incorporate small-scale renewable power generation facilities across the city, including, for example, solar-powered street lights.

Furthermore, as has been underscored by the recent COVID-19 pandemic, during which the city's hospitals were on several occasions overwhelmed by the number of patients needing hospital beds, the city's public health infrastructure falls far short of what is required. To address that infrastructure gap, urgent investments are needed in order to:

- Increase the capacity of city hospitals and clinics.

Finally, the substantial weaknesses in transportation infrastructure will require:

- The investment of significant financial resources, including within the context of public-private partnerships.

Particularly as the Lebanese Government no longer has adequate resources to finance major infrastructure initiatives. Those partnerships could be used to leverage the funds needed to establish or upgrade sidewalks, bicycle lanes, mass transit systems, including light rail, monorail, and bus services, and other key infrastructure.

Endnotes

1. Available at https://www.unescwa.org/events/validation-beirut-diagnostics-and-local-stakeholders-visioning.
2. Available at www.uncdf.org/article/6196/guiding-principles-and-practices-for-urban-economic-recovery-and-resilience#.X5_C7WGkn-c.twitter.
3. Available at https://unhabitat.org/sites/default/files/03/2021/global-compendium-of-practices-covid-19.pdf.
4. For further information, see the UNCDF report Building Urban Economic Resilience during and after Covid-19, Urban Economic Recovery and Resilience, available at https://urbaneconomicresilience.org/deliverables-resources/uncdf-urban-economic-recovery-and-resilience-diagnostic-and-planning-tool/. The tool is also available in Arabic on ESCWA Website at: https://www.unescwa.org/publications/economic-recovery-urban-resilience-diagnosis-planning-tool.
5. https://www.unescwa.org/events/validation-beirut-diagnostics-and-local-stakeholders-visioning.
6. For further information about the project, available at https://urbanresiliencehub.org/economicresilience/.
7. The findings of the Survey are available at http://www.cas.gov.lb/images/Publications/Labour20%Force20%and20%Household20%Living20%Conditions20%Survey2019-202018%.pdf.
8. Central Administration of Statistics, Gross Domestic Product: Fourth quarter of 2019. Available at http://www.cas.gov.lb/National20%Accounts/GDP_2019Q4.pdf.
9. Estimates based on the number of cars entering the city during daytime. Data provided by the Beirut Traffic Management Control Room.
10. Available at https://beirut.gov.lb/#/discover.
11. See, for example, Ellen Francis (Reuters), "Lebanese president signs tax, wage increase laws", 21 August 2017. Available at www.reuters.com/article/us-lebanon-wages-idUSKCN1B10XR.
12. World Bank, Beirut Rapid Damage and Needs Assessment (RDNA), August 2020. Available at www.worldbank.org/en/country/lebanon/publication/beirut-rapid-damage-and-needs-assessment-rdna-august2020-.
13. International Labour Organization, Facing Multiple Crises Rapid assessment of the impact of COVID-19 on vulnerable workers and small-scale enterprises in Lebanon (5 June 2020). Available at www.ilo.org/beirut/publications/WCMS_747070/lang--en/index.htm.
14. Central Administration of Statistics, Key Indicators. Available at www.cas.gov.lb/index.php/key-indicators-en.
15. Arabian Business, "Lebanon's inflation rate registers rare dip but still tops %133 in November", 23 December 2020. Available at https://www.arabianbusiness.com/politics-economics/-456350lebanons-inflation-rate-registers-rare-dip-but-still-tops-133-in-november#:~:text=Lebanon›s20%annual20%inflation20%rate20%slowed,of20%20136.8%percent20%in20%October.
16. For further information, see the Global Compendium on Practices on Local Economic and Financial Recovery. Available at https://unhabitat.org/sites/default/files/03/2021/global-compendium-of-practices-covid-19.pdf.
17. Office of the United Nations High Commissioner for Refugees, Lebanon, "UNHCR and Ministry of Public Health: new hospital expansions ready to receive hundreds of additional COVID-19 patients", 29 June 2020. Available at https://www.unhcr.org/lb/-13259unhcr-and-ministry-of-public-health-new-hospital-expansions-ready-to-receive-hundreds-of-additional-covid-19-patients.html.
18. Global Compendium on Practices on Local Economic and Financial Recovery.
19 . World Bank, Lebanon Reform, Recovery & Reconstruction Framework (3RF) (December, 2020). Available at https://documents1.worldbank.org/curated/en/948021607068524180/pdf/Lebanon-Reform-Recovery-and-Reconstruction-Framework3-RF.pdf.
20. Global Compendium on Practices on Local Economic and Financial Recovery.
21. The relevant data is available at https://brite.blominvestbank.com/.
22. The index is available at www.mobileconnectivityindex.com/#year=2019.
23. Available at https://www.globalpropertyguide.com/Middle-East/Lebanon/Price-History.
24. Available at http://www.blbc.be/lebanon-this-week.
25. Available at www.ceicdata.com/en/indicator/lebanon/non-performing-loans-ratio.
26. Figures for publicly-owned open space were provided by the Beirut Urban Lab at the American University of Beirut.
27. Those measures, obtained from KVA SAL, an electricity distribution service provider for Beirut Municipality and Bekaa Valley, do not take into account faults or outages at transmission or generation level.
28. For further details, see Central Administration of Statistics, Housing characteristics. Available at www.cas.gov.lb/index.php/housing-characteristics-en.
29. Data on the number of medical doctors in Beirut was provided by the Lebanese Order of Physicians for the year 2019. The number of doctors (per 1,000 people) in Lebanon as a whole is available in the World Bank collection of development indicators, compiled from officially recognized sources. Data on the number of nurses in Lebanon and Beirut was provided by the Lebanese Order of Nurses for the year 2019.

30. For further information, available at http://orderofnurses.org.lb/PDF/STATS2020EN.pdf.
31. Relevant data taken from: Walid Ammar, Health Beyond Politics (January 2009). Available at www.moph.gov.lb/en/view/3908/health-beyond-politics.
32. Relevant data in that regard are available at https://app.fing.com/internet/place/Lebanon/Beyrouth/Beirut.
33. Relevant data were taken from: Alex Anas and others, "Reducing Traffic Congestion in Beirut. An Empirical Analysis of Selected Policy Options", Policy Research Working Paper No. 8158 (World Bank, 2017) Available at https://openknowledge.worldbank.org/bitstream/handle/27966/10986/WPS8158.pdf?sequence=1&isAllowed=y.
34. The data were assessed by an expert from Beirut Urban Lab at the American University of Beirut.

This report, entitled "Performance diagnosis of urban economic recovery and resilience: The case of Beirut" is a result of the United Nations Development Account "Building Urban Economic Resilience during and after COVID-19" project implemented in 16 cities around the globe. Those cities included three in the Arab region, namely Alexandria, Beirut and Kuwait City. Findings on the resilience performance results of Beirut based on the methodological application of the diagnostic and planning tool (DPT) developed as part of the project are discussed here.

This report analyses the performance of the city of Beirut in the five local resilience areas outlined in the DPT, namely the business environment, labour market, financial system, economic governance and basic service infrastructure and connectivity. This document also aims to inform and guide the development of an economic resilience-building plan for the city. According to the DPT, the assessment of the city of Beirut reveals overall weak resilience performance: the business environment showed moderate to weak resilience; labour market performance was moderate; the financial system was considered moderate to weak and economic governance was also weak. Economic governance was assessed as the main area of weakness in Beirut.

This report proposes solutions that can be used to formulate a practical framework for the creation of more resilient cities post COVID-19. A more resilient Beirut is particularly important, given its role as the capital of Lebanon and the economic, political and financial centre of the country.

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