

Globalization, Dutch Disease, and Vulnerability to External Shocks in a Small Open Economy

The Case of Lebanon in 1916 and 2019

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Abstract

This paper investigates the similarities between the economy of 1912 Mount Lebanon on the eve of the famine of 1916 and the economy of 2004 Lebanon that set the stage for the major economic and social crisis of 2019. A simple general equilibrium simulation shows that, as long as the Lebanese economy remains reliant on foreign inflows, crises will persist, with different manifestations. Regardless of the period considered, foreign inflows increase domestic prices and induce real appreciation. Low productive capacities and insufficient job creation lead to high emigration. Emigration increases the reliance on foreign inflows, which in turn increase domestic prices and reduce competitiveness,

hence triggering further emigration and further reliance on foreign inflows. Income and prices increase, but exports decline, and growth remains volatile. The interruption of the flows of capital and goods and the impossibility to migrate due to the First World War drove Lebanon into starvation in 1916. The interruption of inflows of capital in 2019 led to a major crisis and massive outmigration, as predicted through the simulations based on the structure of the Lebanese economy in 2004. The simulations effectively capture the impact of external shocks on the Lebanese economy and closely align with the actual changes in economic variables during 2005 to 2020.

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Globalization, Dutch Disease, and Vulnerability to External Shocks in a Small Open Economy: The Case of Lebanon in 1916 and 2019

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Introduction

From the end of the 19th century to the beginning of the 21st century, Lebanon has managed to attract large amounts of resources that are disconnected from the country's productive system and its internal accumulation of capital. This was possible thanks to three major characteristics: a large Lebanese diaspora, a comparative educational advantage of human resources, and an efficient banking sector. Transfers of wealth from the diaspora were constantly high, but what changed is their nature. These transfers in the early years were mainly remittances sent to relatives or invested in housing or in different sectors of the economy. They were first amplified by capital inflows from the region and gradually took the form of deposits in the banking sector.

Seeking to attract capital that fled Palestine in 1948 and other Arab countries that experienced waves of nationalization, Lebanon implemented a law on bank secrecy in the 1950s and established the legal foundations for a modern banking system. These inflows helped to create the basic infrastructure on which Lebanon built its productive capacities in agriculture, industry, tourism, and services in the 1950s and 1960s. At the end of that period, the oil boom reached its height with multiple increases in oil prices starting 1973. In parallel, and thanks to skills acquired through an efficient education system set by missionaries in the 19th century, Lebanese labor massively moved to the Gulf countries where they were employed as engineers, specialists, and skilled workers. These emigrants have naturally transferred an important share of their wealth accumulated in the Gulf into Lebanon and its banking sector.

A. Lebanon: A History of Foreign Inflows

"The wealth and luxury you see in this Mountain do not come from its land, but from the money saved by the sons of Lebanon in the emigration." This sentence from the study ordered by the Turkish governor of Mount Lebanon in 1918, (*Lubnan, mabaheth ilmiah wa ijtimaya – Lebanon, scientific and social studies – 1918*) remains true more than a century later.

This part of the Middle East was prematurely exposed to the international flows of people, goods, and capital during the first globalization. Statistics from 1912 show that 25 to 30 percent of the population of Mount Lebanon was living and working abroad. The reasons for this emigration, according to contemporaneous sources, are the repeated crisis in an economy that was heavily relying on the production and export of raw natural silk. Another reason was the high concentration of the population in Mount Lebanon with a density of 110 individuals per square kilometer, which was high compared to the international standards of that period.

1. The Silk Curse: Monoculture, Deindustrialization and Emigration

Since the first quarter of the 19th century and the implementation of the first factories for the treatment of raw silk, Lebanese agriculture has gradually been monopolized by mulberry culture to provide mulberry leaves to silkworm breeding plants. The low cost of a large labor force concentrated in regions close to the coast and ports was the main reason that motivated foreign investors to develop silk industry in Mount Lebanon.² This exporting activity raised the revenues of Mount Lebanon and triggered an enhancement of the standard of living together with substantial

² Mount-Lebanon, or the Mount Lebanon Mutassarifat (1861-1915) covered one-third of the area of modern Lebanon and was a semi-autonomous district of the Ottoman Empire created in 1861 as a consequence of the civil war of 1860 between Christian Maronites and Muslim Druses.

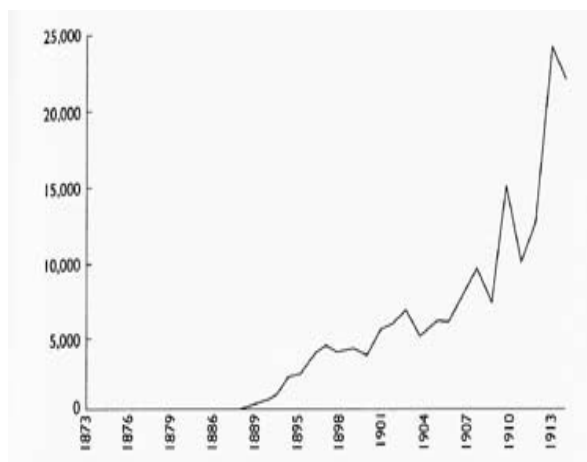
population growth. However, all other activities were excluded, and the booming silk sector led to the first “deindustrialization” in the Lebanese history, with a clear and strong resource movement effect towards the silk sector at the expense of other sectors, along the lines of the Dutch Disease approach of Corden and Neary (1982).

Table 1. The price of raw silk obtained at Marseilles, 1861-1910, selected years (FF per kilogram)

Year	Price	Year	Price	Year	Price
1861	73.5	1882	55.5	1901	40.5
1862	71	1880	45	1903	46.6
1864	73.5	1890	52	1904	40.5
1870	93	1892	44	1908	40
1872	105	1894	37	1909	40
1875	57	1896	34	1910	40.5
1881	58	1900	38		

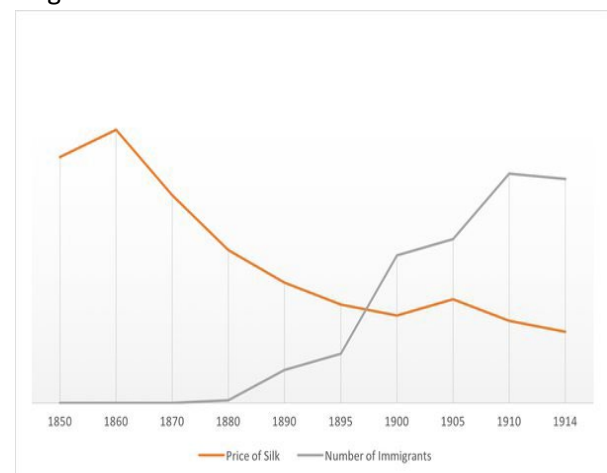
Source: Silk and Agrarian Changes in Lebanon, 1860-1914 (Firro, 1990), based on, Marseilles, Chamber of Commerce, 1861-1911, “*Rubrique Soie*”.

Figure 1. Rate of Lebanese Emigration to the United States.



Source: Inventing Home - Emigration, Gender, and the Middle Class in Lebanon, 1870-1920 (Khater, 2001).

Figure 2. Correlation of Silk Price to Rate of Migration



Source: Why did they leave? Reasons for early Lebanese migration (Khater, 2017).

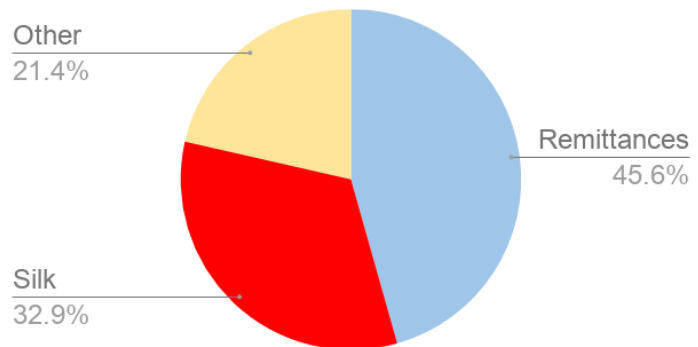
Yet, the higher standards of living of a growing population became tightly linked to the performance of the silk sector and its ability to generate revenues. Consequently, any shock to the silk industry would immediately translate into unemployment and degradation of living conditions.

By the end of the 19th century, the development of transportation opened a better access of European textile industries to the supply of raw silk at lower cost from the Far East, and the price of silk declined (Table 1). Also, the raw silk industry witnessed significant technological progress in the West with an increased productivity of workers. In that competition, Mount Lebanon lost the advantages of close distance to Europe and cheap and abundant labor. With few possibilities of quick re-conversion in activities, and the absence of a political leadership able to initiate it, emigration was the only option left to large portions of the population (Figure 1 and Figure 2).

2. Emigration and Transfers in Mount Lebanon of 1880-1914

Compared to neighboring Ottoman departments, the specific status of Mount Lebanon was granting more rights and freedom to its overwhelmingly Christian population. Therefore, when compelled to migrate by worsening economic conditions, Mount Lebanon's population was more inclined to move farther West than to move again under direct Ottoman rule. This was convenient for local elites. Fearing the eruption of social unrest in an overpopulated Mount Lebanon, these elites eased the transfer of emigrants from Mount Lebanon to the Americas. The trend started gathering steam in the 1880s. Around 1900, an average of 4,000-5,000 people were leaving each year through the ports of Beirut and Tripoli. In 1914, when the population residing in Mount Lebanon was estimated at 350,000 people, emigrants were estimated at 120,000.

Figure 3. Source of Income: Mount Lebanon (1914)



Source: Was Capitalism the Crisis? Mount Lebanon's World War I Famine (Pitts, 2021).

Table 2. GDP and GNDI of Mount Lebanon - 1912

Sector	Amounts in Ottoman Pounds	Share to GDP (%)
Agriculture	200,000	12.0
Tourism	200,000	12.0
Industry	100,000	6.0
Silk industry	800,000	48.1
Construction	200,000	12.0
Public sector	63,000	3.8
Other	100,000	6.0
GDP	1,663,000	100.0
Net transfers from America	900,000	54.1
Transfers from America	1,200,000	72.2
Transfers to America	-300,000	-18.0
GNDI	2,563,000	154.1

Sources: *Lubnan, mabaheth ilmiah wa ijtimaya - Lebanon, scientific and social studies - 1918.*

Note: I added the construction sector, estimated to be equivalent to the agriculture sector. I also added other sectors (mainly services) estimated at the same amount as industries other than silk. For the public sector, there is some detailed data for the year 1912.

At the beginning of the 20th century, it was clear that incoming transfers of funds reached high proportions compared to the size of the economy. Figure 3 shows the composition of the income of Mount Lebanon in 1914. Table 2 is drawn based on data on what is called in the early 20th century language "Income of the Mountain." This data covers an unspecified year between 1910 and 1914, most likely 1912. I calculated a proxy of the equivalent of today's GDP and Gross National Disposable Income (GNDI). According to this calculation, silk industry provided 48 percent of Mount Lebanon's GDP, while Net Transfers from the Americas amounted to 54 percent, and GNDI reached 154 percent

of GDP. Despite the lack of accuracy of these statistics, they hint to the size transfers had reached in the small economy of Mount Lebanon. Such a level of transfers had deep structural and permanent impact on the economy.

3. The Impact of Transfers on the Economy of Mount Lebanon

Scholars from the beginning of the 20th century acknowledged the positive impact of transfers on household income and welfare. But they complained about the misuse of this money, pointing to an uncontrolled real estate development with an “excessive inflation of the prices of land.” This statement is simply indicating the occurrence of a price increase in the non-tradable real-estate sector due to a strong spending effect caused by large transfers into the domestic economy. With land being an input to the productive activity, the large increase in its prices had a harmful impact on agriculture and on many industrial activities. Also, the booming real-estate sector has initiated further adjustments with resources moving into construction activities. Scholars talk about some technology transfers to agriculture and industry by returning migrants, but they present their effect as being marginal and limited. In sum, transfers have reinforced the deindustrialization already experienced by Mount Lebanon due to the mono-industry of raw silk.

Table 3. Imports, exports, and transfers of Mount Lebanon

Item – in Ottoman Pound	Imports & outflows	Exports & inflows	Balance
Food and livestock	760,000	78,000	-682,000
Tobacco, beverage & olive oil	80,000	198,000	118,000
Textile and silk	63,000	687,000	624,000
Manufactured goods	650,000	85,000	-565,000
Total	1,553,000	1,048,000	-505,000
Tourism Income/Expenditures	0	15,000	15,000
Transfers from / to America	300,000	1,200,000	900,000
Current Account Balance			410,000

Sources: Lubnan, mabaheth ilmiah wa ijtima'iyah - Lebanon, scientific and social studies - 1918.

The eviction of tradable sectors became quasi total by 1910-1914 and while silk reached 61 percent of total exports, Mount Lebanon became a net importer of tradable goods financed by Net Transfers from the Americas. Table 3 summarizes the imports and exports of Mount Lebanon for an unspecified year between 1910 and 1914, most likely 1912. It shows a trade deficit equivalent to 30 percent of Mount Lebanon's GDP and a ratio of Current Account surplus to GDP of 24.5 percent. Transfers and silk exports are clearly the main sources of revenues fueling the growing demand in Mount Lebanon that is met through increase in the imports of goods. For instance, statistics show that imports of food and beverage were three times larger than the exports of these same items. Also, imports of manufactured goods from Europe are almost eight times higher than exports of manufactured items other than textile and silk. This dependency on mono-exports and on transfers to finance imports of food and manufactured goods would have disastrous consequences for Mount Lebanon in times of economic or political crisis.

B. Confronting History and Theory: A General Equilibrium Analysis of Dutch Disease in Mount Lebanon of 1912

With the mono-export of silk and net transfers from the Americas accounting respectively for 41 and 54 percent of GDP, the economy of Mount Lebanon was both particularly globalized and highly vulnerable to external shocks. The data set available for the year 1912 is suitable for a simple general equilibrium analysis.

1. Dependence and Vulnerability to External Shocks: The Case of Mount Lebanon through a Simple General Equilibrium Framework

In the following, I use the simple general equilibrium framework of the 1 2 3 Model developed by Devarajan et al (*Simple general equilibrium modeling – 1997 & The simplest general equilibrium model of an open economy - 1998*) to assess the effect of external shocks on the economy of Mount Lebanon.

The 1 2 3 Model builds on the Harrod-Samuelson-Balassa two-sector (tradable and non-tradable sectors) model to examine the effects of remittances, inflows, and external shocks. The model involves one country, two producing sectors and three goods. The country has a small open economy and is a price taker on the international market. The two producing sectors are (i) one sector that produces goods for export only and (ii) another sector producing goods for the domestic market only. The three goods are (a) export goods, (b) goods produced and consumed domestically (mainly non-tradable goods), and (c) imported goods. Remittances, export prices and import prices are set as exogenous variables. The model does not take factor markets into consideration. In this model, the RER is weighted by the shares of imports and exports in the total foreign trade of the economy,

according to the following equation:
$$RER = \frac{P_D}{P_M} \frac{M}{FT} + \frac{P_D}{P_E} \frac{E}{FT}$$
 where P_D is the price of domestic goods, P_M the price of imported goods, P_E the price of exported goods, FT foreign trade, M imports and E exports. In this equation, real appreciation is equivalent to an increase.

The model fits the case of Mount Lebanon because: (i) Mount Lebanon was a small open economy; (ii) it had a large industry producing a single good dedicated for exports (silk) and (iii) relied on imports for almost all other types of goods, including food. The simulation aims to: (i) assess the impact of external shocks on GDP, income, and prices and, (ii) test the relation between remittances and exports. While the model assesses the spending effect of foreign inflows, it cannot assess the impact in terms of resource movement since it neglects factor markets.

2. A Simple General Equilibrium Analysis for Mount Lebanon: Simulation and Results

The analysis below is done through four scenarios: a drop by 90 percent in remittances, an increase by 10 percent in remittances, a decline by 10 percent in the prices of exports, and a compensation for the effect of that decline on consumption through a rise in remittances. The four scenarios are designed in a way both to confront theory with history and to understand the latter through the former. Table 4 summarizes the results of all four scenarios. Prior to the simulations, I have brought the current account surplus to zero by increasing imports in resources and raising consumption and investment in uses. This is equivalent to assuming that Mount Lebanon did not build up reserves and used all the funds available. This modification neutralizes the effects, however limited, of a large

current account surplus (large negative foreign savings) on the results of the simulation. Also, this modification is not far from the reality since Mount Lebanon back then did not have a monetary authority.

Table 4. Simulation of external shocks on the economy of Mount Lebanon in 1912 (change, in percent)

Percentage change compared to base year	Remitt. -90%	Remitt. +10%	Prices of exports - 10%	Prices of exports - 10% and consumption per capita unchanged
Remittances	-90.0	10.0	0.0	16.1
Total Income	-39.7	4.5	-6.4	0.9
Private Consumption	-33.7	3.6	-4.3	1.6
Private Consumption / capita	-34.7	2.0	-5.7	0.0
Investment	-31.3	3.3	-4.0	1.5
Exports	7.9	-0.9	-0.1	-1.7
Imports	-37.0	4.1	-5.5	1.2
Demand of domestic goods	-17.6	1.6	0.3	2.9
Price of domestic good	-36.1	4.2	-9.4	-2.9
Real exchange rate	-36.1	4.2	-5.9	0.9
Real GDP at market price	-2.6	0.0	-0.1	0.0

N.B: Per capita consumption is calculated taking into consideration an estimated 3 percent yearly natural increase in population. In the last scenario, I add an emigration rate of 1.4 percent. These assumptions are set according to tendencies observed during 1900-12. Note: Remitt. Stands for remittances. Source: author simulations.

The first column summarizes the effect of a decline in remittances by 90 percent. The impact on income is strong and generates a sharp decline in consumption and investment. This is consistent with historical developments: when remittances inflow to Mount Lebanon halted in 1914-18 because of WWI, the country fell into a disastrous famine. Imports, including food imports, collapsed. The RER decreases strongly, due to a collapse in the demand and prices of domestic goods. The decline in the RER boosts exports by 8 percent. The increase in exports keeps the decline in real GDP moderate at a negative 2.6 percent. In reality, history shows that exports stopped in 1914-18 because WWI interrupted all trade flows.

The second column simulates the effect of a 10 percent increase in remittances. Income, consumption, and imports increase while real GDP remains unchanged. The country loses in competitiveness since RER appreciates due to higher demand and prices of domestic goods, and exports decline. This result meets the observations on the increase in the prices of land, a key non-tradable good, with the rise in remittances to Mount Lebanon.

The third column assesses the impact of a decline by 10 percent in the prices of exports. Income declines and triggers a decrease in consumption. Imports also decrease since there is less foreign financing available due to the drop in exports. Real GDP regresses slowly while RER declines due to lower prices of domestic goods. The decline in the RER is however less marked than the drop in the prices of domestic goods since the relative price of domestic non-traded goods to traded goods declines moderately. Indeed, in the denominator, part of the prices of traded goods (exports) has also declined. Also in this case, history reports on the negative impact of a decline in the international prices of silk on income and consumption.

The last column simulates the increase needed in remittances to compensate for the impact of a 10 percent decline in the price of exports on private per capita consumption. The assumption here is that in the face of a drop in income and consumption, part of the population would emigrate while the diaspora would increase transfers to the motherland. Interestingly, to compensate for the impact of a 10 percent drop in the prices of exports on private per capita consumption, Mount Lebanon needed to receive remittances higher by 16 percent. The combined effect of the decline in exports and rise in remittances is higher income, higher imports, and higher demand for domestic goods while real GDP remains unchanged. The prices of domestic goods remain on the decline due to a combination of a high deflationary effect stemming from the decline in exports prices and of a more moderate inflationary impact related to higher remittances. The RER increases despite the decline in domestic prices since, in the denominator, the decline in the prices of a part of the traded goods (exports) is strong, and the relative price of domestic non-traded goods to traded goods increases. In line with the appreciation of the RER, exports decline; pointing to a loss in competitiveness. In short, an important decline in the price of exports on the international market would reduce the income of the population and increase the reliance on remittances which in turn has a negative impact on competitiveness and depresses exports.

C. Back to the Future: A Simple General Equilibrium Analysis of Dutch Disease in Modern Lebanon

After the First World War, Lebanon was extended beyond Mount Lebanon to its current borders to include larger farming lands. The famine had claimed the lives of one-third of the population and, while emigration continued, it was much lower than the pre-war levels. Between 1920 and 1950, the country developed a more diversified economy and abandoned the mono-industry model of the silk era. Remittances continued to play an important role, but less than in 1880-1914. In the late 1950s, social and economic transformations drove growing numbers of the rural population out of their areas. Some of them emigrated, but the largest part settled in cities. The second generation of this new urban population had access to better education and was attracted by the booming economies of the oil rich countries of the Gulf, starting in the early 1970s. Since that period, remittances and foreign inflows have become once again a major element of GNDI. The war of 1975-1990 triggered a large outmigration and increased the reliance on foreign inflows, since large segments of the economy were severely damaged due to the direct and indirect consequences of the war. In the following paragraphs, I will be considering foreign inflows as a whole, since the development of the banking sector reduced the boundaries between remittances and capital inflows, making it possible to examine the economic impact of the two variables combined.

1. Reliance on Inflows and Transfers in Modern Lebanon: A View through National Accounts

The National Accounts of Lebanon reflect the strong impact of the war on the Lebanese economy in terms of reduction in productive capacities and structural reliance on foreign inflows. Through extensive destruction of capital, the war reduced the productive capacities of the economy and increased the reliance on imports financed by substantial flows of income, transfers, and capital. Table 5 compares the structures of GDP and external accounts between the pre-war period (1972), the aftermath of the war (1994) and 2004. I chose 2004 because it is the year when the post-war reconstruction era ended. The champion of that era, former PM Rafik Hariri was assassinated in February 2005. Since then, no other economic and political project was proposed to the Lebanese society, and the rulers focused on extending the life of the post-reconstruction system they inherited from Mr. Hariri, until the system collapsed by end 2019.

Table 5. GDP, GNDI and external accounts in Lebanon (in percent of GDP)

	Share to GDP (%)	1972	1994	2004
Resources	Agriculture	9.9	12.1	5.2
	Transport and communication	7.5	2.8	7.4
	Industry	15.9	17.7	11.9
	Trade	31.5	28.8	24.0
	Construction	4.6	9.5	7.4
	Public sector	7.5	8.3	11.2
	Services and housing	23.1	20.9	32.9
	GDP (uses = resources)	100.0	100.0	100.0
Uses	Consumption-public	9.0	10.6	15.0
	Consumption- private	78.7	110.9	85.5
	Investment-public	3.1	4.1	3.1
	Investment-private	17.3	32.3	18.8
	Exports of goods and services	38.0	8.4	19.9
	Imports of goods and services	46.0	66.3	42.1
	Net exports (trade balance)	-8.0	-57.8	-22.3
	Net transfers and factor income	6.3	32.6	11.9
	Current account deficit	-1.7	-25.2	-10.4
	Net foreign savings	13.8	37.7	11.2
	Net change in foreign assets (negative is an increase)	-12.0	-12.4	-0.7
	GNDI = GDP + net transfers and factor income	106.3	132.6	111.9

Sources: National Accounts for 1973, 1994 and 2004. Economic dislocation and recovery in Lebanon - IMF, 1995. Back to the future, postwar reconstruction and stabilization in Lebanon – IMF, 1999.

In 1972, Lebanon remained open to international flows of goods, services, and capital. The foreign inflows of income, transfers, and capital amounted altogether to 20 percent of GDP, which is high but much lower than the 54 percent observed 60 years earlier. Interestingly, only part of these inflows poured into the local economy to finance imports for local consumption and investment. The largest part of inflows helped to build foreign currency reserves and purchase gold. The biggest source of foreign currencies was a dynamic exporting sector with 38 percent of GDP that helped to cover the largest part of imports. Consumption remained at 79 percent of GDP.

After the destruction of the war and the large resource movements in the form of strong outmigration between 1975 and 1990, a radically different picture emerged in 1994 compared to 1972. The second globalization was in full motion and, in 1994, the economy was receiving up to 70 percent of GDP in income, transfers, and capital flows. These inflows financed imports reaching 66 percent of GDP and boosted private consumption up to 111 percent of GDP. Exports shrunk to less than 9 percent of GDP. Investments reached a high of 32 percent of GDP, but large parts of these investments were in housing and real estate, with little impact on the productive capacity. If we look at the distribution of GDP by sector, we notice an increase in the shares of industry and agriculture, two sectors that benefited from the devaluations of 1985-88. Transport and communication declined due to severe damages inflicted to infrastructures and to the redirection of regional transport away from Lebanon during the war. Trade and services also suffered, especially with the decline in tourism.

In sum, the real GDP in 1994 was at 60 percent of its 1972 value and at 42 percent in per capita terms, while the country relied on foreign inflows to import goods and services for investment and consumption.

In 2004, Lebanon recovered much of the characteristics of 1972, but with an inflated public sector since public investment and consumption reached 18 percent of GDP against 12 percent in 1972. Much of the increase was in public consumption that reached 15 percent of GDP against 9.0 percent in 1972. The export sector recovered from 1994 but was still half its 1972 level (19.9 percent of GDP in 2004 against 38 percent in 1972). More importantly, the sector composition of GDP shows the impact of a decade of foreign inflow on the structure of the economy between 1994 and 2004. Sectors producing tradable goods in agriculture and industry saw their share drop significantly, while sectors producing non-tradable goods in services and public sector developed strongly. These are all symptoms of deindustrialization with resource diversion to non-tradable sectors that developed due to a strong spending effect. Noticeably, in real terms, the GDP in 2004 was at 93 percent of its 1972 value, and per capita GDP at 56 percent.

2. A Simple General Equilibrium Analysis for Modern Lebanon: Simulation and Results

The analysis below simulates the impact of a 10 percent change in foreign inflows on the Lebanese economy for the years 1972, 1994, and 2004. For the base case, foreign reserves are excluded, and only the amount of net foreign savings that closes the current account deficit is maintained. This modification assumes that any increase in foreign savings is directly and fully channeled to the economy with incidence on demand and prices. The simulation includes both an increase and a decrease of foreign inflows by 10 percent. There is no simulation of any shock on the prices of exports, due to the diversification of industry, exports, and agriculture in modern Lebanon. With this diversification in the tradable sectors, a shock in any single sector would not have an effect comparable to the significant effect of a change in the prices of silk in 1912. The exercise aims to assess the vulnerability of Lebanon to external shocks and their impact on the economy. Table 6 summarizes the results of the analysis.

Table 6. Simulation of external shocks on the economy of modern Lebanon (change, in percent)

Change in remittances & foreign savings	1972		1994		2004	
Scenarios	10.0	-10.0	10.0	-10.0	10.0	-10.0
Total Income	1.5	-1.5	10.4	-9.9	4.9	-4.8
Private Consumption	0.7	-0.7	3.5	-3.6	1.4	-1.4
Private Consumption per capita	-1.7	-3.1	1.5	-5.5	0.1	-2.7
Investment	1.4	-1.4	4.4	-5.0	4.5	-4.8
Exports	-0.5	0.5	-6.2	6.9	-2.6	2.7
Imports	1.3	-1.3	7.9	-7.8	4.1	-4.0
Demand of domestic goods	0.4	-0.4	0.6	-0.7	0.7	-0.7
Price of domestic good	1.6	-1.5	12.4	-11.6	5.7	-5.5
Real exchange rate	1.6	-1.5	12.4	-11.6	5.7	-5.5
Real GDP at market price	0.1	-0.1	0.0	-0.4	0.1	-0.2

Source: author simulations.

The simulation for 1972 shows an economy that is relatively sheltered against the changes in foreign inflows. In terms of uses, domestic consumption and investment were largely covered by the supply of domestic goods and services, while exports provided a substantial coverage of imports. Foreign

inflows helped to close a small gap and did not have a strong impact on income, and subsequently on demand. The 10 percent rise in remittances and foreign savings in 1972 boosts income, consumption, and investment while GDP rises slightly. The losses of the country in competitiveness are moderate; and RER appreciates due to both higher demand and higher prices of domestic goods. Exports decline slightly while the increase in imports is relatively high. The decline by 10 percent in foreign inflows would have almost exactly the symmetric effect of the rise in foreign inflows.

Lebanon's economy in 1994 is vulnerable and exposed, with low productive capacities in all sectors. Four years after the end of the war, Lebanon is pouring foreign flows in the economy to boost disposable income and finance large imports supplying a growing aggregate domestic demand. In 1994, a 10 percent increase in foreign inflows has an impact of the same magnitude on income and imports; consumption and investment rise. Competitiveness drops sharply with a strong rise in RER and prices of domestic goods, while exports drop dramatically. However, a rise in inflows remains neutral in terms of impact on GDP growth. Interestingly, GDP declines by 0.4 percent if foreign inflows decrease by 10 percent. Here, the impact shows increased sensitivity of the economy towards the spending effect of foreign inflows when their share to GDP reaches high levels, while the share of exports remains low. Another consequence of the high share of inflows to GDP is increased sensitivity of the prices of domestic goods towards a rise in foreign inflows.

In 2004, the Lebanese economy concluded a decade of high magnitude foreign inflows that diverted the economy towards higher shares of non-tradable sectors at the expense of tradable activities. Exports recovered some of the pre-war dynamic, especially in services and tourism. However, the reliance on foreign inflows to finance imports for local consumption and investment remained high. The effects of these inflows on RER and prices of domestic goods are comparable to the effects observed in 1912. Simulation predicted that a 10 percent decline in foreign inflows would reduce private consumption per capita by 2.7 percent. The reversals in foreign inflows starting 2011 and the aggravation of the tendency in the months leading to the crisis that unfolded in October 2019 have indeed exerted a downward pressure on consumption and welfare and led to large outmigration.

3. Confronting Predictions with Reality: Simulations and Actual Observations for the Period 2005-2020

The analysis below compares the simulations of the impact of foreign inflow shocks on economic variables to the actual changes observed through the National Accounts and the Balance of Payments. Table 7 shows that those simulations match the actual observations from 2005 to 2020.

Indeed, while a simulated positive shock with a 10 percent increase in foreign inflows raises income by 4.9 percent, the actual yearly average change in those inflows by 14.1 percent between 2005 and 2010 increased income by 6.8 percent on average and the actual change by 7.0 percent in 2011-2016 increased income by 2.1 percent on average. Actual private consumption and investment also increased as predicted by the simulation, as well as imports and domestic demand of domestic goods. However, while consumption per capita increased in 2005-2010, it declined in 2011-2016, due to the rapid increase in the resident population (Figure 4) with the inflow of refugees from the Syrian Arab Republic, a development that the simulations could not predict.

The simulated negative shock with a 10 percent decline in foreign inflows reduces income by 4.8 percent, and the actual decline in inflows by 10.8 percent on average in 2017-2019 reduced income by 2.8 percent. Actual private consumption, investments, imports, and domestic demand for

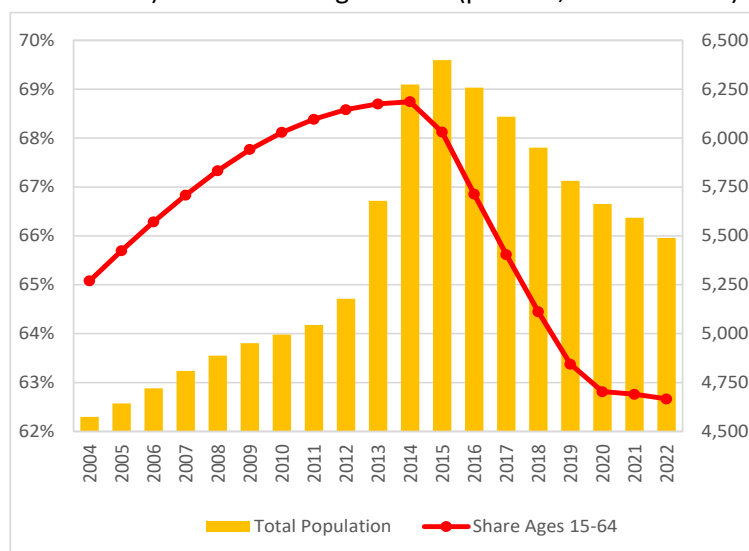
domestic goods declined as predicted. Interestingly, the predicted and observed declines in consumption are extremely close (1.4 and 1.3 percent, respectively). Yet, the actual consumption per capita merely changed, hence pointing to the accelerated outmigration and to the reversal in refugees' trends (Figure 4).

Table 7. Comparing simulations and observations for the period 2005-2020 (change, in percent)

Change in remittances & foreign savings	2004	2005-2010	2011-2016	2004	2017-2019	1912	2020
	Simulated	Observed	Observed	Simulated	Observed	Simulated	Observed
	10.0	14.1	7.0	-10.0	-10.8	-90.0	-50.3
Total Income	4.9	6.8	2.1	-4.8	-2.8	-39.7	-16.5
Private Consumption	1.4	6.3	2.7	-1.4	-1.3	-33.7	-27.4
Private Consumption per capita	0.1	5.2	-1.8	-2.7	-0.1	-34.7	-24.4
Investment	4.5	10.8	3.4	-4.8	-16.9	-31.3	-65.9
Exports	-2.6	6.7	-1.5	2.7	-1.0	7.9	-34.2
Imports	4.1	6.9	3.6	-4.0	-2.2	-37.0	-33.4
Demand of domestic goods	0.7	6.9	3.4	-0.7	-4.2	-17.6	-23.0
Price of domestic good	5.7	3.6	4.7	-5.5	6.2	-36.1	40.5
Real exchange rate	5.7	0.1	8.1	-5.5	5.5	-36.1	-43.7
Real GDP at market price	0.1	6.7	2.0	-0.2	-2.7	-2.6	-25.9

Source: author simulations and observations from Lebanon National Accounts 2004-2020 (CAS, 2022) and WDI, 2023.

Figure 4. Population in Lebanon 2004-2022 (thousands, right hand axis) and share of ages 15-64 (percent, left hand axis)



Source: World Bank, WDI 2023.

The most striking outcome is the similarity between the observed changes in 2020, the year of full-blown crisis, and the simulation with the structure of the economy in 1912. Here, with the exceptions of the decline in growth that substantially overshoots predictions, and exports and prices of domestic goods that present reversed signs,³ all other changes are within the range of the 1912 simulation. Indeed, the simulated 90 percent collapse in foreign inflows for the economy of 1912 depresses income by 39.7 percent. The actual decline in

³ The simulation using the structure of 1912 predicts a decline in domestic prices and an increase in exports which attenuates GDP decline. Indeed, in 1912, exports represented over 60 percent of GDP (see Tables 2 and 3). In 2019, exports were only 21 percent of GDP, domestic prices increased because of massive increase in money supply, and, more importantly, the massive disruptions in service provisions – including energy shortages – prevented the economy from turning the decline in real exchange rate into an opportunity for a better competitive position.

foreign inflows in 2020 is 50.3 percent and leads to a contraction of income by 16.5 percent. Private consumption, private consumption per capita, imports, and domestic demand for domestic goods all decline within the range and direction of the simulation.

The RER dynamics is of particular importance. Indeed, while a decline in foreign inflows in 2017-19 should have led to a decline in RER, this did not happen, and the RER continued to increase. This is owed to the continuation of the policy of de-facto peg and is a symptom of the overvaluation of the Lebanese currency. This persistent increase in RER led to a drop in exports by 1-1.5 percent on average between 2011 and 2019. The shutdown of the main channel for foreign inflows through the banking sector in 2020 and the sharp decline in these inflows led to a decline in the RER, in parallel to a collapse of the de facto peg of the LBP. This decline in the RER happened despite the increase in domestic prices, the latter being influenced by a massive expansionary monetary policy followed by the Central Bank. Yet, the increase in the prices of imports owed to the collapse of the peg outweighed the increase in domestic prices and produced a decline in the RER.

In sum, it is interesting to see that the observed dynamic in 2020 is better proxied through a crisis scenario applied to the structure of the economy of 1912 rather than to the economy of 2004. This implies that the economic policy followed between 2004 and 2019 gradually distorted the economy of Lebanon towards an extraversion, dependence on foreign financial inflows, and vulnerability that prevailed a century earlier. Back then, the shock of WWI starved the population. Nowadays, the path towards the crisis and the crisis itself reduced the resident population by 900,000 individuals between 2015 and 2022, of which 300,000 between 2020 and 2022 (Figure 4), despite the COVID-19 restrictions on travel. Hence, a century later, the adjustment to the crisis in Lebanon is again happening through the society and the population, in 1916 through starvation, and in the 2020s through outmigration.

D. Conclusion

In the early 20th century, Mount Lebanon experienced deindustrialization due to the development of exports of raw silk. The strong development of the silk sector generated both a resource movement effect and a spending effect like those described by Corden & Neary. This deindustrialization and the monopolization of industry, agriculture, and exports by the silk sector created strong dependency and vulnerability of Mount Lebanon to shocks in the silk market. Outmigration and remittances were the spontaneous responses of the system to the fluctuation of income and consumption related to the fluctuation in exports and prices of silk. Remittances from migrants improved income and consumption and had a strong spending effect. The latter led to an increase in the demand for imported goods and in the demand for and prices of domestic goods. This in turn led to a real appreciation and to deindustrialization and eviction of exporting sectors, which further increased the reliance on remittances. The dependency on silk exports and remittances reached such levels that the interruption of international flows of goods, capital, and people drove the population into starvation in 1916.

Between 1972 and 2004, Lebanon moved back to characteristics close to those of Mount Lebanon of 1912 in terms of dependency on (and vulnerability to) foreign inflows. In 1972, prior to the oil boom in the Middle East, Lebanon already was receiving substantial foreign inflows, but with few effects on income, prices, and GDP. Most of these inflows were accumulated into foreign currency reserves and gold and neutralized. Between 1975 and 1990, war devastation was a major shock to the country and the spontaneous responses of the system were outmigration and high foreign inflows. These foreign

inflows sustained income and consumption during the war and allowed a rapid recovery of income, consumption, and investment after the war. In 1994, large amounts of foreign inflows had a strong spending effect on the economy with an increase in the demand for imported goods and in the demand for and prices of domestic goods. This in turn led to a real appreciation and repressed exporting sectors over the whole decade between 1994 and 2004.

In 2004, Lebanon became an indebted country, with large non-tradable sectors and structural dependency on foreign inflows that depressed competitiveness and promoted outmigration in patterns like those observed 92 years earlier. However, similarities with 1912 stop here. Indeed, Mount Lebanon could not make any policy choice since it was a subordinated entity within the Ottoman Empire. In the Lebanon of 2004, policy choices were clear: the country adopted a de-facto peg between the US\$ and the LBP in nominal terms. Lebanon has also adopted a double currency system where US\$ and LBP are equally used in all types of transactions. These two measures have reduced the role of the nominal exchange rate as a variable of adjustment that would affect RER and competitiveness. These two measures also allowed banks to attract an increasing amount of capital that has been channeled to the public sector, to importers, and to non-tradable sectors. Real appreciation and loss of competitiveness have been aggravated.

Political economy weighed heavily on the direction of policy choices. Bankers used high interest rates to attract more capital, which they were sure would be highly remunerated. Politicians were comfortable with the availability of funds they could channel to their constituencies. Importers were encouraging policies that expanded markets for their products. Bankers, landlords, and real estate developers would push for the overvaluation of real estate assets and for their extensive use as collateral in lending operations. These deliberated policy choices paved the way to the collapse in 2019 when a reversal in foreign inflows over many years culminated in a major crisis with unprecedented impact on the society unseen since the famine of 1916. Instead of starvation, the Lebanese society is now bleeding its vital forces through a massive outmigration, an adjustment that weakens the society and enhances the grip of the existing power structures over its destiny.

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