Top incomes and Personal Taxation in Lebanon, An exploration of individual tax records 2005-2012

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Abstract

This paper studies the evolution of the shares of income accruing to the richest and examines the shape of the upper part of the income distribution in Lebanon using individual tax returns and national accounts data, from 2005 to 2012. We obtain four main empirical results. First, income in Lebanon is highly concentrated. The top 0.01% of the income distribution accounts for over 3 percent of total income on average throughout the period. The average income within the top percentile is three times higher than the threshold to enter the group. This is one of the highest levels of income concentration reported in the World Top Incomes Database. Second, the dynamics of income inequality have followed a slight U-shaped pattern. This evolution is mainly due to a decrease in built property revenues, following the 2006 war and a period of high inflation. Wages and profits concentrations have not been affected. Third, the main components of top income shares in Lebanon are profits and rents, depending on whether we consider the distribution of income before or after any deduction. Finally, personal income taxation does little to reduce these high income disparities, partly because of the schedular form of the income tax.

Keywords: Top incomes, income concentration, Lebanon, Personal income tax.

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Contents

1 Introduction

The study of the distribution of top incomes using tax data has a long history in economics, as notably shown by the pioneering work by Kuznets (1953) for the United States. There has been a recent revival of interest in this subject, following the research by Thomas Piketty on the long-run distribution of top incomes in France (2001, 2003). In the last decade, top income shares series have been constructed for twenty-nine countries, while over forty countries are under study (see Atkinson and Piketty (2007, 2010) for detailed country studies; see Atkinson, Piketty and Saez (2011) and Alvaredo, Atkinson, Piketty and Saez (2013) for recent surveys and for the up-to-date databases). These studies have generated a large volume of inequality statistics, gathered in the "*World Top Incomes Database*" (WTID).

Yet, there is relatively less work providing evidence for developing countries, as the method depends on the existence and development of reliable fiscal sources and on administrations to collect and publish them. In particular, no work has been done on Middle Eastern countries. In this paper, we propose to start filling this gap by studying the Lebanese case.

Lebanon is an interesting country to study for at least four reasons. First, there is a consensus about the fact that the level of wealth and income inequalities in Lebanon is high by both international and historical standards. However, there are few studies to establish it rigorously. As in the rest of the Arab world, there is a major lack of data on poverty in Lebanon (UN-ESCWA, 2005), from both national and international sources. Significantly, Lebanon is absent from most of the World Bank annual reports and databases on inequality. There is no global Gini index available for the country [1]. The shortage of data and the lack of transparency impede any public and political awareness on the social issue and any comparison of Lebanon's performances with other countries. It also reflects the little interest of governments in studying social welfare (Jawad, 2009, p69). Nevertheless, several reports on global wealth distribution include Lebanon (Davies et al. 2009). In particular, the 2012 "*Global Wealth report*", by Davies, LLuberas and Shorrocks, places Lebanon at the third rank of global wealth inequality, after Russia and Ukraine and just before the United States, with a "Wealth Gini" of 85.7 percent [2]. Lebanon is part of the "*nations with the highest wealth level in the World*", that is nations with an average wealth per adult greater than 100,000 US$, alongside with Oman and Bahrain for the Middle East, and even before Saudi Arabia. This high wealth concentration can be partly attributed to the dynamism of the Lebanese banking sector, which makes Beirut one of the main financial centers of the region. Additionally, thanks to the Bank Secrecy Law in force since 1956, Lebanon is an entry point for most of the capital inflows and investments in the Middle East, earning it the common - albeit controversial - nickname of "*the Switzerland of the Middle East*".

Alongside these studies on wealth inequalities, little research has been conducted on income concentration in Lebanon. The first and only countrywide study on the Lebanese income distribution is dated 1960. It was commissioned by the then Ministry of Planning and implemented by a French consultancy firm: the French International Institute for Research and Training for Standardized Development (IRFED). The results, still frequently cited as Fevret (2011) underlines, brought to light very high income disparities, with the richest 4 percent concentrating 32 percent of the national income and the following 14 and 32 percent population groups concentrating respectively 28 and 22 percent of the national income. The remaining half of the population lived in poverty, with only 18 percent of the national income (with 2 percent only accruing to the poorest 9 percent). Since then, few Lebanese academics have carried out poverty studies or surveys based on countrywide field investigations (for an example in Arabic, see Dah and Hijazi, 1997), partly because the civil war withdrew the social issue from the political agenda. To the best of our knowledge, there are no other estimates of top income shares. It is only in the 1990s, under the impetus of international development

1. See the press article: "*Taxation and inequalities: Lebanon, between lack of data and absence of reforms*, Bachir El Khoury, 10/20/2014, An Nahar.

2. Against 85.2 percent for the United States. They define wealth as the marketable value of financial assets plus non-financial assets (principally housing and land) less debts, p5.

organizations as UNDP (see Nehme, 1997; UNDP and the Lebanese Ministry of Social Affairs, 1998; Laithy et al, 2008) and UN-ESCWA (see Haddad, 1996; Khalidi-Beyhum, 1999), that social inequalities were brought back to the public arena and that data collection started again, leading to the publication of three household surveys in 1997, 2004 and 2007 (Jawad, 2009, pp76-77). The UNDP and Ministry of Social Affairs' report of 1998 was the first official post-war survey on living conditions in Lebanon. Based on the 1997 household survey, the report estimates that half of the population had a per capita monthly income (from all sources) of \$131, which corresponds to approximately \$650 per household [3]. The 2007 national poverty survey, analyzed in Laithy et al. (2008), reports that nearly 8 percent of the Lebanese population (that is 300,000 individuals) live under conditions of "*extreme poverty*" (less than US\$ 2.40 per capita per day) and are not able to meet most basic food and non-food needs. With a broader definition of poverty (World Bank's "*upper poverty line*" of US\$ 4 per capita per day), the authors find a poverty rate of 30 percent (approximately 1,000,000 individuals). Laithy et al. (2008) find that the bottom 20 percent of the population accounts for 7 percent of total consumption levels while the top 20 percent accounts for over 43 percent. As a consequence, they estimate a relatively low Gini coefficient of 0.37 for Lebanon, in line with the average in the Middle East. The present study, based on the first administrative data available in the recent period, provides new figures on income concentration.

Second, analyzing the Lebanese income distribution can help us gain further insight into global inequality levels in the Middle East. There has been a renewed interest in inequality measurement in the region since the outbreak of the Arab Spring (see Ncube and Anyanwu (2012)). Most of the recent papers in the field suggest that inequalities in Middle Eastern countries are not particularly high by international standards and that the source of dissatisfaction at the origin of the popular movements must be found elsewhere (Hlasny and Verme (2013)). However, the bulk of this literature is based on household survey data, which notoriously underestimate income concentration. A reassessment of the evolution of top income shares in Lebanon, performed with a combined use of fiscal data and national accounts, can allow us to question the relatively low estimates found in existing studies. In this regard, our work is closely related to Alvaredo and Piketty's (2015). In this paper, they use an alternative methodology to gain further insight into inequalities in the Middle East and to put in perspective existing estimates. They simulate income distributions in Middle Eastern countries, assuming that income follows a lognormal distribution at the bottom and a Pareto distribution at the top. They calibrate the parameters of their models and generate the simulated income distributions using both household surveys and national accounts. They find that the share of total income accruing to the top 10 percent income receivers in the Middle East is currently 55 percent (vs. 48 percent in the United States, 36 percent in Western Europe, and 54 percent in South Africa).

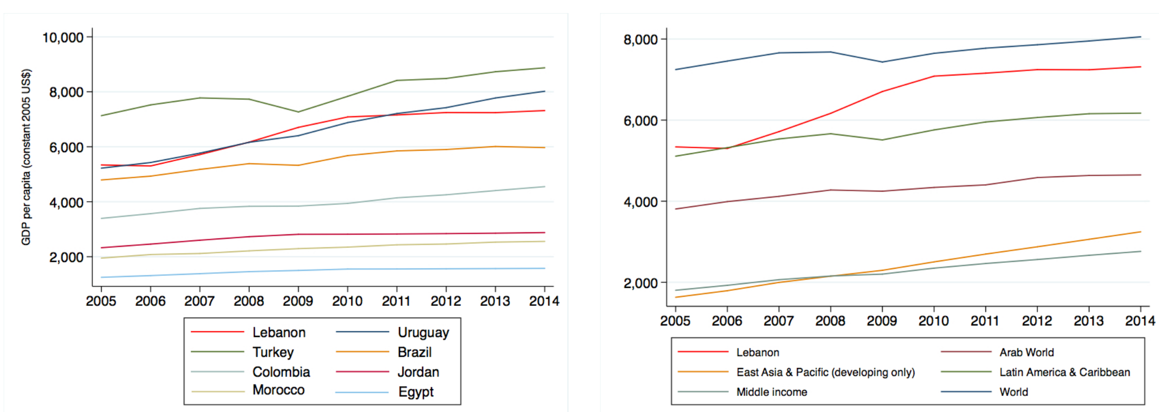
Third, Lebanon has undergone major political crises between 2005 and 2012. The period studied in this paper begins with the assassination of the Prime Minister Rafik Hariri, in February 2005, which marked the beginning of what has sometimes been called the "*Lebanese Spring*", leading to the end of fifteen years of Syrian occupation. The year 2005 is already analyzed as a major milestone in Lebanese modern history, as it marked the beginning of an escalation of violence, political instability and social polarization. During the following years, the country witnessed bombings, assassinations and attempted assassinations of politicians, public figures or journalists, while numerous power vacancies and government changes took place. This great political instability culminated in 2006 with the Israeli war. Many popular demonstrations took place in response to both political and social crises. The Syrian conflict that began in 2011 deeply affected Lebanon and generated several armed clashes (see the World Bank report "*Economic and Social Impact Assessment of the Syrian Conflict*", 2013). If the year 2005 is a key moment in the Lebanese history, it must be placed in a longer period in order to be fully understood. Indeed, since the 1943 independence, the country has been characterized by a high political and institutional instability, which began with the 1956-1958 crisis and led to the 1975-1990 civil war. After a relative calm during the reconstruction period in the 1990s, the geopolitical, socio-economic, political and religious tensions turned again Lebanon into a "*State of Discord*" (Picard, 1988) and an "*impossible and conditional State*" (Corm, 2012) sprang up again in 2005. We do

3. Figures cited in Gaspard (2004), p75.

not intend either to analyze the causes of the sporadic political strife throughout Lebanon's modern history or to identify socio-economic disparity as a unique explanation for such a multidimensional phenomenon. Nevertheless, it is interesting to determine inequality levels and to provide a picture, even only a partial one, of the Lebanese social structure, to shed light on the political situation, all too often limited to confessional and religious interpretations. Considering and addressing social justice indeed goes hand in hand with the existence of a sovereign State and a certain political coherence.

Finally, Lebanon provides a unique case for research because of its distinctive economic history and political economy. Lebanon has the oldest liberal market system in the region (Jawad, 2009, p21) and has constantly opted for a laissez-faire economic system, with free markets operating, openness to trade and minimum state intervention (Gaspard, 2004, p54). Hence, Lebanon historically stood out among other developing and Arab countries because of its economic system. It constitutes an extreme example of what Esping-Andersen (1990) denoted "*the different worlds of welfare capitalism*", namely, the "*Liberal welfare state*", where residual attention is paid to social welfare [4]. Given this historical particularity, determining the level of income inequalities in the recent period puts in perspective the common view of Lebanon as a paragon of economic success and modernization in the Middle East (Corm, 1998, 2012; Gaspard, 2004). More generally, it can also provide a useful tool for analyzing the laissez-faire strategy for economic development. Indeed, since the end of the civil war, the Lebanese socio-economic situation considerably worsened. Emphasis was put on reconstruction rather than social policies. During the mid-1980s, Lebanon underwent an unprecedented monetary crisis, with a hyperinflation reaching 400 percent in 1987 and intensive speculation against the Lebanese Pound, which led to a sharp fall in purchasing power for a great part of the population. Towards the late 1990s, the country's economy faced a stubborn economic recession, in the context of growing public debt managed by financial austerity. Today, Lebanon is a middle-income country, with a GDP per capita of 5,342 US$, a level which is comparable to Latin American countries such as Colombia or Uruguay, just below Turkey, above non-oil Middle Eastern countries (such as Morocco, Egypt or Jordan), but far below Qatar, Saudi-Arabia, Bahrain and Western European or Anglo-Saxon economies (Figure 1.1).

Figure 1.1: Gross Domestic Product per capita in selected countries and regions, 2005-2013

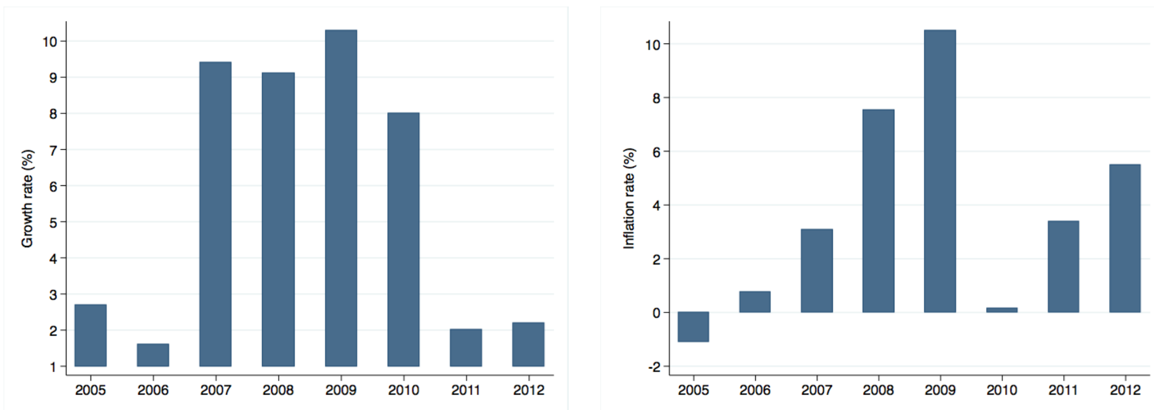


Source: World Bank Database.

4. See Jawad (2009), p78 "Residualism and the dream of a welfare state".

Its economy relies on the tertiary sector (banking services and tourism mainly), accounting for more than 70 percent of GDP (World Bank, 2008). After a period of relative stagnation and following the 2006 July war, Lebanon experienced high growth coupled with inflation. Moreover, Lebanon had a high unemployment rate of 19 percent in 2004[5]. Only 70 percent of working age men and 24 percent of working age women are active in the labor force. Unemployment rates are alarmingly high among young people and women, with respective rates of 34 and 18 percent (World Bank economic monitor report, 2013, p11).

Figure 1.2: Inflation and growth rates in Lebanon, 2005-2012



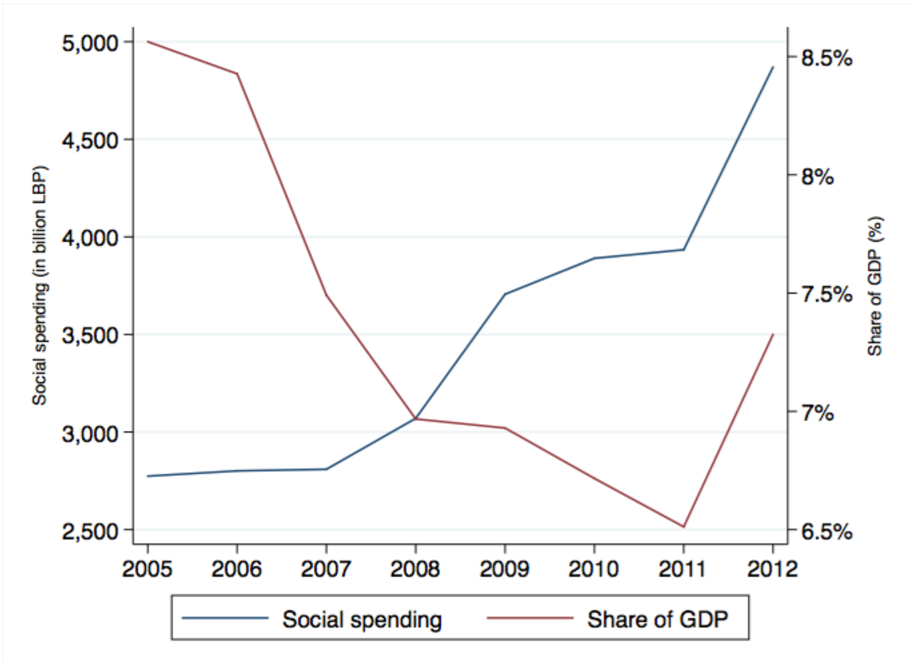
Source: World Bank Database.
Notes: Annual GDP growth. Aggregates are based on constant 2005 US$.

The mediocre performance of the economy since 1990, together with political instability and the 2006 war damages further accentuated the need to undertake profound reforms. On the other hand, the publication of the national survey report on inequality in 2007, which was the first of its kind in Lebanon, directly contributed to the reform processes launched at the Paris III conference in 2007 and to the "*Social Action Plan*" that was elaborated afterwards. The plan places objectives of social justice, such as poverty reduction and equity, at the heart of the reform process, thus contrasting with the country's long tradition of market oriented policies as well as with its public policies directed toward reconstruction rather than social services[6]. The present study sheds light on the real impact of these social policies on the Lebanese distribution of income. This new orientation towards social policies should not be *a priori* overstated. If public social spending did increase significantly during the period (both at current and constant prices), its share in GDP decreased and remained far below total OECD members' average of 25.1 percent for 2000-2010, reflecting the serious lack of commitment to poverty reduction of the Lebanese government (Figure 1.3).

5. Lebanon's Central Administration of Statistics, 2006 pp57-58.

6. In 2008, the minimum wage was increased from 300,000 LBP (200 US$) to 500,000 LBP (333 US$), in the aftermath of a massive strike called by the country's union federation. This increase was the first since 1996. The minimum wage was increased again in 2012, up to 675,000 LBP (448 US$). A program of modernization of the fiscal administration, in a context of increasing public debt and stagnation of real GDP per capita, was implemented.

Figure 1.3: Evolution of social spending in Lebanon, 2005-2012



Source: Ministry of Finance, Lebanon.

In this paper, we obtain four main empirical results. First, income is highly concentrated at the top. For the years 2005-2012, the richest 1 percent individuals owned at least between 12 and 20 percent of total personal income. The average income within the top 1 percent is almost 3 times higher than the threshold to enter the group, the highest level of concentration reported in the WTID. Second, built property revenues and profits are the main component of top incomes. Third, built property revenues eroded during the period. Fourth, the Lebanese income taxation is a blunt instrument for reducing these high levels of inequality. Personal income taxation hits more effectively labor income and facilitates evasion for top income earners, particularly business income earners.

The rest of this paper is organized as follows. In Section 2 we discuss the data and methodology used. Section 3 briefly presents the Lebanese political economy and economic history as well as the Lebanese tax system. Section 4 displays the main results on income concentration in Lebanon. Section 5 describes the shape of the income distribution at the top. Section 6 assesses the progressivity of the personal income tax. Section 7 concludes. Details about data sources, computations and estimations are presented in the Appendices.

2 Data and methodology

2.1 Presentation of the Lebanese Personal Income Tax data

In cooperation with the World Bank, the Lebanese Ministry of Finance has shared micro-level tax data of the universe of personal income taxpayers, for the fiscal years 2005-2012. The database constitutes the primary data source used in this paper. As far as we know, no country in the Middle East has ever published official tax statistics (neither in the form of tabulations by range of income, nor in the form of micro-data), with the exception of Israel. This database is the first reliable fiscal source available in the Arab world.

The Lebanese personal income tax return-database is an anonymized unbalanced panel data of 5,037,607 observations, with an average of 625,000 observations per year. Each observation corresponds to the declaration of a taxpayer. Due to the schedular form of the Income Tax, the database reports four sources of income, for each taxpayer [7]: (i) Salaries and wages, (ii) Self-employment income (profits made by self-employed, liberal taxpayers or individual companies), (iii) Business income (profits made by individuals in corporations and by partners in a partnership) and (iv) Built property revenues. The amounts represent the annual income received, and are displayed in Lebanese Pound.

With the exception of built property revenues, there are two variables for each source of income, corresponding to the "**gross income**", income before any deduction and gross of expenses, and the "**net income**", income after deductions of the charges, expenses and personal allowances and benefits and which is subject to tax [8]. Given the schedular form of the Income tax and the resulting format of our database, we are able to generate several top income distributions: (1) by ranking individuals according to a given source of income (labor income, profits or rents only), (2) by ranking individuals according to earned income (wages and profits, excluding rents) or (3) by ranking individuals according to their total income. These possibilities can be of great interest, notably to study the effectiveness of the schedular income tax [9]. Interestingly, the net and gross income distributions are also different at the top. A direct consequence of this feature is that the dynamics of our top shares are sensitive to the definition of income chosen: all our findings must therefore be interpreted with caution.

However, several limitations of this database should be pinpointed.

First, capital incomes are only partially present in the database [10]. This is a significant limit, as capital incomes are generally the main components of top incomes.

Second, the database does not provide details on the different components of each income source. The Lebanese personal income statements are separated into two kinds of tax forms: tax forms for filers not required to keep precise accountancy books (tax form F3 for self-employed and liberals and tax form R6.6 for wage earners) and tax forms for filers required to keep accountancy books (individuals working in partnerships or corporations). Each form reports different items on costs, deductible amounts, working expenses, sources of income for each activity. Regrettably, we only have access to the aggregate cells of each tax form and not to the sub-cells, which would have provided pertinent details on the amounts of non-taxable income, expenses or social contributions.

Third, we can only assess the impact of personal taxation on labor income and profits, but not the impact of the overall income tax. Indeed, our database does not include either the profits of corporations taxed by the corporate tax or the amounts of income from movable capital received and taxed are not provided (Title

7. If the individual does not receive income from a given source, the corresponding amount is null.
8. See Appendix B.1. for the detailed legal definitions of each variable.
9. It should nevertheless be underlined that the corresponding top groups are not the same within each distribution.The richest individuals with labor incomes are often not at the same rank in the total income distribution.
10. As explained in Appendix B, gross profits include interests, dividends, participations and capital gains. However, these amounts are exonerated and therefore not included in the net profits, that enter our definition of total personal income.

III of the Income tax)[11].

Fourth, the amount of tax levied on built property revenues is not given, although there exists a built property tax in the Lebanese tax system. Having the amount of taxes paid on rental incomes from built property would have been relevant to our study, given the fact that Lebanon is usually defined as a "*Rentier State*" (Beblawi, 1980; Jawad, 2009), and that property revenues are traditionally identified as a major component of this rent[12].

2.2 Estimating top income shares: methodology

Top income shares are the ratio of the total income recorded in the tax data and received by the wealthiest Lebanese (numerator) to an estimate of the total income received in the economy as a whole (denominator). To estimate them, we proceed in three stages:

1) First, we give a proper definition of the income we are studying
2) Second, we identify top groups, using an external control for the population of tax units
3) Third, we estimate the denominator, using an external control for the total personal income (computed with National Accounts).

2.2.1 Definitions: gross income, income subject to tax and actual income

A first issue concerns the definition of income. It is indeed important to clarify the income concepts captured by the Lebanese tax system, notably to put in perspective our international comparisons. Ideally, we should consider a definition approximating an "**actual income**" equal to gross income minus costs and expenses incurred during the activity, but including personal deductions (medical expenses, education expenses, gifts and donations, interest on mortgages, deposits in savings accounts, grants, primes, allowances and compensations). Regrettably, as mentioned above, the only variables available in our database for each source of income except for built property revenues, are the **gross income** and the **income subject to tax**, which excludes all personal deductions. Additionally, our micro-data do not include most of the cells required to define gross income. Due to this lack of disaggregation, we were not able to disentangle exonerated income from the expenses and, hence, to derive the "actual income". Given this uncertainty, we finally took as definition of income:

Total income = *Gross revenues from salaries and wages+ Profits from a liberal profession or an individual company subject to tax + Business profits subject to tax + Built property revenues*[13]

2.2.2 Control total for population

The second issue is to give a proper definition of top groups. To do so, the number of tax units recorded in the personal income tax data should be related to an external control for the entire population of tax units (Atkinson, 2007; Atkinson, Piketty and Saez, 2011). The Lebanese income tax is individually based and never allowed joint filing for married couples. Each family member is taxed separately. We therefore took as control for population, that is the total number of individuals if everyone were required to file a tax form, the adult population aged 15 and more (representing 75 percent of total population, on average). For example, in 2005, there were 2,874,255 adults in Lebanon according to the World Bank. Consequently, the top 1 percent in 2005 refers to the 28,742 individual taxpayers with the highest reported income in our

11. See Appendix A for a detailed presentation of the Lebanese fiscal system and the role of personal taxation.

12. Alongside with remittances, revenues from banking services or tourism. In this regard, we should emphasize that, given the large Lebanese diaspora, remittances represented on average 21 percent of GDP between 2005 and 2012 and are not subject to any taxation.

13. To put our findings in perspective, we sometimes considered another definition of income: ***the total gross income*** = *Gross revenues from salaries and wages + Total revenues from a liberal profession or an individual company + Total business revenues + Built property revenues.*

database, and the top 0.01 to the 287 richest individuals. Throughout the paper, "tax units" will refer to individuals and demographic data come from the World Bank database.

2.2.3 Who are the top income taxpayers?

Income tax data are often silent on how inequalities evolve at the bottom of the income distribution, since income tax generally concerns a well-off minority of the population. This is particularly true in developing countries. Yet, our database contains a high number of observations. On average, 19 percent of tax units were required to file an income tax return between 2005-2012. This relatively high figure can be explained by the withholding tax system and by the fact that the Lebanese Income Tax does not have a filing threshold. As a consequence, some taxpayers with low income, mostly labor income earners and built property revenues earners, are present in the database [14]. These incomes are exonerated *a posteriori*, via family abatements. Since 1999, family abatements are fixed at 7,500,000 LBP (5,000 US$ per year, 415 US$ per month) for all individuals, with an additional abatement of 2,500,000 LBP (1,660 US$ per year) if the individual is married and the spouse is not working, and a 500,000 LBP (330 US$ per year) compensation for each child, up to 5. If the spouse earns an income subject to the Income tax, each spouse benefits from the first abatement, and one of the two from the children compensations. Hence, the exemption thresholds vary between 415 US$ (for a single individual) and 690 US$ (for a married individual, whose spouse does not work and who has five children) according to the individual's family situation.

A first difficulty was to determine the "empirical" threshold, delimiting top groups, in order to assess which top income shares could be computed with relevance [15]. Corm (2012, p283.) estimates that it is on average equal to 600 US$. The following table compares the percentage of tax units in our database paying a strictly positive amount of income tax with the percentage of tax units with gross income greater or equal to 600 US$.

	Individuals paying positive taxes	**Individuals with gross income > 600 US$**
2005	5.3%	5.8%
2006	5.1%	5.7%
2007	5.8%	6.1%
2008	7.3%	7.2%
2009	8.4%	8.3%
2010	8.5%	8.5%
2011	8.6%	8.7%
2012	10.9%	10.0%

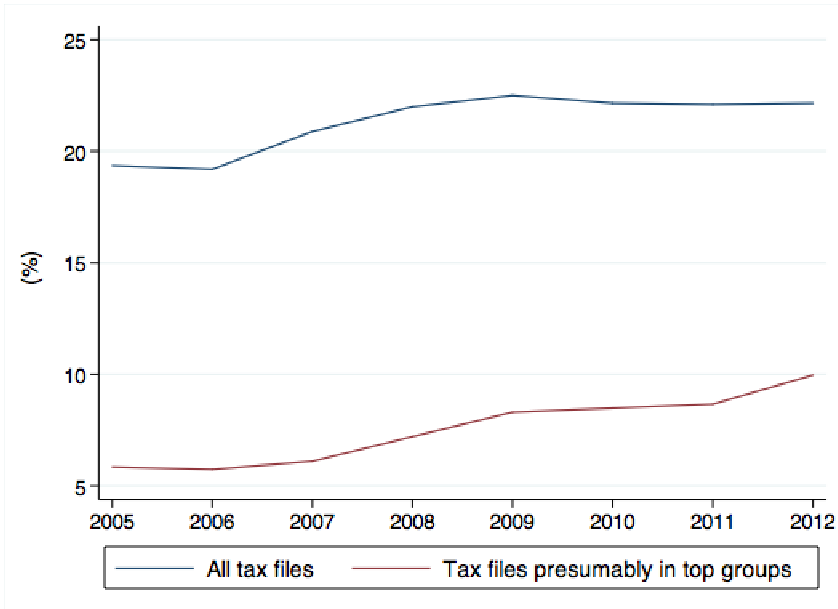
Sources: author's computations using income tax returns and tax units estimates.

14. The existence of low rental income reported is due to an "old rent-control law", enacted after World War II (Rent Acts 159 and 160). In 1992, the control system was suspended and all rental agreements signed after 1992 were liberalized but the law froze the contracts signed before this date. The old rents do not take into account inflation, the drop of the Lebanese currency during war years (1983, 1987) or in 1993, and the evolution of housing market prices. However, old rents are supposed to take into consideration any rise in wages. See Marot, B. "The "Old Rent" Law in Beirut: an Incentive or Disincentive for Gentrification?" Les Carnets de l'IFPO, October, 19th, 2012.

15. In other words, the distribution of tax filers is not perfectly linear. As people filing a tax form do not necessarily have an income greater than people who do not file a form, there is a "jump" somewhere, delimiting top income taxpayers from the rest of the population of tax units. This threshold is in between 415 and 690 US$.

Given the similarity between the two figures, we chose 600 US$ as an "empirical" filing threshold to delimitate top groups [16]. Figure 2.1 displays the share of tax units who were required to file an income tax return in 2005-2012 as well as the corresponding top income taxpayers. On average, our data report the income of the 5 percent richest, a figure close to what we observe in other developing countries [17].

Figure 2.1: Proportion of tax returns in Lebanon, 2005-2012



Sources: author's computations using income tax returns and tax units estimates, see Table B.3 in Appendix.

Table 2.1 presents the thresholds, the average income levels and the number of tax units in each fractile for the year 2012 [18]. In 2012, there were over 3.4 million tax units in Lebanon. The top percentile (P99), composed by the richest 34,675 tax units, had on average almost 145 million LBP (PPP US$ 166,800). To belong to the top 1 percent, one needed to earn more than 60 million LBP per year (PPP US$ 71,435). To belong to the top 0.01 percent (347 richest), one needed to earn more than 850 million LBP (PPP US$ 984,678) and the average income above that threshold was over 2.4 billion LBP (PPP US$ 2.8 million).

16. In Appendix B.2.2, we present other statistics that corroborate this choice.
17. 5.6 percent in Argentina in 1997, 3 percent at the beginning of the 2000s (Alvaredo, 2010, Table 2); 4 percent in India at the end of the 1990s (Banerjee, Piketty, 2004, p3.).
18. See Table C.2. and C.4 in Appendix C. for all years.

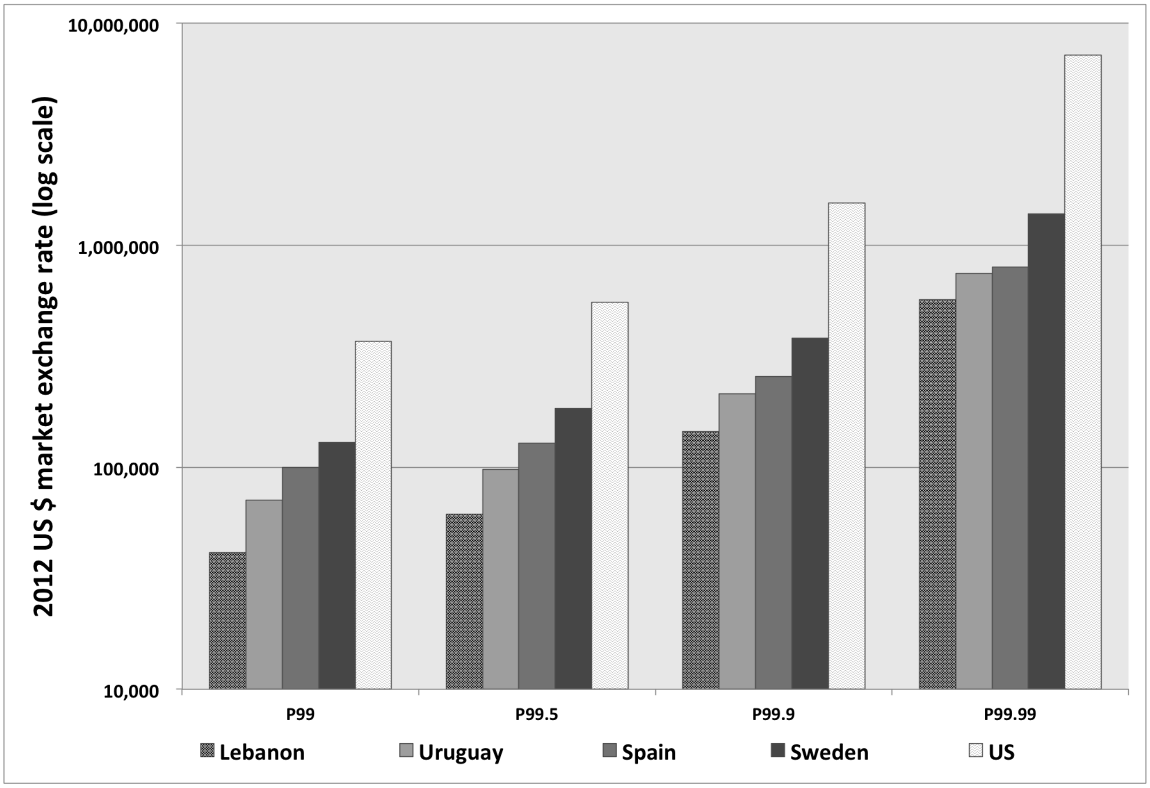
Table 2.1: Thresholds and average income in top income groups in Lebanon, 2012

	Thresholds				**Average**		
	LBP ('000s)	US$	US$ PPP	Tax units	LBP ('000s)	US$	US$ PPP
P95	20,400	13,532	23,467	173,373	55,600	36,882	63,958
P99	62,100	41,194	71,435	34,675	145,000	96,186	166,797
P99.5	92,600	61,426	106,520	17,337	215,000	142,620	247,320
P99.9	218,000	144,610	250,771	3,467	560,000	371,476	644,182
P99.95	316,000	209,619	363,503	1,733	861,000	571,144	990,429
P99.99	856,000	567,828	984,678	347	2,420,000	1,605,307	2,783,785

Sources: author's computations using income tax returns and tax units estimates.
Note: US$ at market exchange rate, 1$= 1507.5 LBP.

To put these statistics in a global perspective, Figures 2.2 and 2.3 display the thresholds for different percentiles in selected countries in 2012, in US$ and in PPP US$ respectively. A first point to note is that Lebanese income thresholds are below those of the U.S. : Lebanon's 2012 P99.9 threshold (PPP US$ 250,771) is below U.S. 2012 P99 threshold (US$ 369,140; see Piketty and Saez, 2007) and Lebanon's P99.99 threshold is well below U.S. 2012 P99.9 threshold (PPP US $ 984,678 versus US$ 1,548,400). When we consider income, excluding capital gains, the average American in the top 0.01 percent is almost ten times as rich as his Lebanese counterpart: US$ 19,280,913 versus PPP US$ 2,783,785.

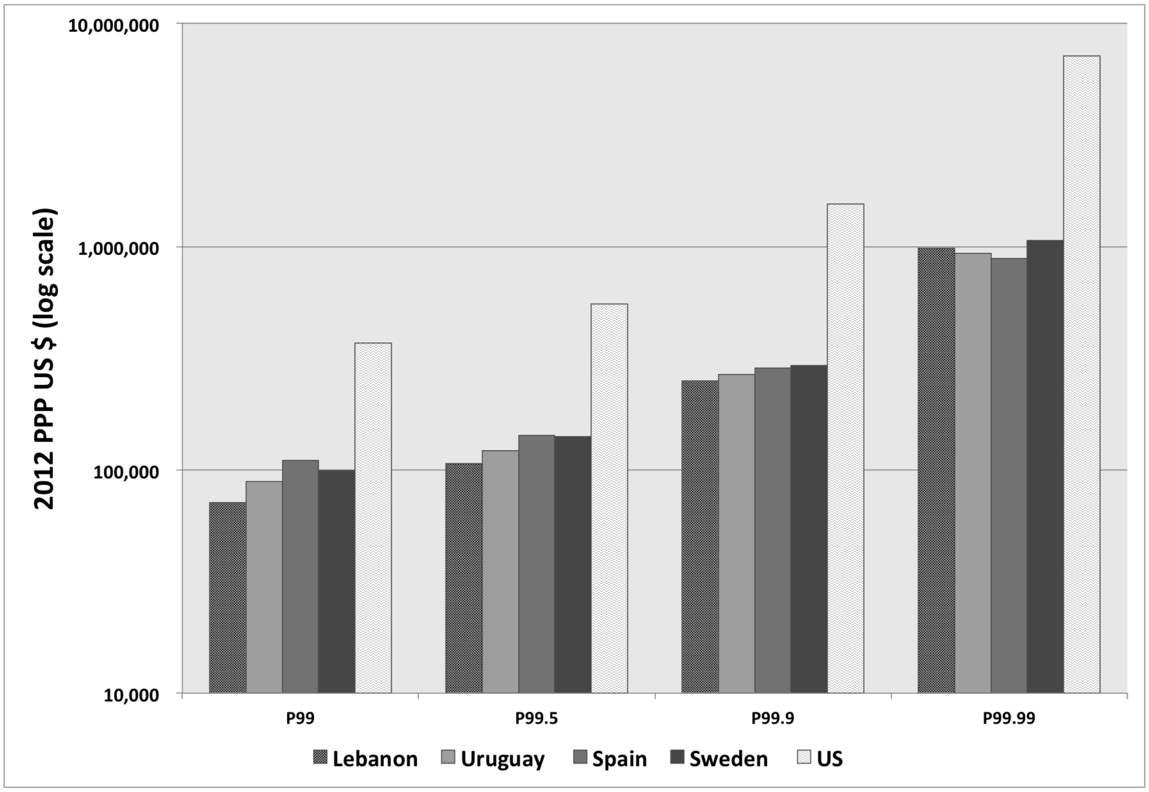
Figure 2.2: Thresholds for different percentiles in Lebanon, Spain, Sweden and the US, in US $ (market exchange rate) in 2012



Sources: World Top Incomes Database and author's computations using income tax returns and tax units estimates, Table C.2 in Appendix C.

A second point to note is that top incomes in Lebanon are similar to those in Spain, although the average income per adult is twice as large in Spain (2012 PPP US$ 23,868 for Spain against 2012 PPP US$ 10,369 for Lebanon, see Alvaredo and Saez, 2009). Indeed, Spain's 2012 P99.9 threshold is only 12 percent higher than what we observe in Lebanon (PPP US$ 285,517 versus PPP US$ 250,771). The average income of the top 0.01 percent is almost 30 percent lower in Spain than in Lebanon: PPP US $ 1,991,784 for Spain versus PPP US $ 2,783,785 for Lebanon. Even though Spain is on average richer than Lebanon, the super-rich in Lebanon are roughly comparable or even richer than their Spanish counterparts.

Figure 2.3: Thresholds for different percentiles in Lebanon, Spain, Sweden and the US, in PPP US$ in 2012

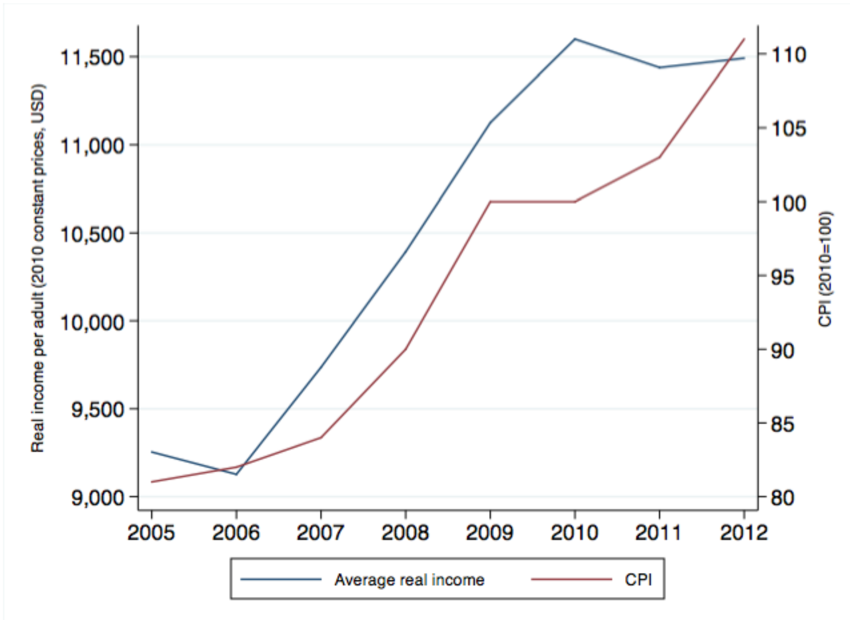


Sources: World Top Incomes Database and author's computations using income tax returns and tax units estimates, Table C.2 in Appendix C.

2.2.4 Control total for income

Finally, the amount of income accruing to each fractile must be divided by an estimate of total personal income. This denominator is theoretically defined as the income that would be reported on the tax returns if all tax units were required to file one. The income denominator cannot be derived from our fiscal data, since they concern a well-off minority of the population. Using the Lebanese National Accounts, we approximate the income denominator by the sum of Compensations and other income revenues (1) and social security benefits (2) but net of social security contributions (3) and net of interests incomes (4), partially reported and exempted by the personal income tax. This procedure generates a reference income equals to 55 percent of GDP on average between 2005 and 2010 (see Appendix B.3). Given the uncertainty surrounding the determination of the income denominator, we finally took a value of 60 percent of GDP for the total personal income. To get an overview of our sample period, Figure 2.4 displays the average real income per adult, estimated by the total controls for population and income, along with the consumer price index for 2005-2012.

Figure 2.4: Average real income and consumer price index in Lebanon, 2005-2012



Sources: Lebanese National Accounts, see Table B.3 in Appendix B.
Notes: The figure reports the average real income per adult (aged 15 and above), expressed in real 2010 euros. CPI index equals 100 in 2010. 1 US$= 1507.5 LBP. Average income in 2012 is 11,500 US$ per year.

2.3 Use of fiscal data

2.3.1 Advantages of fiscal data

Income tax data have several key advantages. First, top income shares matter from a political economy perspective, as they affect perceived and real fairness of the distribution (Atkinson, 2007a). To the extent that they represent between one third and one half of total income of a given economy, they contribute to the determination of the entire shape of the income distribution and to growth. Second, fiscal data are more reliable than survey data, especially for estimating the top distribution of incomes, as household surveys traditionally suffer from top coding problems, truncations and missing answers at the top. They hence significantly underestimate income concentration (Burkhauser et al., 2012; Szekely & Hilgert, 1999). Third, they can provide accurate estimates of the Pareto and inverted Pareto coefficients (see Section 5).

Nevertheless, this paper differs from the majority of top income studies inasmuch as it uses micro-tax data and not tabulated income data, the latter giving the number of taxpayers for a given bracket of income. The only pieces of work using similar methods are those of Gustafsson and Jansson (2007) for Sweden, of Alvaredo and Londoño Vélez (2013) for Colombia and Burdín et al. (2013) for Uruguay. Micro-tax data provide richer information than tabulated income tax statistics. With micro-tax data, there is no need to make Pareto interpolations to determine the amount of taxable income accruing to each group [19]. Top shares as well as the income thresholds can be directly computed. However, when capital gains are not included in disposable income, as it is the case in Lebanon and in many other countries, the micro data approach is less

19. Pareto interpolations are necessary with tabulated data, as intervals reported in tax returns usually do not coincide with the percentage groups of the population of interest.

attractive. When possible, the approach would gain being completed by household surveys, which include capital gains in the definition of disposable income.

2.3.2 Incomplete coverage of income due to tax evasion, exemptions and corruption

The use of tax data is not without drawbacks. Data collection is the result of an administrative process that does not take into account researchers' needs. The definition of income depends on the legislation in force and on the prevalent political views. Income taxes are paid only by a small part of the population. More importantly, the results may be biased by three other weaknesses, particularly prevalent in developing countries: tax evasion and tax avoidance (1), exemptions and exaggerations of allowable deductions (2), informality, corruption and cronyism (3). These issues are widespread in Lebanon, which is often considered as a "fiscal paradise" (Maroun, 2000; Corm, 2012):

(1) The possibility of tax evasion can bias our estimations of top income shares and the interpretation of their dynamics. This problem is particularly acute in Lebanon. Anecdotal evidence indeed suggests that consequent amounts of income or wealth continue to elude tax returns collection[20]. Gaspard (2004, p228) argues that "*Tax evasion by private enterprises is widespread; it is also an accepted and tolerated norm of behavior in Lebanon. Unofficial estimates in the early 1960s put the rate of tax evasion at 75 percent in private business and at 90 percent in the liberal professions. This is not an exaggeration since nominal tax rates have averaged 20 to 25 percent of private enterprise income, i.e. more than 10 percent of GDP*"[21]. Indeed, the schedular income taxes offer many tax loopholes. For example, under in the Lebanese profit tax, taxpayers have the possibility to avoid paying by choosing the regime by which they will be taxed, or by playing with the legal forms of their company[22]. As a consequence, some taxpayers may shift their income from the personal to the corporate tax base, or create "fictitious" uni-personal firms to decrease their tax liabilities, thus reducing the reported income for a given actual personal income. Besides, the Bank Secrecy in force since 1956 prevents any investigations or fiscal controls both on banks and their clients' profits. The Law of 20 June 1961 made official the privileges of the banking sector by suppressing all fiscal controls on banks' activities[23]. As a result, the Lebanese fiscal authorities can only estimate banks' real profits by comparing them to companies of equal size. This approximate control amounts to submitting the banking sector to a lump-sum tax scheme, although banks should be subject to the real profit scheme according to the legislation[24]. To the extent that the banking sector represents a large part of Lebanon's economy (services and banking sector represent 70 percent of the country's gross national product), the Bank Secrecy allows for significant tax evasion. Additionally, *variation* in the amount of income evading tax can bias our analysis of the dynamics of income concentration. Indeed, even if our period of study is short, with no major fiscal reforms, the assumption that the incentives of the richest to evade income tax have remained constant is contestable, especially given the great political instability that began in 2005.

(2) Large amounts of income are exempted from the income tax. Additionally, deductions and abatements are considerable[25].

20. In an interview given to "Les Cahiers de l'Orient" in 2013, Georges Corm, former Ministry of Finance, claims that "*It is a national game to avoid taxes. Taxation is particularly weak on what we can call "rentiers" revenues (placements, capital interests, capital gains, built property rents, bank deposits). The majority of taxable income escapes from any kind of taxation*" ("*There is no Lebanese miracle*", in Liban: Et maintenant on va où?, les Cahiers de l'Orient, 2013).

21. On tax evasion, see also Issawi, C. (1964). "Economic development and liberalism in Lebanon", The Middle East Journal, 18(3), Summer: 279-292, p. 290.

22. See Appendix A.

23. See Fahrat, R., *Le secret bancaire, Etude de droit comparé (France, Suisse, Liban)*, Paris, 1970, p. 106.

24. Article 11, Decree-Law.144.

25. Permanent and temporary exemptions are presented in detail in Appendix A.2.

(3) Other factors such as corruption or the influence of religious interest groups, particularly powerful in Lebanon, may affect income tax figures. The functioning of the Lebanese consociational democracy and its political consequences are well documented (Amil, 1966; Salibi, 1988; Kedourie, 1994; Fisk, 2001). The analyses converge on the idea that the distribution of power according to the different religious communities impedes the emergence of the rule of law, which goes along with transparent administrations (Harb, 1999; Jawad, 2009; Corm, 2012). Indeed, the current political organization favors the development of an oligarchy concentrating power among an ethnic elite, also known as "spiritual families" or "Great families" or the "Zuama", who have their own political leaders (Salibi, 1988, p216). Most of today's political and administrative elite belongs to families ruling the State since the Independence. This political organization offers fertile grounds for fiscal privileges, cronyism and corruption. Another consequence of this system is a pervasive informal economy. Existing estimations suggest that such activities represent approximately 30 percent of GDP (Schneider, 2002, p8-9). A great part of this hidden face of the Lebanese economic system concerns the exploitation of hundreds of thousands of Syrian workers [26]. More generally, only 35 percent of the labor force is protected by the Labour Code [27]. Since tax data are unable to report incomes generated by this hidden face of the Lebanese economic activity, top income shares are underestimated.

26. Working mostly in the agricultural and building sectors, they receive wages often far below the minimum wage, without any social security. Their abundant supply nourishes their exploitation and induces a stagnation of wages. They therefore receive a meager portion of the income generated in Lebanon. The extent of this phenomenon is difficult to measure. Existing estimates vary between 300,000 and 750,000 workers (see Elisabeth Longuenesse, "Travailleurs étrangers, réfugiés syriens et marché du travail", Confluences Méditerranée 2015/1 (N92), p. 33-47. DOI 10.3917/come.092.0033).

27. Rozelier, M. "Le code du travail, enfin", in Le Commerce du Levant, June 2011, p. 92., cited by Longuenesse, E. op. cit., p36.

3 Context

3.1 General overview of Lebanon's political and social economy

"*The history of the distribution of wealth has always been deeply political, and it cannot be reduced to purely economic mechanisms. [...] It is shaped by the way economic, social, and political actors view what is just and what is not, as well as by the relative power of those actors and the collective choices that result. [...] How this history plays out depends on how societies view inequalities and what kinds of policies and institutions they adopt to measure and transform them.*"
Thomas Piketty, (2014) *Capital in the Twenty-First Century.*

3.1.1 Opting for "laissez-faire" and economic liberalism: 1943-1975

"*Enrichissez-vous*", Michel Chiha, (1944) *Le jour.*

When Modern Lebanon became fully independent in 1943, intense intellectual debates took place in order to define the economic system to adopt and the role Lebanon could play at the regional level. The Lebanese authorities finally opted for laissez-faire: in 1948, a decree authorized free foreign exchange transactions and formally relaxed most foreign exchange controls. In 1950, the Lebanese Pound was created, freely convertible, and Lebanon left its customs union with Syria, which was becoming more and more protectionist. The option of a laissez-faire regime was justified by a common ideology regarding Lebanon's identity as a "*Merchant Republic*" (Gates, 1998), with a pluralist, multi-confessional and open society. In this regard, the work of Michel Chiha, a liberal thinker who contributed to the elaboration of the 1943 National Pact, had a great influence. He defended the idea that, in order to protect the country's cultural and religious diversity, the State should not intervene in the different confessional communities affairs and, consequently, in the economy as a whole [28]. Only a minimum state intervention could protect the "confessional" nature of the State [29].

The economic and social development model chosen was mainly based on "financial-mercantile capital" (Leenders, 2004, p173): the country's productive sectors were neglected in order to encourage services (mainly commercial and banking services, tourism). In 1956, a Bank Secrecy Law was adopted to facilitate the rise of Beirut as financial center of the Middle East, absorbing large inflows of foreign currencies from the region and in particular from Gulf countries. As such, Lebanon's economic model is hybrid, different from the mixed market economies prevailing in Western countries, but also different from the state dirigisme prevailing in the developing world and in the Middle East in particular. Given the prosperity experienced by the country between 1950 and 1974 [30], but also its dynamic banking sector and its favorable tax law, Lebanon was commonly labeled the "*Switzerland of the Middle East*" [31]. If the country was held as a model of modernization and economic success in the Arab world, Lebanon's orientation towards laissez-faire liberalism, with a minimalist state and a weak fiscal structure, severely increased social inequalities [32].

28. Michel Chiha, *Politique intérieure*, Publication de la Fondation Michel-Chiha, Trident, Beyrouth, 1964.
29. Mahdi Amil, *L'Etat confessionnel*, La Brèche, Paris 1966 (traduit de l'arabe).
30. The country had high literacy, life expectancy and education rates in comparison with its neighbors. The average growth rate was 16 percent per year during the period (Leenders, 2004, p170).
31. Following Jacques Tabet's 1924 book *Pour faire du Liban la Suisse du Levant. Aperçu sur les conditions politiques, économiques et touristiques des deux pays.* Details about the rise of this idea are given in Carolyn L. Gates, *The merchant Republic of Lebanon. Rise of an Open Economy*, The center for Lebanese Studies, Londres 1998.
32. Against the vision of Lebanon as an economic model, see Gaspard (2004); Dubar, C. and Nasr, S. (1976); Nasr, S. (1978).

3.1.2 A "developmental" parenthesis: the Presidency of Fuad Chehab, 1958-1964

"*A presque tous les niveaux, le Liban constituait le modèle et le moteur du monde arabe ainsi que sa vitrine [...]. Tout le monde parlait du "miracle libanais". Ce miracle, avec toutes les réalités qu'il impliquait, n'aurait-il été rien de plus qu'une illusion momentanée?*"
Kamal Salibi (1988) *Histoire du Liban du XVIIIème siècle à nos jours.*

The 1959 civil troubles jeopardized Lebanon's economic model and the mythology of a "*Lebanese miracle*" and left scope for a reformist criticism of economic and public policy, under the presidency of Fuad Chehab. Historiography now looks at Chehab's Presidency as the only period in Lebanon's modern history when "*there truly was a socially conscious developmental state*" (Jawad, 2009, p79). Chehab's presidency is analyzed as an attempt to consolidate the State and build strong institutions. Contrasting with the liberal tendency prevailing since 1943, "*it is the only "developmental" period in the history of modern Lebanon, when economic and social development was set by the political regime as a major national objective*" (Gaspard, 2004, p62).

Concerning the objective of building and consolidating the state institutions, the main achievement of Chehab's Presidency consisted in the creation of a civil service board, the Lebanese Central Bank, a general inspectorate, a Ministry of Planning, a Social Development Office and a Central Statistics Administration. A regular compilation of national accounts data began in 1964. A social security law was drafted and finally accepted in 1965. Social spending increased significantly, with a special emphasis on education and school enrollment, water and electricity supply systems. Finally, Chehab administration's commitment to a developmental approach was best confirmed by its commissioning a French consultancy firm to conduct a national socio-economic survey, in order to determine the income distribution of the different regions (see the discussion in Introduction). The results of the survey were the basis of Chehab's reform program. In particular, they led to a major fiscal reform and reinforcement of direct taxation in 1959, with an increase in top marginal rates (see Figure 6.1). Historiography on Chehab's presidency presents a contrasting picture of its achievements [33]. In 1974, on the eve of the civil war, the economic model depicted above prevailed, with a liberal economic system and a weak welfare state.

3.1.3 The Reconstruction period: 1990-2005

"*C'est la population libanaise, résidente ou émigrée, qui a été la grande absente du processus de reconstruction*", Corm, G., (2012) *Le Liban contemporain: Histoire et société.*

The Lebanese civil war deeply impoverished the country, with an estimated decline in the GDP of two-third between 1975 and 1990, a decrease in the average income per capita to less than 1,000 US$ per year, a period of hyperinflation, reaching 400 percent in 1987 and a sharp increase in unemployment [34]. Lebanon lost its - real or perceived - status of economic model in the Arab world, as well as its role of financial center in the region. Most analyzes converge on the idea that the priority for postwar governments was to promote a return to the economic system prevailing before 1975. A commitment to minimal state intervention and laissez-faire policies was even reasserted in the 1989 Ta'if Accord and in the preamble of the postwar new Constitution [35]. To describe the policy decisions made during the 1990s in order to favor a return of Lebanon to its past economic model, Corm (2012) coined the term "*New ideology of the Reconstruction*" (Corm, 2012, p237). This ideology celebrated the long-lasting entrepreneurial tradition in Lebanon, personified by the

33. About the achievements of Chehabism, see Corm, G. *Politiques économique et planification au Liban 1954-1964*, Imprimeries universelle, Beyrouth 1964; Dagher, A., "*L'Etat et l'économie au Liban, action gouvernementale et finances publiques de l'indépendance à 1975*", Les cahiers du Cermoc, no. 12, Beyrouth 1995; Fevret, J-M., *Le Liban au tournant. L'anémone pourprée*, Geuthner, Paris 2011.

34. Khalidi-Beyhum (1999), p45 cited in Jawad (2009).

35. Chaiban, A. (1997), "*Les aspects économiques de Taef: une doctrine économique?*" Travaux et Jours, no. 59, provides a detailed analysis of the references to laissez-faire in the two texts.

business tycoon, billionaire and prime minister Rafik Hariri. State and collective action were still viewed as sources of distortion, hampering the effectiveness of private enterprise and entrepreneurial spirit. As a consequence, the reconstruction plan focused on infrastructures, in particular in Beirut, rather than on social issues.

Concretely, the reconstruction plan targeted land and financial sectors [36]. In accordance with the principle of minimum state intervention, the private sector had a dominant role in the realization of the plan [37]. Major tax reforms were also undertaken in order to attract capital held by the Lebanese diaspora. Top marginal rates on corporate profits and on labor incomes were decreased to 10 percent. Incomes from movable capital were taxed only at 5 percent, and capital gains from financial activities or from built properties were exonerated. Withholding interests on bank deposits or treasury bonds were completely exonerated from taxes [38]. Traders based on the territory could enjoy two free zones, exempted from taxation for 10 years. In 2000, all companies based in the South of Lebanon were exempted from paying any taxes. In 2002, a 10 percent value-added tax was introduced. Contrarily to what is commonly seen in postwar periods, no exceptional tax was implemented.

All these measures were aimed at facilitating a return to Lebanon's past regional role and to its economic model of a "Rentier State" (Beblawi,1990), relying mainly on the tertiary sector and deriving most of its revenues from remittances, land and financial rents. However, little effort was made to take into account changes that occurred in the region during the war and to reassess understanding of the country's economic history. As a consequence, the country underwent a major economic crisis in the 1990s, with waves of land and financial speculations. In particular, an intensive speculation against the Lebanese Pound led to the sharp depreciation of the currency [39]. This collapse in the exchange rate caused hyperinflation, in the order of 116.56% in 1990 and 131.1% in 1992. From 1996 onward, growth stagnated and per capita real GDP decreased sharply. Additionally, to stop the depreciation, nominal interest rates were drastically increased up to 45 percent for 2-year Treasury Bonds. The interest rate differential with bonds in dollars (attaining over 30 percent between 1993 and 1996) allowed an easy, rapid and massive enrichment of subscribers to treasury bills in Lebanese Pound. On average, the real interest rate on bank loans in LBP was 13.57% in 1997, 14.57% in 1998 and 16.74% in 1999 (Maroun, 2000, p176). The cost of this speculative movement was entirely borne by the public treasury.

The economic crisis had major social consequences. Analyzing the 1997 survey in this context, Maroun (2000) concludes that it led to a polarization of the Lebanese society and to an increase in social inequalities. Indeed, the mechanisms described above mainly benefited the richest and left a major part of the population impoverished. The decrease in the exchange rate coupled with hyperinflation led to a sharp increase in the cost of living for fixed, low and middle incomes (salaries, treatments, rents). He estimates that the purchasing power of households' average income declined by 12 percent between 1992 and 1997 [40]. In the end, banks were the main beneficiaries of these speculative movements -which they themselves initiated- in a context of a low growth rate coupled with one of the highest interest rate in the world. According to Gaspard (2004, pp219-220), the "*reconstruction program effectively involved massive financial transfers to the political*

36. The plan and its financing are detailed in a document called "*Horizon 2000*". Emphasis was put on rehabilitating water and electricity distribution but also on building a new airport, telephone and freeway networks.

37. For instance, Beirut's rehabilitation program was entrusted to a private company called "*Solidere*" (Lebanese Company for the Development and Reconstruction). Solidere was not subject to any governmental control and was exempted from all types of taxation, for ten years. Most of the company's shares were held by the administrative and political elite (Corm, 2012).

38. The progressive nature of the Income Tax was nevertheless reviewed in the 1999 Finance Law: top marginal rates on profits and labor incomes were increased to 21 and 20 percent respectively, while the rate on movable capital was increased to 10 percent - however, in case of an IPO or if a foreign partner acquired holdings in the company, the rate was decreased to 5 percent.

39. The U.S dollar exchange rate increased from 3.92 to 1,850.62 Lebanese Pound from 1982 to 1992, with an average depreciation per year of 46 percent (Maroun, 2000).

40. In 1984, the systematic and proportional adjustment of salaries for inflation *de facto* stopped.

elite and banks. The mechanisms used have been fiscal spending and the interest and exchange rate policies [...] Government expenditure has therefore become a mechanism of money transfer to rentiers and to the politically privileged. [...] The combination of high nominal interest rates and price stabilization, the latter mainly owing to the exchange rate policy, has produced a situation of high real interest rates that averaged 11 percent during 1993-2002. The impact of the high cost of money has mainly been a delinking of the financial sector from the real sector, and of economic opportunity from the majority of people and enterprises".

Maroun (2000) summarized the effects of these mechanisms in the following table:

Table 3.1: Distribution of households according to their monthly income and the socio-professional category of the household head, between 1974 and 1999 (%)

Monthly income	**Low-incomes class (< 800 US$)**	**Middle-income class (800-1600 US$)**	**Upper-income class (> 1600 US$)**
1974	20.4	60.1	19.5
1988	57.7	38.3	4
1992	49.5	40.2	10.3
1997	54.6	29.7	15.7
1999	61.9	29.3	8.8

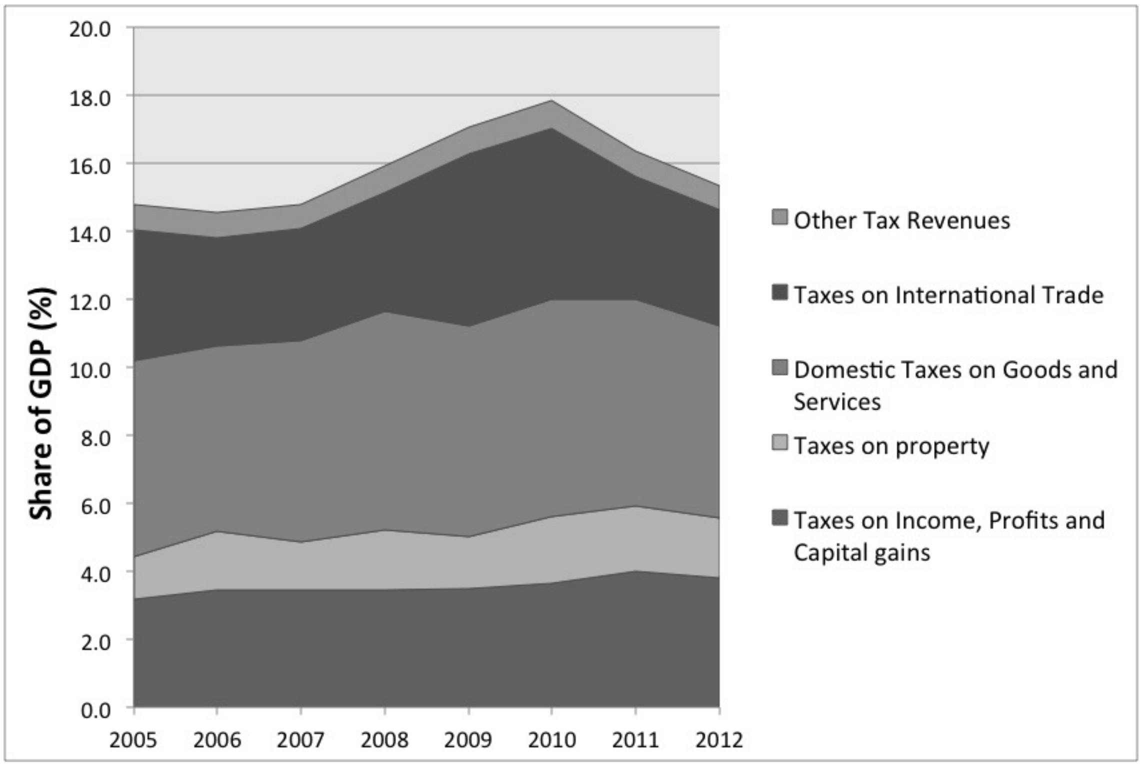
Source: Maroun (2000, p172/ Table 3).

The bottom of the income distribution was the most affected by the economic crisis. The 1990s led to a polarization of the society, with a reduction of the middle class: the share of upper-income households is divided by two while the share of lower income households is multiplied by three.

3.2 Presentation of the Lebanese fiscal system

The Lebanese tax revenues represented 15.3 percent of GDP in 2012, with an average of 15.8 percent between 2005 and 2012 (see Figure 3.1). Lebanon is hence slightly above the world average of 14.3 percent of GDP in 2012[41]. According to the World Bank, low income and lower middle-income countries have levels varying between 10 and 15 percent of GDP[42]. However, upper middle-income countries can have levels close to 20 percent[43].

Figure 3.1: Tax Structure in Lebanon in shares of GDP, 2005-2012

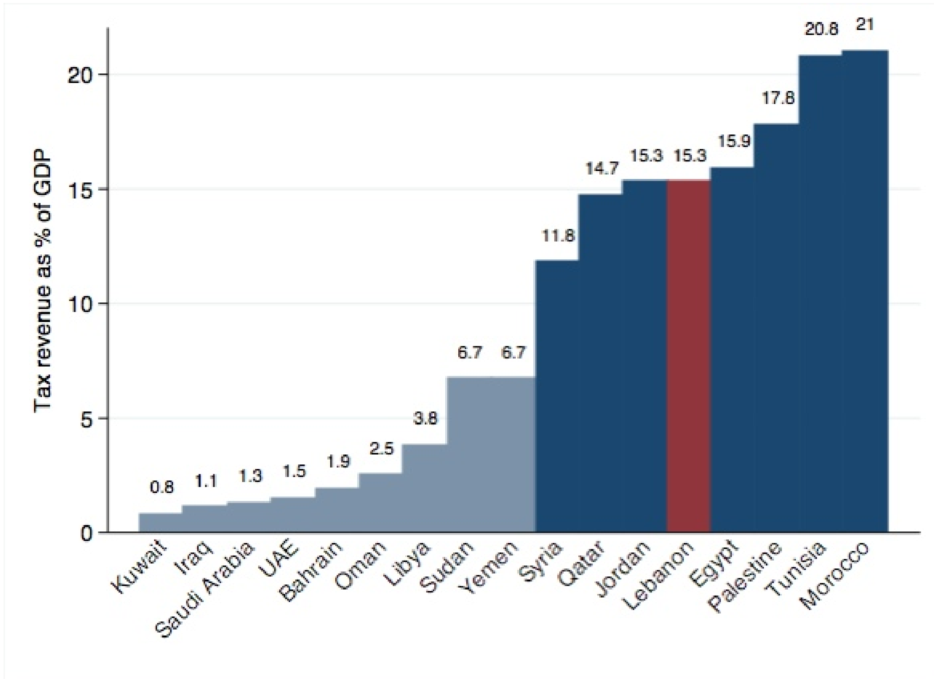


Sources: Annual Public Finance reports, Ministry of Finance, Table A.2 in Appendix A.
Note: "Other taxes" mostly include fiscal stamp fees.

In the Arab region[44], figures are relatively low and vary a lot across countries (ESCWA, 2014, p7). On average, tax revenues represent less than 10 percent of GDP, but countries are either far below or above the average (see Figure 3.2). Yet, the Lebanese tax-to-GDP ratio remains far below OECD countries (33.8 percent in 2009), which represents the first major limit to adequate public redistribution.

41. World Bank, World Development Indicators database.
42. Ibid.
43. Ibid.
44. The countries taken into account are Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Republic of the Sudan, The Syrian Arab Republic, Tunisia, The United Arab Emirates and Yemen.

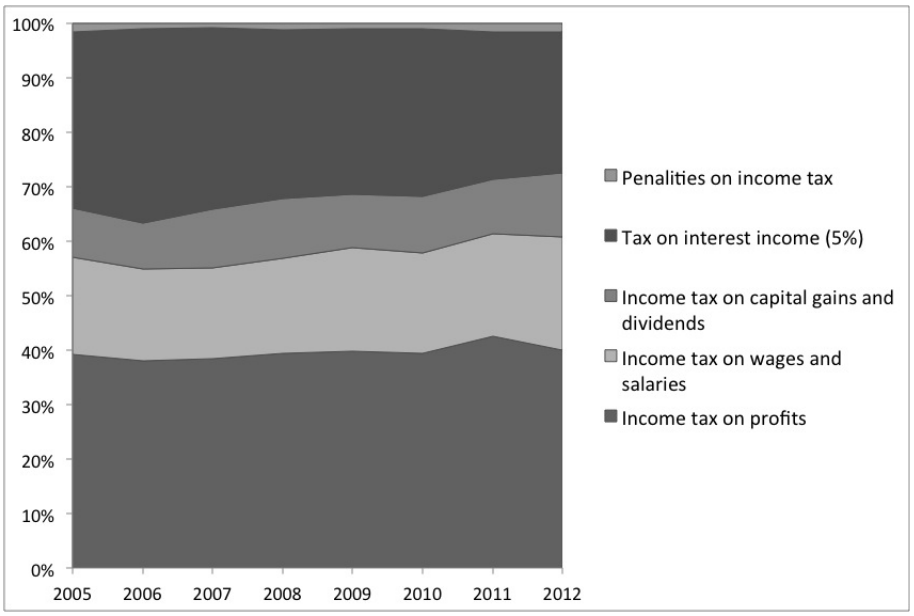
Figure 3.2: Levels of tax revenues as share of GDP in the Arab region



Sources: UN-ESCWA (2014); Bahrain: Ministry of Finance; Egypt: Ministry of Finance; Iraq: Central Bank of Iraq; Jordan: World Bank data; Kuwait: World Bank data; Lebanon: Ministry of Finance; Libya: IMF data; Morocco: Ministry of Finance; Oman: National Centre for Statistics and Information; Palestine: Ministry of Finance; Qatar: World Bank data; Saudi Arabia: IMF data; Republic of the Sudan: Central Bank of Sudan; Syria: Central Bank of the Syrian Arab Republic; Tunisia: Ministry of Finance; United Arab Emirates (UAE): Central Bank of the United Arab Emirates; Yemen: Central Statistical Organization. GDP data are derived from World Bank sources, except for Libya (IMF data) and Palestine (Palestine Monetary Authority).
Note: For Iraq, Saudi Arabia, Bahrain, Oman, Yemen, Jordan, Lebanon, Egypt, Palestine, Tunisia and Morocco, figures are for 2012; for Libya, Sudan, Syria and Qatar, 2010; for Kuwait 2011, and the UAE 2007.

To gain further insight into the redistributive capacity of the tax system, the evolution of the Lebanese tax structure is worthy of interest. To do so, we broadly divide taxes into the following categories: (i) taxes on income, profits and capital gains (3.6 percent of GDP on average in the period), (ii) taxes on property (1.7 percent), (iii) taxes on goods and services (6 percent), (iv) taxes on international trade (3.9 percent), and (v) other tax revenues (0.8 percent). The tax structure is globally stable. Variations come mostly from changes in the amount of tax levied on international trade. Figure 3.3 decomposes the income tax ("on income, profits and capital gains"). As for the global tax structure, the decomposition of the income tax is stable between 2005-2012. Taxes on income, profits and capital gains are levied at both corporation and individual levels. The bulk of the income tax is levied on the former, which represents on average during the period 80 percent of the total income tax levied (versus 20 percent, see table A.5 in Appendix A). The fact that the income tax is levied mostly on firms mitigates the capacity of the personal income tax to reach its redistributive objectives. However, the amount of taxes related to business operations is small considering the widespread and tolerated practices of parallel bookkeeping and tax evasion (Gaspard, 2004, p110). Although the total personal income tax levied represents a small share of both total tax revenues and GDP, its proportion constantly increased throughout the period considered: in 2012, the personal income tax represented 5.3 percent of total tax revenues against 3.6 percent in 2005; similarly, it represented 3.8 percent of GDP in 2012, against 3.1 in 2005. These figures are slightly above the average of 2 percent of GDP during the 1990s (Eken, Helbling, 1999).

Figure 3.3: Structure of the income tax on wages, profits and capital gains, Lebanon, 2005-2012



Sources: Annual Public Finance reports, Ministry of Finance. Table A.4 in Appendix A.

Taxes on property are of two types : a built property tax and a real estate tax. In 2012, they represented 11.7 percent of total tax revenues and 1.8 percent of GDP.

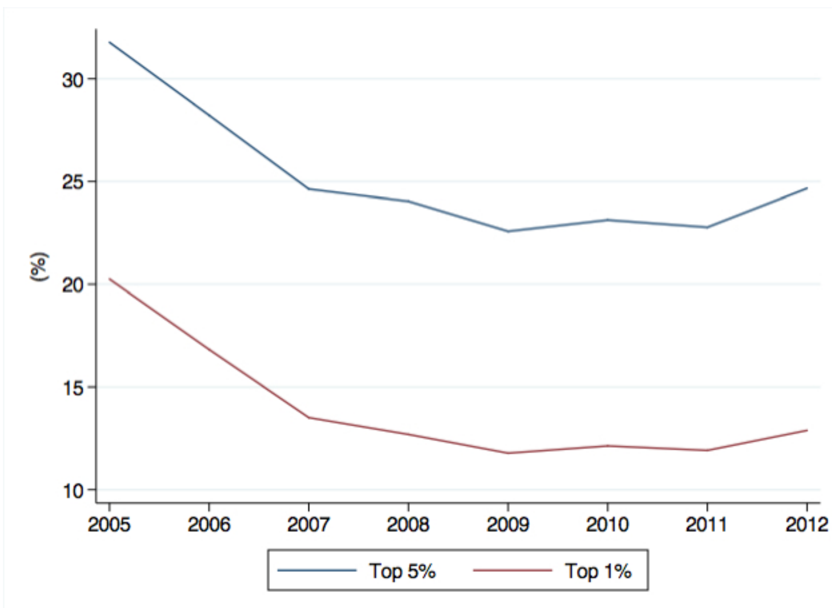
As displayed in Figure 3.1, the Lebanese tax system mostly relies on indirect taxation. This feature is common in developing countries, which depend on distortionary tax instruments rather than on a direct progressive system, yet more able to control the increase in income inequality through an effective redistributive policy (Piketty, Qian, 2009). In the Lebanese case, this predominance of indirect taxation is not new. In 1950, receipts from income taxes represented 14 percent of total tax revenues (Himadeh, 1953). According to Chelliah (1971), the contribution of direct taxes in total tax revenues was less than 31 percent for the period 1953-1955 (19 percent for income taxes and 12 percent for built property taxes), against 69 percent for indirect taxes (40 percent from custom duties and 29 percent for taxes on goods and services). Similar figures prevailed for the period 1966-1969: 28 percent versus 72 percent of total tax revenues. Domestic taxes on goods and services represented 38 percent of total tax revenues on average between 2005 and 2012. The value-added tax constitutes the bulk of this category. Created in 2001, the V.A.T represented 24 percent of total tax revenues in 2002. Its contribution rapidly increased, to represent on average 34 percent of total tax revenues between 2005 and 2012. As a percentage of GDP, it increased from 3.5 percent in 2002 to 5.1 percent in 2005 (with an average of 5.3 percent in our period of interest). Additional taxes on specific goods and services are also levied: they represent 3.8 percent of total tax revenues and 0.6 percent of GDP.

4 Results

4.1 Trends in Top Income Shares

Figures 4.1 presents the evolution of top income shares accruing to the top 5 and 1 percent of the Lebanese adult population between 2005 and 2012. Two important facts stand out. First, the top 5 and 1 percent accounted for respectively 25 percent and 14 percent of total income on average, with maximum values of 32 percent and 20 percent in 2005. Second, the evolution of the top taxable income shares follows a slight *U-shaped* curve, with income inequality decreasing in the period of inflation and growth following the 2006 war. Top income shares are likely to keep increasing in the following years due to the great inflow of Syrian migrants[45].

Figure 4.1: Evolution of top 5 and 1 percent income shares, Lebanon, 2005-2012



Sources: author's computations using income tax returns and tax units estimates. Table C.1 in Appendix C.

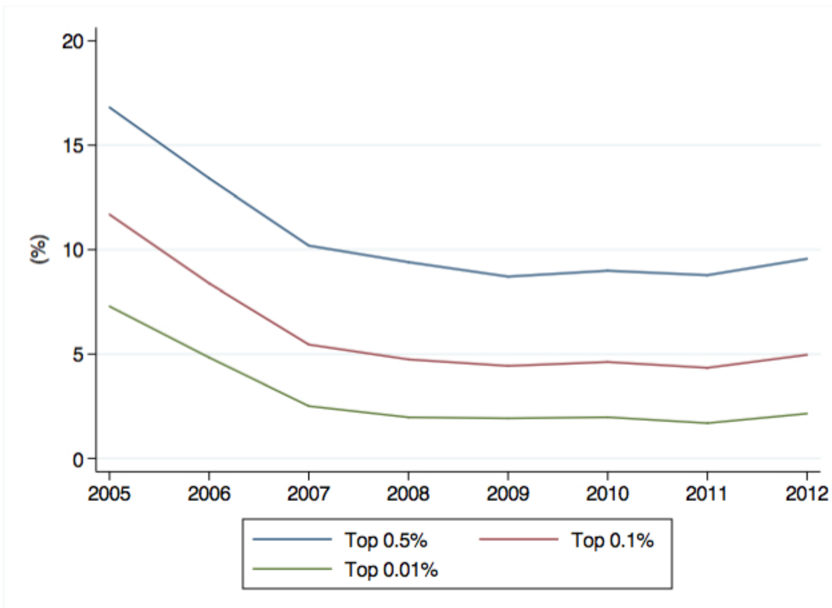
These relatively low levels, especially after 2007, can be explained by two factors.

1. First, our income definition inserts taxable profits and not the actual profits, which would take into account personal deductions, grants, allowances and benefits actually accruing to households.
2. Second, our database captures only a fraction of personal income. In particular, profits and other capital incomes are partially present.
3. Third, our results suffer from downward bias due the pervasive tax evasion and informality in Lebanon.

45. According to the World Bank, 1,000,000 of refugees came between 2011 and 2014, representing almost a quarter of the Lebanese population.

To cast further light on what is happening at the very top of the income distribution, Figure 4.2 displays the evolution of the top 0.5, 0.1 and 0.01 percent income shares. All shares present the same slight *U-shaped* pattern. A striking fact is the high level of income concentration at the very top, with an average of 3 percent of total personal income accruing to the top 0.01 and peaks of 7 and 4.8 percent for 2005 and 2006. The figures are comparable to those of the United States (with an average of 3.3 over the same period), slightly above those of Colombia and Uruguay (with averages of 2.7 and 1.7 respectively), and about twice as large as in some Southern European countries- Italy, Spain, Portugal- or France.

Figure 4.2: Evolution of top 0.5, 0.1 and 0.01 percent income shares, Lebanon, 2005-2012



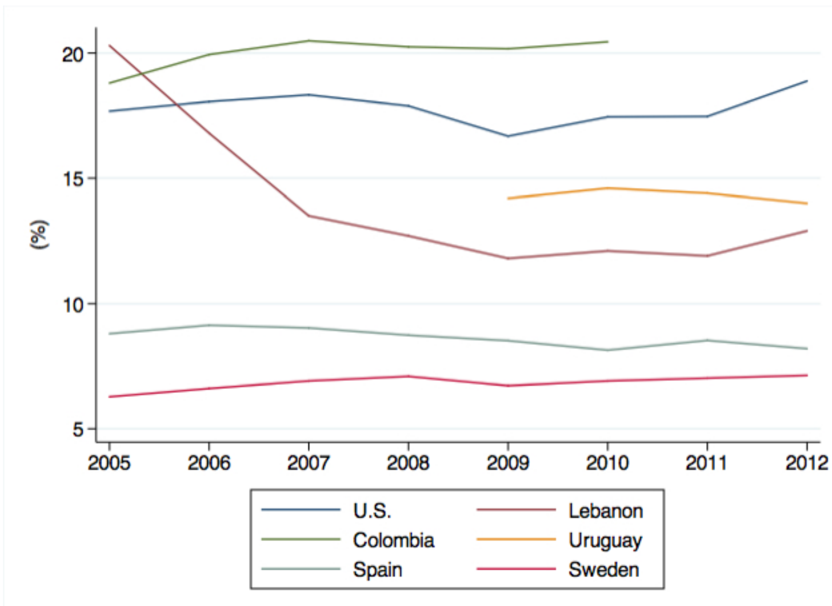
Sources: author's computations using income tax returns and tax units estimates. Table C.1 in Appendix C.

In this regard, Lebanon seems to have one of the highest records of income concentration in the world. The 2005 figures are particularly striking, all the more so as they certainly represent the most trustworthy figures, collected before the great political instability culminating with the 2006 Israeli war and after several years of reconstructions marked by a complete elusion of the social question and an important housing boom. Unfortunately, the lack of any statistics before 2005 and the biases of our own series due to the bad quality of the national accounts, make this claim impossible to establish rigorously.

4.2 International comparisons

In light of our discussion in the Introduction about the fact that is it currently impossible to evaluate Lebanon performances in terms of income inequalities, both in absolute and relative terms, Figure 4.3 contrasts the top 1 percent income share in Lebanon between 2005-2012 with selected countries. A first caveat to have in mind is the different definitions of income used for the computations across countries. Yet, income concentration in Lebanon is high compared to other developed and developing countries. Income inequalities are higher than in most European countries (Spain, Italy, Portugal, Sweden) and comparable to countries with relatively high levels by international standards, such as Uruguay. This seems to be corroborated by our findings on the inverted Pareto coefficients (see Section 5).

Figure 4.3: Top 1 percent shares in selected countries, 2005-2012



Sources: Alvaredo (2010) for Argentina, Alvaredo and Londoño Vélez (2013) for Colombia, Alvaredo and Saez (2009) for Spain, Roine, Jesper and Waldenstrom, Daniel (2010) for Sweden, Piketty and Saez (2007) for the United States and Burdín, Esponsa and Vigorito (2014) for Uruguay. All series are taken from the World Top Incomes Database. For Lebanon, author's computations using income tax returns and tax units estimates, Table C.1 in Appendix C. Notes: capital gains are excluded.

4.3 Composition of top incomes

To better understand the structure of top income shares, we decompose income into four categories: (i) Labor income (ii) Built property revenues (iii) Self-employment income (iv) Business income, including profits from sole proprietorships, partnerships, and S- corporations. Table 4.1 decomposes sub-groups within the top 5 percent into occupations. In 2005, salaries and wages represented 47 percent of the top 5 percent income share, rents 39 percent, self-employment 8 percent and business incomes 6 percent. The composition of income varies substantially within the top 5 percent. The share of rentiers increases within top groups. This phenomenon is compensated by a decrease in the share of wage earners and self-employed among the richest. Surprisingly, the share of business incomes remains relatively constant, before decreasing in the top 0.01 percent.

Table 4.1: Shares of each occupation within the top 5 percent, Lebanon 2005

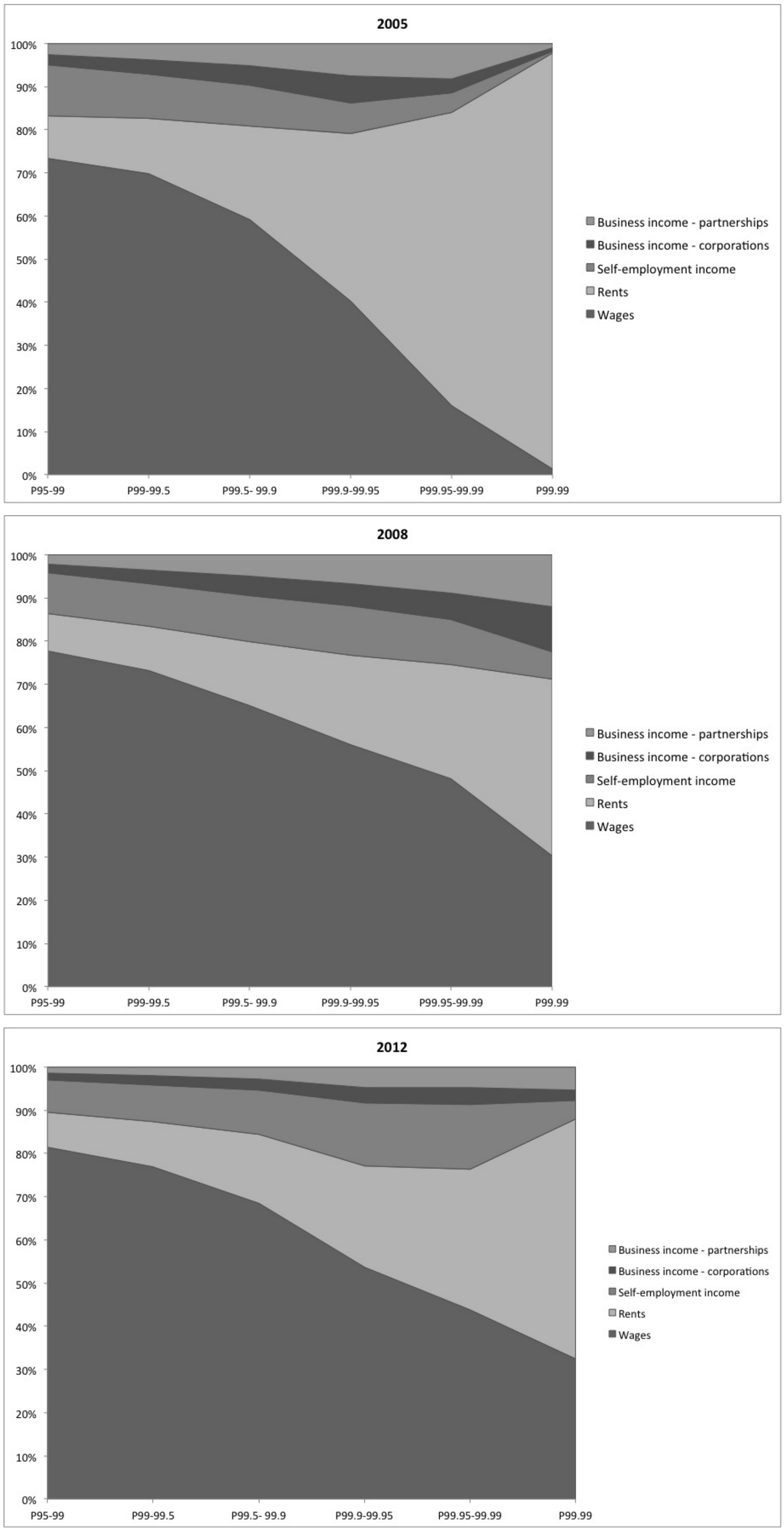
Top groups	Wages	Rents	Self-employment	Business incomes
Top 5%	47	39	8	6
Top 1%	33	55	6	7
Top 0.5%	25	64	5	7
Top 0.1%	10	82	2	6
Top 0.05%	6	88	2	4
Top 0.01%	1	96	0.5	2

Sources: author's computations using income tax returns and tax units estimates.
Note: Business incomes include profits from sole proprietorships, partnerships, and S-corporations.

Figure 4.4 enables us to analyze the composition of top incomes not only within top groups but also within our period of study. Several points stand out. First, the share of built property revenues declined and slightly recovered at the end of the period. This decrease, which translated into an increase in the share of wages, can be explained by inflation, tax evasion and by the 2006 war. The Israeli war indeed damaged more than 210,000 housings and destroyed 25,000, leaving more than 300,000 people homeless. Additionally, it triggered both a movement of emigration and internal migration towards the mountains, with an occupation of secondary residences when possible. The war can also explain this decrease by a massive movement of emigration [46].

46. Verdeil, E. "Le bilan des destructions", cited in Mermier F., Picard E., *Liban, une guerre de 33 jours*, Paris, La Découverte "Cahiers libres", 2007.

Figure 4.4: Composition of top income shares in 2005, 2008 and 2012, Lebanon



Sources: author's computations using income tax returns and tax units estimates. See Table C.11.

5 Top incomes and Pareto law

The computation of top income shares depends on the choice of the control total for income. However, some countries, and Lebanon in particular, do not have sufficiently developed national accounts to provide precise controls. This bias can be avoided by examining the shape of the upper part of the income distribution, modeled by the Pareto coefficients. These "shares within shares" depend only on the control totals for population and the top income distribution. Hence, they allow us to put in perspective the information provided by our top income shares and to gain further insight into the shape of the income distribution at the top. However, they do not compare top incomes to the average as top income shares do (Atkinson, Piketty, Saez, 2011, p18).

5.1 Inverted Pareto coefficient

This section is based on Alvaredo and Piketty (2015). It is now widely recognized that the Pareto law approximates remarkably well the top tail of the income distribution. The Pareto law has the following cumulative distribution function $F(y)$ for income y:

$$1 - F(y) = (k/y)^a, \text{ with } k > 0, a > 1$$

where k and a are given parameters, and a is called the "*Pareto coefficient*" of the distribution. The corresponding density function $f(y)$ is given by:

$$f(y) = \frac{ak^a}{y^{(1+a)}}$$

The Pareto distribution has the key property that the ratio of average income $y*(y)$ of individuals with income above a given threshold y is always exactly proportional to y :

$$y*(y) = E(z|z \geq y) = (\int_{z>y} zf(z)\,\mathrm{d}z)/(\int_{z>y} f(z)\,\mathrm{d}z) = (\int_{z>y} dz/z^a)/(\int_{z>y} dz/z^{1+a}) = \frac{a}{a-1}y$$

Hence, the ratio $y*(y)/y$ does not depend on the income threshold y:

$$y*(y)/y = \frac{a}{a-1}$$

This constant ratio is called the "*Inverted Pareto coefficient*", which will hereafter be denoted b. A higher inverse Pareto coefficient means a fatter upper tail of the distribution and thus higher inequality. For instance, an inverted Pareto coefficient of 2 means that the average income above 100,000 \$ equals 200,000 \$, the average income above 1 million \$ equals 2 millions \$ and so on. If b=3, the average income above 100,000 \$ equals 300,000 \$, the average income above 1 million \$ equals 3 millions \$. The b coefficient provides another measure of income inequality. Atkinson et al. (2011) find that it typically varies between 1.5 and 3. Values around 1.5-1.8 indicate low inequality by historical standards (with top 1 percent income shares typically between 5 and 10 percent), while values around or above 2.5 indicate very high inequality (with top 1 percent income shares typically around 15 -20 percent or higher).

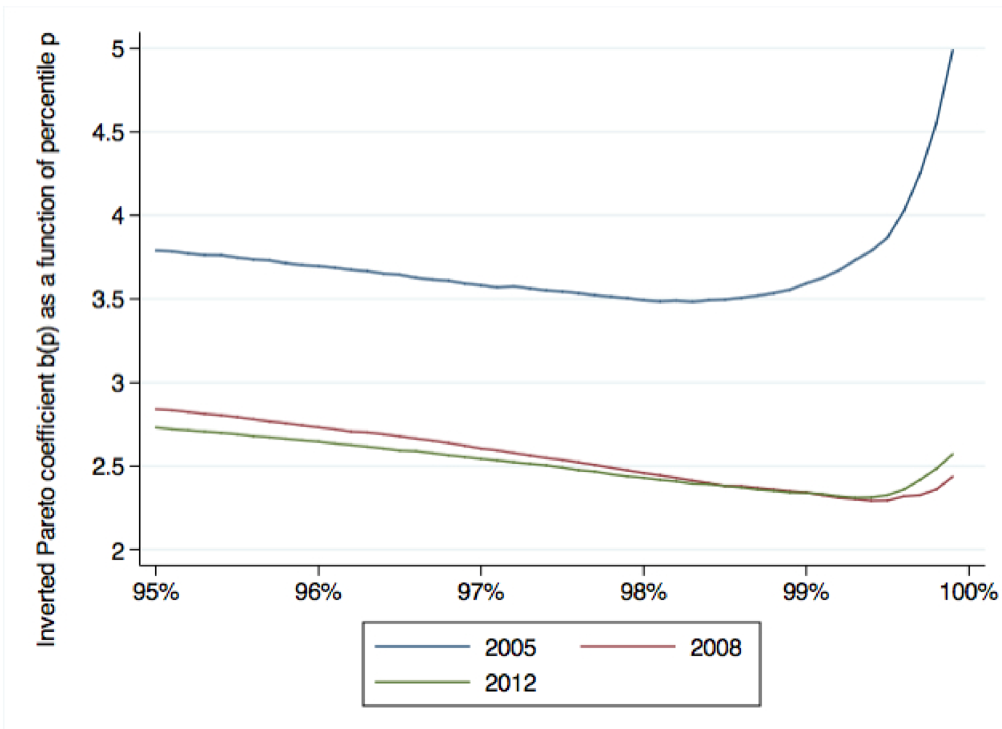
If the Pareto law provides a relatively good approximation of the top of the distribution in every country for which fiscal data are available, two caveats must be borne in mind. First, Pareto coefficients vary widely over time and across countries (see Atkinson, Piketty and Saez (2011)). Second, for a given country and year, the inverted Pareto coefficient is not exactly constant and generally rises quite substantially between the level of the top 10 percent and the level of the top 1 percent. Our computations of the inverted Pareto coefficients for Lebanon confirm this empirical feature.

5.2 Estimates of the inverted Pareto coefficient for Lebanon

5.2.1 For total income

On average, the Inverted Pareto coefficient within the top 1 percent equals 2.7 between 2005 and 2012. Our top 1 percent income shares are hence highly underestimated and should be much greater than 14 percent. In particular, the inverted Pareto coefficient within the top 1 percent equals 4.1 in 2005, the highest level reported in the World Top Incomes Database. Figures 5.1 displays the empirical inverted Pareto coefficient $b(p)$ as a function of the percentile p at which it is computed, for the years 2005, 2008 and 2012. Within the top 5 percent, we can see that $b(p)$ is only approximately constant (with a variation inferior to 1 percentage point). The coefficient rises between the level of the top 1 percent and the level of the top 0.01 percent.

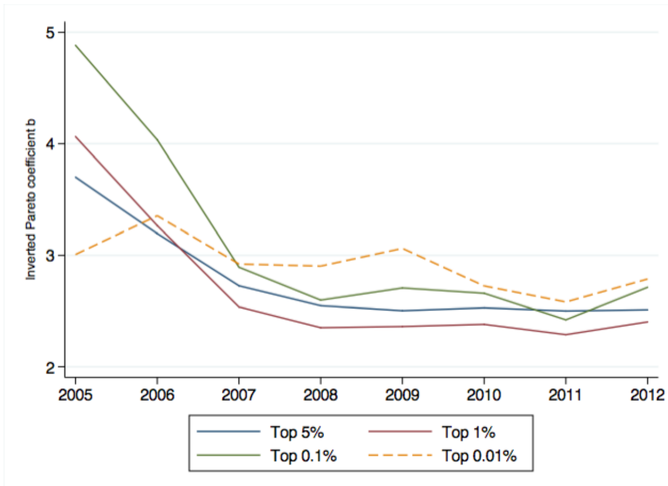
Figure 5.1: Inverted Pareto curves for the distribution of income, Lebanon, 2005, 2008 and 2012



Sources: author's computations using income tax returns and tax units estimates, see Table D.1 in Appendix.

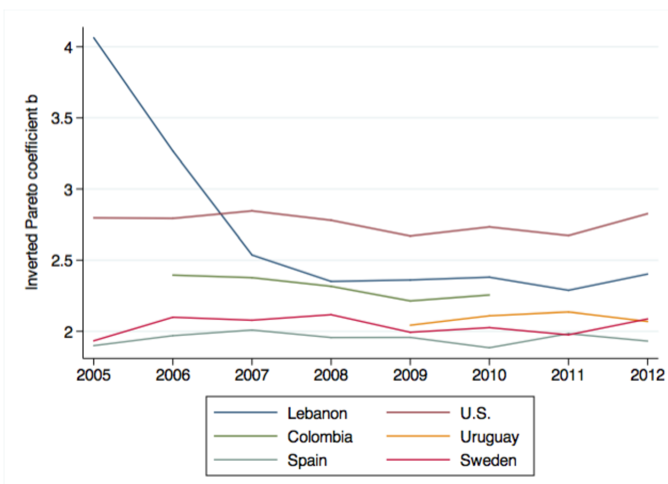
Figure 5.2 presents the average inverted Pareto coefficient within each percentile, for all years. The dynamics of the inverted Pareto coefficients are close to the dynamics of the top income shares, except for the top 0.01 percent which varied relatively less. Additionally, Figure 5.3 compares Lebanese figures with those of other countries: the inverted Pareto coefficients are similar or greater than the countries with the highest top income shares in the World Top Incomes Database. Lebanon's Inverted Pareto coefficients are either above or in between those of the United States and Colombia. The Lebanese top 1 percent income share should be in between 15-20 percent at least, contrarily to what we find.

Figure 5.2: Evolution of the inverted Pareto coefficient within different groups in Lebanon 2005-2012



Sources: author's computations using income tax returns and tax units estimates, see Table D.1 in Appendix.

Figure 5.3: Inverted Pareto coefficient within the top 1 percent in selected countries, 2005-2012

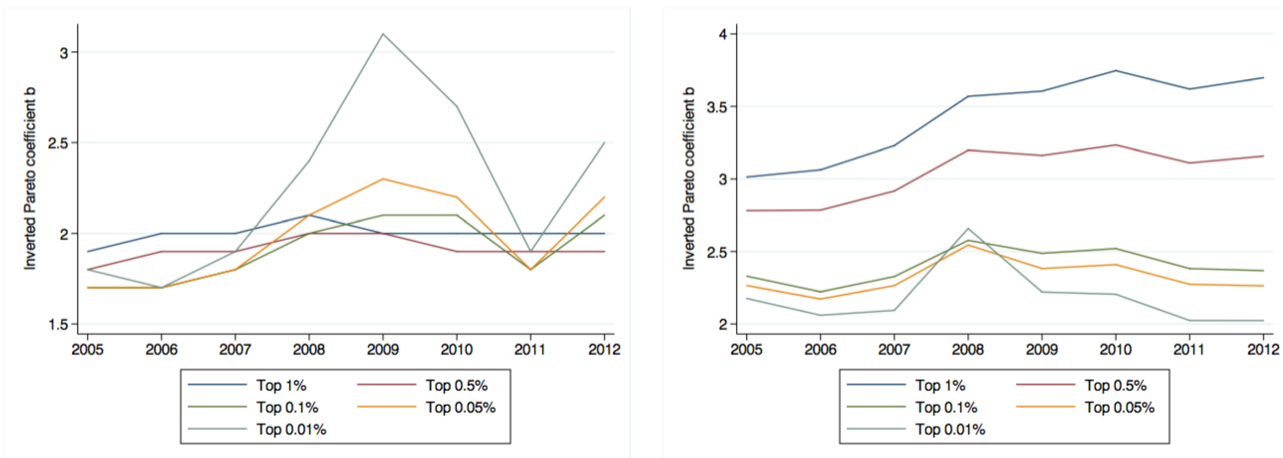


Sources: Alvaredo (2010) for Argentina, Alvaredo and Londoño Vélez (2013) for Colombia, Alvaredo and Saez (2009) for Spain, Roine, Jesper and Waldenstrom, Daniel (2010) for Sweden, Piketty and Saez (2007) for the United States and Burdín, Esponsa and Vigorito (2014) for Uruguay. All series are taken from the World Top Incomes Database. For Lebanon, author's computations using income tax returns and tax units estimates, see Table D.1 in Appendix D.

5.2.2 By source of income

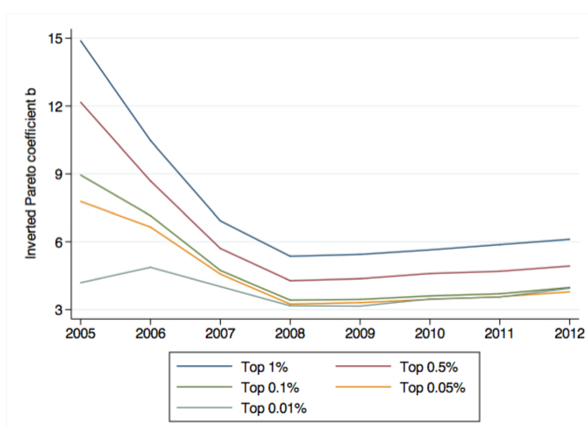
We can also determine the level of concentration within each schedule. Figure 5.4 and 5.5 analyse the evolution of the inverted Pareto coefficient by source of income. The figure reveals three facts. First, the dynamics of income concentration are driven by a decline in built property revenues concentration. Second, Pareto coefficients for profits and wages have an increasing trend. Third, inflation seems to increase inequality among wage earners. Indeed, the evolution of the inverted Pareto coefficients for wages follows the evolution of inflation, with a peak in 2008 and 2009 (Figure 1.2).

Figure 5.4: Evolution of the inverted Pareto coefficients, earned income, 2005-2012



Sources: author's computations using income tax returns and tax units estimates, see Table D.2 and D.5 in Appendix D. We provide figures for gross wages and net profits as they are the two variables that enter our definition of total income.

Figure 5.5: Evolution of the inverted Pareto coefficients, rents, 2005-2012



Sources: author's computations using income tax returns and tax units estimates, see Table D.6 in Appendix D.

6 How progressive is the Lebanese personal income tax system?

6.1 A qualitative assessment of the redistributive capacity of Lebanon's fiscal system

The relatively high pre-tax levels of inequality we found raise the question of the redistributive effectiveness of direct taxation in Lebanon. Anecdotal evidence suggests that, since its creation in 1944, the Lebanese tax system has been regressive [47]. At least four reasons accounting for this lack of fiscal justice can be identified (Himadeh, 1953, pp48-51).

First, the regressive nature of indirect taxes is far from being compensated by any substantial progressive tendency in direct taxes, which constitute a small part of the tax structure.

Second, the schedular form of the Lebanese personal income tax and the complexity of the tax laws it implies disproportionately benefit the rich, partly because they leave scope for tax evasion at the top. Indeed each schedule is likely to underestimate the position of the individual in the income distribution and to hit only a fraction of its income, as it does not take into account the total revenues of each taxpayer. Additionally, the application of progressive tax scales to income from different sources results in a lack of uniformity in the management of taxpayers. For instance, the system is unfair for individuals who draw all or most of their income from a unique source (which is more often the case at the bottom of the distribution). Besides, it should be noted that direct taxes are more strictly applied to taxpayers at the bottom than at the top of the distribution, for several reasons. Labor income is taxed at source in Lebanon. As wages received are reported by employers, who generally do no have interest in underestimating the amounts, it is more difficult for workers to avoid paying taxes. Besides, the fiscal reforms undertaken in the 2000s mentioned in the Introduction (creation of a service of online declaration, creation of a separate unit within the revenue administration for the Deduction at Source of the Income Tax on Salaries in 2003, with the goal of automating operations of deduction at source), which aimed at increasing the number of taxpayers and at facilitating the management of tax illegalities, may have mainly affected low or middle-income taxpayers, and workers in particular. Indeed, the increase in the proportion of tax returns observed between 2005 and 2012 was due to an increase in the number of taxpayers subject to the labor income tax [48]. Consequently, the development of data files and e-taxation have allowed a greater control of illegalities over working classes. On the other hand, and especially in Lebanon, tax evasion is easier for the richest taxpayers. Large companies, with complicated accounts and several income sources falling into different schedules, can more easily escape taxation. Access to information about well-off taxpayers are further impeded by the Bank Secrecy Law. These instituted inequalities (regarding the differential application of methods of control and penalties among taxpayers) also impact the overall progressivity of the tax system [49].

Third, for the tax on wages and salaries, the increase in the size of brackets in the lower brackets moves slower than the increase in the corresponding tax rates whereas in the higher brackets it moves faster than the increase in tax rates.

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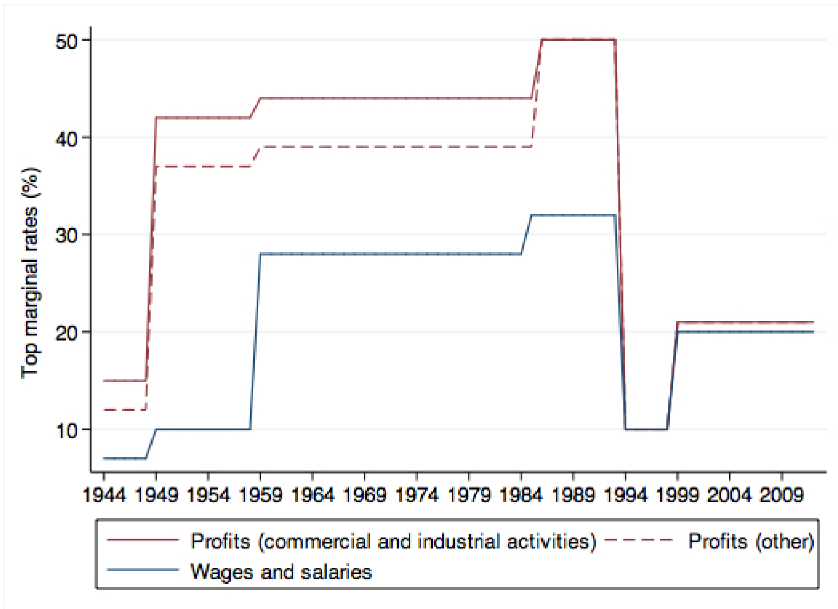
47. Analyzing the fiscal system in 1948, Gabriel Menassa, president of the "Lebanese Society of political economy" wrote "*The unfair distribution of the tax burden exacerbates the consequences of high taxation. Most income and consumption taxes, that is 90 percent of total tax receipts, are paid by middle and low classes. The tax burden is heavily weighing on workers. Wealthy people and landlords are far from being taxed according to their ability to contribute. Great fortunes, inherited or made during the war, have not paid their fair contribution, which aggravated the social and economic imbalance. A considerable amount of these fortunes were invested abroad or hidden from fiscal authorities*" (Ménassa, G., (1948) *Plan de reconstruction de l'Economie libanaise et de Réforme de l'Etat).*

48. Labor income earners represented 50 percent of taxpayers in 2005 and 63 percent in 2012. On the contrary, the share of the other types of taxpayers decreased throughout the period (see Table A.8 in Appendix).

49. A similar phenomenon is analyzed in France by Alexis Spire, "Échapper à l'impôt ?", Politix 3/2009 (No 87), pp143-165.

Fourth, as shown in Figure 6.1, top marginal rates are low, by both historical and international standards.

Figure 6.1: Evolution of top marginal rates in Lebanon, 1944-2012



Sources: Dagher, 1995; Himadeh, 1953; UNDP, 2000; Daher, 2002; Corm 2012.

In the rest of this section, we derive some statistics to support this diagnosis and to analyze the incidence of personal taxation in Lebanon. We indeed find that taxation is more strictly applied to labor income. The profit tax is extremely low. The overall personal income taxation in Lebanon is regressive.

6.2 Pre and Post-tax Income Shares in Lebanon

As underlined by Piketty and Saez (2007), "*a progressive tax system usually starts with the idea of a proportional tax, in which everyone pays the same share of income in taxes. From that baseline, a progressive tax is one in which the share of income paid in taxes rises with income, and a regressive tax is one in which the share of income paid in taxes falls with income. Of course, real-world tax codes are complex and full of rules that have different effects across the income distribution. Thus, a more general definition is that a tax system can be defined as progressive if after-tax income is more equally distributed than before-tax income, and regressive if after-tax income is less equally distributed than before-tax income.*". To assess the progressivity of the personal income tax system in Lebanon, a first step is therefore to compare pre and post-tax income shares for each top group, as displayed in Table 6.1. These statistics pinpoint two important issues. First, the personal income tax system is regressive throughout our period of study. Personal taxation reduces less and less income concentration as one moves to upper groups. Second, and for all income groups, the personal tax slightly reduces top income shares: the after-tax income inequality is almost as high as the inequality before income taxes[50].

50. However, the statistics presented in Table 6.1 sidestep some issues. In particular, the income considered includes built property revenues, for which we do not have the amount of tax levied. Since rents are the main components of top income shares, the difference between pre and post-tax shares suffers from a downward bias. In order to corroborate

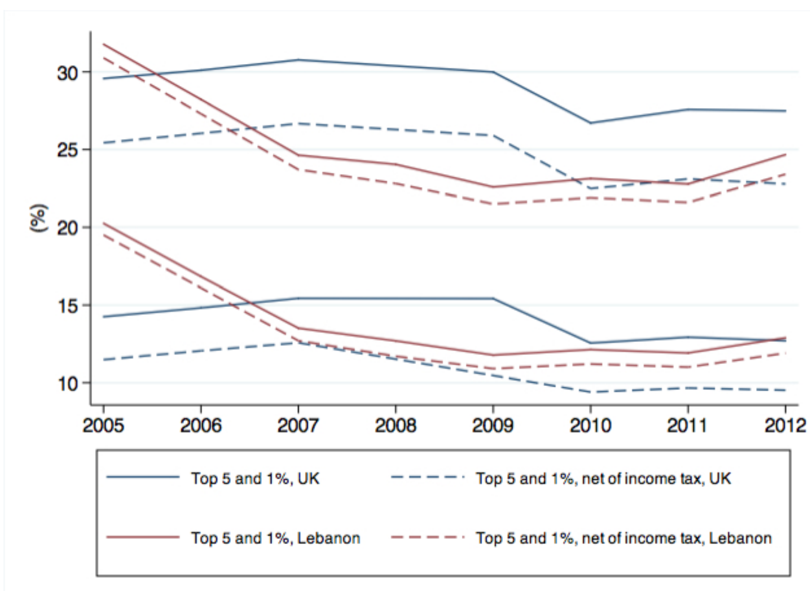
Table 6.1: Difference Between Pre and Post-Tax Top Income Shares in Lebanon, 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
P95	0.9	0.9	1.0	1.3	1.1	1.2	1.2	1.3
P99	0.7	0.7	0.8	1.0	0.9	0.9	0.9	1.0
P99.5	0.6	0.6	0.7	0.8	0.7	0.8	0.7	0.8
P99.9	0.3	0.3	0.4	0.5	0.4	0.4	0.4	0.4
P99.95	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
P99.99	0.03	0.1	0.1	0.2	0.1	0.1	0.1	0.1

Sources: author's computations using income tax returns and tax units estimates.
Note: Results in Percentage points.

To put these figures in perspective, Figure 6.2 presents the evolution of the share of income accruing to the top 1 percent before and after taxation, in Lebanon and in the United Kingdom. The difference between the two countries is striking and reveals the weak role of income tax in Lebanon. On average, the income tax reduces income concentration by 0.9 percentage point in Lebanon for the top 1 percent against 3.0 percentage point in the United Kingdom.

Figure 6.2: Top income shares before and after taxation: Lebanon vs. UK



Sources: author's computations using income tax returns and tax units estimates (Table C.1 and E.1) for Lebanon. Atkinson (2007b) for the United Kingdom, series are taken from the World Top Incomes Database.
Notes: for the United Kingdom, income share-net of income tax relates to adults.

our findings, computations using a definition of income excluding rents are presented in Appendix E.1.2. We also find that the tax is regressive.

6.3 Average income tax rates

The Lebanese Personal Income tax allows for numerous deductions and exemptions [51]. As a consequence, the rates listed in the tax tables do not measure the real tax burden faced by each income group. For this reason, we study in this section average rates, defined as the ratio of the amount of taxes collected over the total income before taxation. We first compute the average rates within each schedule, by studying the distributions of wages and profits separately. Then, we compute the effective average rates within the top groups of the total income distribution.

6.3.1 By schedule

A common observation concerning schedular income tax is that, even if each schedule is progressive, the global personal taxation is often regressive, for the reasons mentioned at the beginning of this section. Tables 6.2 and 6.3 show that both tax schedule are globally progressive.

Table 6.2: Average tax rates on labor income within each fractile, Lebanon, 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
P95-99	0.87	0.85	1.07	1.61	2.05	1.85	5.61	2.49
P99-99.5	2.90	2.64	3.11	5.13	4.48	4.78	4.79	5.44
P99.5-99.9	5.49	5.09	5.58	8.35	7.39	7.52	7.59	8.00
P99.9-99.99	9.59	9.46	9.45	12.30	11.17	11.55	11.47	11.85
P99.99	14.65	15.16	15.80	14.78	10.57	11.02	14.74	11.06

Sources: author's computations using income tax returns and tax units estimates.
Notes: Individuals are ranked according to their gross wages. The average rate equals the total amount of labor tax collected divided by the total amount of gross wages, as gross wages is the labor income variable that enters our definition of income.

Table 6.3: Average tax rates on profit incomes within each fractile, Lebanon, 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
P95-99	5.4	0.4	0.5	0.6	1.1	1.5	1.3	1.1
P99-99.5	6.6	0.8	1.1	1.3	1.5	1.6	1.7	1.7
P99.5-99.9	8.1	3.9	4.4	4.9	5.4	5.7	5.8	6.0
P99.9-99.95	12.0	12.4	8.4	9.7	9.8	10.5	10.5	10.6
P99.99	15.5	19.4	18.1	15.3	17.1	18.6	18.5	17.7

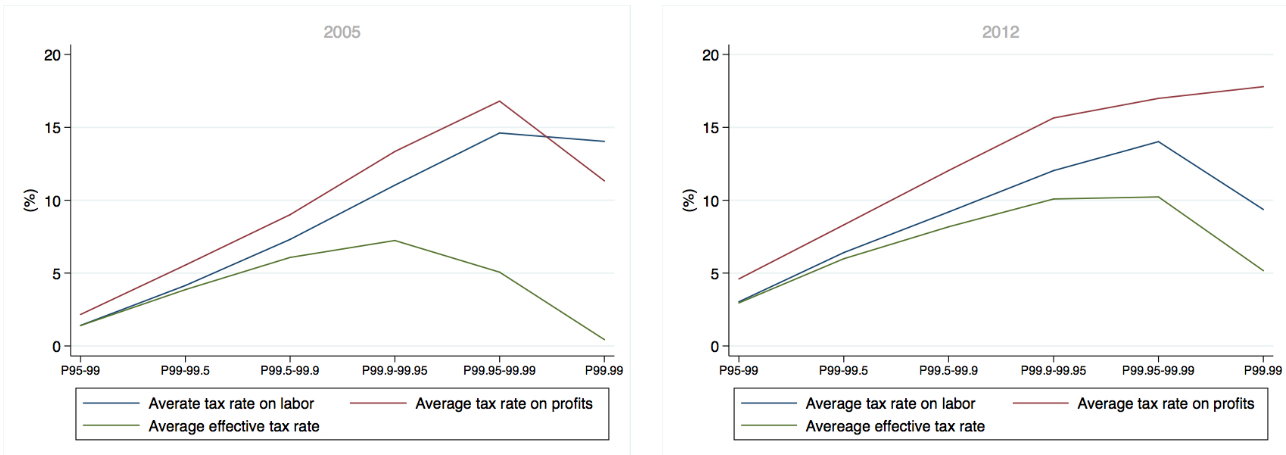
Sources: author's computations using income tax returns and tax units estimates.
Notes: Individuals are ranked according to their net profits. The average rate equals the total amount of tax collected on profits divided by the total amount of net profits within each income group, as net profits is the profit variable that enters our definition of income.

51. See Appendix A for the detailed presentation of the Income Tax.

6.3.2 For total income

In order to assess the average effective rates paid by top groups, we now turn to the distribution of total income. Taken as a whole, the personal tax system is regressive. Nevertheless, the rates are low by international standards, in particular rates on profits. Profits and labor income are hit similarly.

Figure 6.3: Effective Average Income Tax Rates in Lebanon, 2005 and 2012



Sources: author's computations using income tax returns and tax units estimates, see table E.5. in Appendix E for all years.
Notes: the average rate equals the amount of tax levied divided by total income excluding rents (gross wages and net profits).

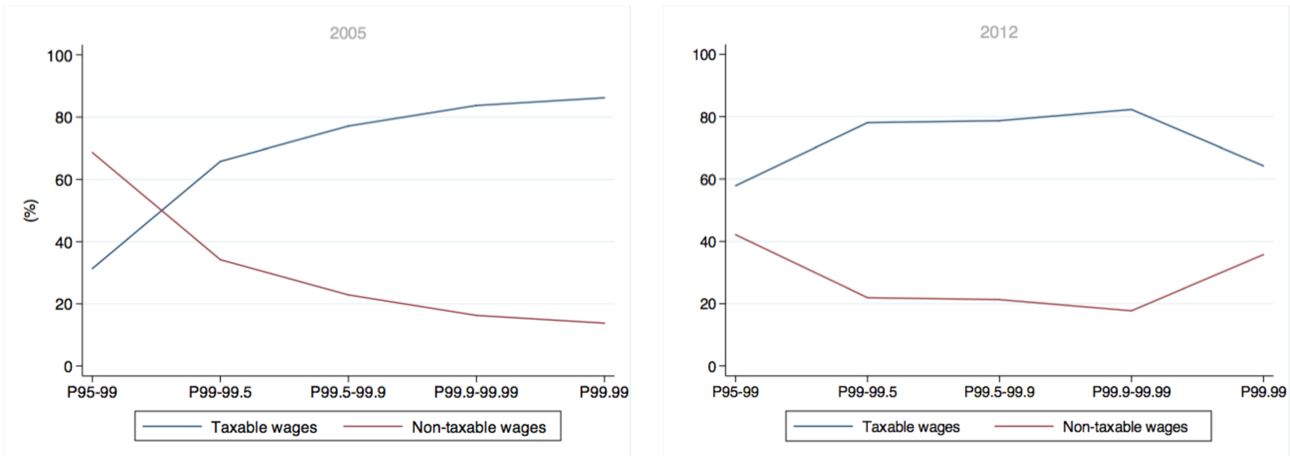
6.4 Evolution of Taxable vs. Non-taxable income

6.4.1 By schedule

Figure 6.4 presents the evolution of the shares of taxable and non-taxable labor income within top groups, for the years 2005 and 2012. Confirming the relative efficiency of the labor schedule we already highlighted, the amount of taxable wages increases with income rank (except in 2012, with an inflection point at the top 0.01 percent), and stays larger than the amount of non-taxable wages for most of the top income distribution. Personal taxation on profits follows a different pattern, as displayed in Figure 6.5. The amounts of taxable income are smaller than the amounts of taxable income and they decrease within top groups[52].

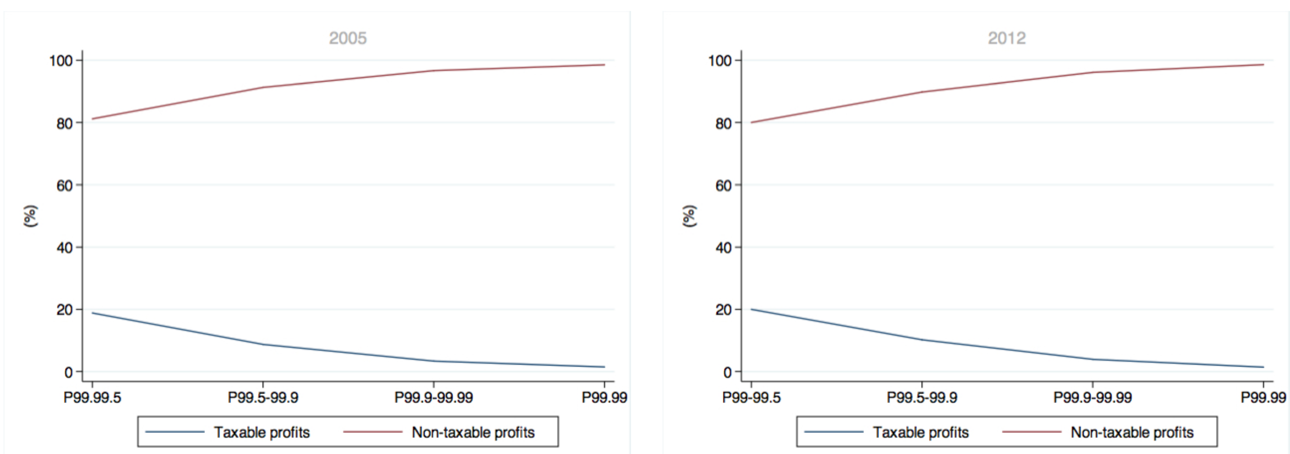
52. Non-taxable profits nevertheless include all wages and social security contributions paid to employees, which can represent a substantial amount that do not enter into the "actual income" that the employer eventually receives. However, the social contribution base for payroll taxes has a cap. An employer pays at most 130 US$ for healthcare and family allowances in addition to 8.5 percent of the wages for end-of service indemnity

Figure 6.4: Taxable and Non-Taxable Wages Across Top Groups in Lebanon, 2005 and 2012



Sources: author's computations using income tax returns and tax units estimates, see table E.7. in Appendix.

Figure 6.5: Taxable and Non-Taxable Profits Across Top Groups in Lebanon, 2005 and 2012

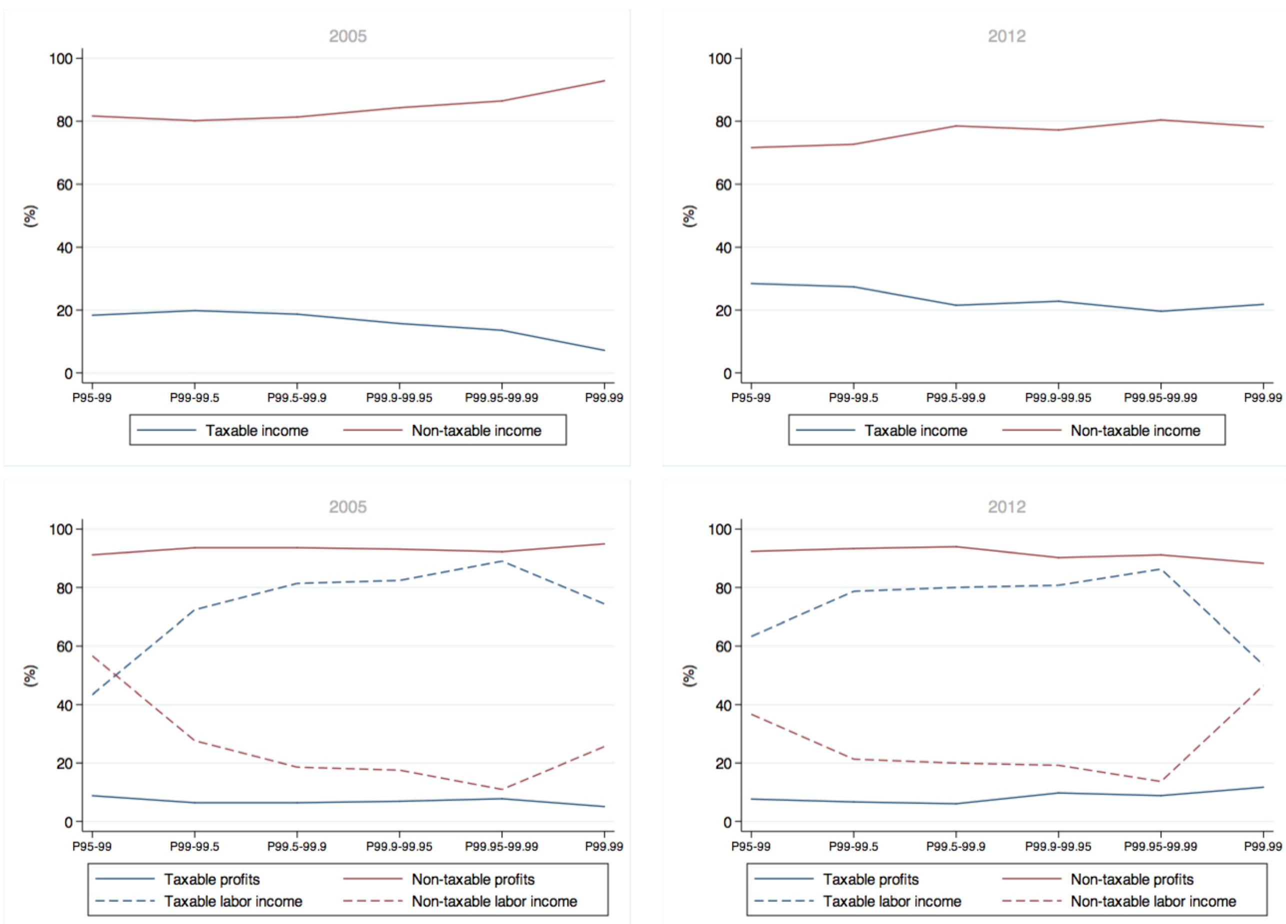


Sources: author's computations using income tax returns and tax units estimates, see table E.7. in Appendix.

6.4.2 For all incomes

Finally, Figure 6.6 displays the evolution of income treated as taxable and as non-taxable in our database across the top income groups in 2005 and 2012 [53]. Within the top 1-0.5 percent, less than 20 percent of the income is treated as taxable. Strikingly, the share of income considered as non-taxable increases with rank: only 7 percent of the income of the 0.01 percent are considered taxable. Although non-taxable income in our dataset include charges, expenses and costs incurred during the activity, such extreme measures suggest that at least the trend is verified empirically for non-taxable excluding the diverse charges. Figure 6.5 also breaks income down into labor incomes and profits. Not surprisingly, taxable and non-taxable profits follow the same pattern as global income: profits exonerated increase within top groups. On the contrary, for wages, taxable incomes are higher than non-taxable and increase within top groups in 2005 and in 2012, confirming that labor are relatively more effectively taxed than capital.

Figure 6.6: Taxable and Non-Taxable Income Across Top Groups in Lebanon, 2005 and 2012



Sources: author's computations using income tax returns and tax units estimates. See table E.8. in Appendix E. Notes: Income excluding rents. Non-taxable income includes charges, expenses and costs incurred during the activity.

53. We rank individual according to their total income. The top groups are therefore the same as in Section 4.1. However, we did not take into account built property revenues in our computations, since we do not have the amount which is subject to tax.

7 Conclusion

This paper constitutes a first effort to estimate top income shares and to study the shape of the upper part of the income distribution in Lebanon, based on individual tax returns and National Accounts data. These data are used to assess income concentration, its dynamics and the redistributive capacity of the personal income tax. Our findings suggest that income inequality is very high. Lebanon is at the highest inequality level in the World Top Incomes Database sample, alongside with Colombia, Uruguay and the United States for the recent period. The dynamics of top income have mainly been driven by changes in the concentration of built property revenues: the 2006 war coupled with high inflation eroded this source of income.

These alarming results question the role of income taxation. We argue that the schedular form of the income tax, the substantial amounts of deductions and exonerations (with non-taxable incomes increasing within top groups), coupled with extremely low and regressive average rates, limit the revenue-collecting capacity of the income tax and severely diminish its redistributive impact. Consequently, the income inequality after taxation is almost as high as the inequality before taxation.

Our results should however be interpreted with caution due to the shortcomings of the available data. The Lebanese National accounts are particularly deficient by international standards. All income and population figures used are estimates only. Our fiscal data also suffer from several deficiencies (not the least being the pervasiveness of tax evasion and exemption). Tax returns are available since 2005, the outbreak of a period of great political and institutional instability. As a consequence, we were not able to study the evolution of inequality in Lebanon from a historical perspective. Regrettably, our micro-data were not disaggregated enough and did not report all cells present in the tax forms. Besides, we were not able to study inequality levels by regions ("*Mohafazats*"), which would have been of particular interest given the well-known regional disparities (the region of Beirut, being economically dominant, is likely to concentrate most of top incomes at the expense of the South of the country).

Despite this, our work has sought to show that tax records remain a unique and rich source for the study of income inequality, particularly because "*the Middle East is a black hole in social policy, both as an academic subject and as a tool of public policy*" (Jawad, 2009, p8). We hope that the findings of this paper will encourage future research focusing on the richest and that they show the need to keep publishing and exploiting fiscal data in Lebanon. In particular, more disaggregated data, classified by regions, and including information on movable capital, capital gains, built property revenues but also on wealth (inheritance tax, real estate tax) would be of great interest. We also hope that our results will contribute to the current debates on potential policy measures to reduce income inequality, in particular the debate on the creation of a unified Income Tax Law, which would cover all types of personal income. Finally, we hope that this paper will encourage a better consideration of socio-economic issues in Middle Eastern studies. A peaceful regulation of social inequality is an essential factor in the construction of a legitimate public authority and of the rule of law (Piketty, 2015, p131). This challenge is particularly acute in the Lebanese case, where the society is extremely hierarchical, with social disparities overlapping confessional boundaries, and where the consociational democracy is characterized by an endemic political instability.

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Appendices

A The Income Tax

A.1 Tax Structure

Table A.1: Structure of Tax Revenues, Lebanon 2005-2012

(Billion LBP)	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Tax revenues	4,867	4,922	5,583	7,182	8,967	9,976	9,885	10,187
Income tax	1,047	1,166	1,308	1,564	1,839	2,050	2,423	2,516
On profits	409	442	501	616	731	808	1,032	1,006
On wages and salaries	186	196	219	273	350	378	455	523
On capital gains	95	98	140	170	179	213	243	296
On interest income (5%)	337	415	437	485	558	628	652	647
Penalties on income tax	17	13	10	20	21	22	40	42
Taxes on property, of which:	414	579	532	786	809	1,088	1,144	1,193
Built property tax	90	94	103	130	101	145	139	171
Real Estate Registration Fees	291	281	380	580	626	853	844	870
Indirect taxes	1,896	1,844	2,224	2,895	3,260	3,583	3,685	3,749
VAT	1,693	1,659	2,003	2,584	2,889	3,193	3,300	3,276
Other taxes on goods and services	192	175	215	305	363	382	336	364
Taxes on International Trade	1,268	1,074	1,247	1,588	2,664	2,802	2,179	2251
Other Tax Revenues	241	259	271	350	396	453	454	478

Source: Ministry of Finance, Public finance reports
Notes: Other Tax revenues refer to fiscal stamp fees mostly.

Table A.2: Structure of Tax Revenues, as a percentage of GDP, 2005-2012

(%)	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Income Tax	3.2	3.4	3.5	3.5	3.5	3.7	4.0	3.8
On profits	1.2	1.3	1.3	1.4	1.4	1.4	1.7	1.5
On wages and salaries	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8
On capital gains	0.3	0.3	0.4	0.4	0.3	0.4	0.4	0.4
On interest income (5%)	1.0	1.2	1.2	1.1	1.1	1.1	1.1	1.0
Taxes on property	1.3	1.7	1.4	1.7	1.5	1.9	1.9	1.8
Taxes on Goods and Services	5.8	5.5	5.9	6.4	6.2	6.4	6.1	5.6
Taxes on International Trade	3.8	3.2	3.3	3.5	5.1	5.0	3.6	3.4
Other Tax Revenues	0.7	0.8	0.7	0.8	0.8	0.8	0.8	0.7
Tax revenues	14.8	14.6	14.8	15.9	17.0	17.8	16.4	15.3

Source: Ministry of Finance, Public finance reports
Notes: Other Tax revenues refer to fiscal stamp fees mostly.

Table A.3: Structure of Tax Revenues, as a percentage of total tax receipts, 2005-2012

(%)	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Income Tax	21.5	23.7	23.4	21.8	20.5	20.5	24.5	24.7
On profits	8.4	9.0	9.0	8.6	8.2	8.1	10.4	9.9
On wages and salaries	3.8	4.0	3.9	3.8	3.9	3.8	4.6	5.1
On capital gains and dividends	2.0	2.0	2.5	2.4	2.0	2.1	2.5	2.9
On interest income (5%)	6.9	8.4	7.8	6.8	6.2	6.3	6.6	6.4
Taxes on property	8.5	11.8	9.5	10.9	9.0	10.9	11.6	11.7
Taxes on Goods and Services	39.0	37.5	39.8	40.3	36.4	35.9	37.3	36.8
Taxes on International Trade	26.1	21.8	22.3	22.1	29.7	28.1	22.0	22.1
Other Tax Revenues	5.0	5.3	4.9	4.9	4.4	4.5	4.6	4.7

Source: Ministry of Finance, Public finance reports
Notes: Other Tax revenues refer to fiscal stamp fees.

Table A.4: Structure of the Income Tax, 2005-2012

(%)	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Income tax on profits	39.1	37.9	38.3	39.4	39.7	39.4	42.6	40.0
Income tax on wages and salaries	17.8	16.8	16.7	17.5	19.0	18.4	18.8	20.8
Income tax on capital gains	9.1	8.4	10.7	10.9	9.7	10.4	10.0	11.8
Tax on interest income (5%)	32.2	35.6	33.4	31.0	30.3	30.6	26.9	25.7
Penalties on income tax	1.6	1.1	0.8	1.3	1.1	1.1	1.7	1.7

Source: Ministry of Finance, Public finance reports
Notes: In percentage.

Table A.5: Personal Income tax within the Lebanese fiscal system, 2005-2012

(Billion LBP and %)	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Total Tax	175	208	229	347	382	429	565	550
Tax on Labor Income	116	148	153	249	266	291	430	414
Tax on Profits	59.2	59.9	76.1	98	116	137	135	136
Share of Tax Revenues	3.6	4.2	4.1	4.8	4.3	4.3	5.7	5.4
Share of GDP	0.5	0.6	0.6	0.8	0.7	0.8	0.9	0.8
Share of Total Income Tax	16.7	17.8	17.5	22.2	20.8	20.9	23.3	21.9

Source: Ministry of Finance, Public finance reports and author's computations using income tax returns and tax units estimates.
Notes: Total Tax, Tax on Labor Income and Tax on Profits correspond to the amounts reported in the fiscal data. We can note the total amount of tax levied on labor income in the fiscal data is smaller than the one from official public report, displayed above.

A.2 Income Tax in Lebanon

The Lebanese Income Tax was created in 1944, exactly a year after the effective end of the French mandate (**Law 12/4/1944**). It replaced the old "Temettu" tax, in force under the Ottoman Empire. The adoption of the text was a way for the newly independent state to assert its sovereignty, in a context where other Middle Eastern countries had recently adopted an Income tax [54]. The 1944 text underwent many amendments to be finally reformed in depth in 1959 (Decree-Law 144, 6/12/1959).

The text of 1959 is still the basis of the current Lebanese tax system. The 1959 income tax is a schedular, progressive and individual tax which taxes the different sources of income separately. It is divided into three main categories: a tax on profits from industrial, commercial and non-commercial activities levied according to a real or lump sum scheme (Title I), a tax on wages and salaries (Title II) and a tax on incomes from movable capital including interests and dividends (Title III).

This section draws extensively from Daher (2002). We present the functioning of the income tax as a whole, specifying when it concerns individuals and personal income. We highlight for each schedule the definition of taxable income as well as the rates and schemes applied. We also present the changes in tax reliefs (deductions, allowances, and exemptions).

I) **Title I: tax on profits from industrial, commercial and non-commercial activities**
The first type of income taxed by the Income tax is the profits from all industrial, commercial and non-commercial activities made by individuals (professionals, independent, partners in partnerships, associates) or by companies. All profits not subject to the income tax of another schedule are taxed under this schedule. It concerns all individuals or legal entities, living or not in Lebanon but whose profits are realized on the Lebanese territory (Article 3, D.L 144/1959). The tax hits the net profit recorded at the end of the financial year, after deducing from the gross annual revenues the expenses and charges inherent to the activity. Profits are taxed according to three different schemes:

   i) **An actual taxation scheme**, which implies a regular accountancy in order to determine the annual real turnover. This scheme concerns large companies, able to finance precise bookkeeping, namely among other partnerships and corporations; their subsidiaries in Lebanon (when the company is based abroad), plants and banks (Article 11, Law 144/1959, modified by the article 37 of the Decree-Law no. 326 6/28/2001). Additionally, individual taxpayers and liberals, usually taxed according to the lump-sum scheme (see below), can choose to be taxed according to the actual taxation scheme.

   ii) **A lump-sum taxation scheme**, which concerns profits of smaller companies, self-employed professionals and taxpayers with fixed profits. According to this method, the net profit is defined as a fixed percentage of the taxpayer's total turnover. The percentage depends on the activity.

   iii) **An estimated profit scheme**. This taxation scheme relies on an administrative evaluation made directly by the fiscal authorities, which determines the taxable income. It is a simplified scheme concerning taxpayers with modest levels of income who are not subject to the previous schemes.

54. Turkey in 1926, Iraq in 1927, Egypt in 1938, Palestine in 1941, Syria in 1942.

Individuals taxed under this title are professionals, self-employed liberals and partners in partnerships. The latter have the same fiscal status as individual enterprises and self-employed professionals and are taxed individually on their profit share, no matter if it is used for investments or personal use. The profits of a partnership are immediately taxable on behalf of the partners, even if they are not distributed yet and are taxed only once. Concerning the allocation of charges and expenses, only the charges directly linked to the company's activity can be deduced from the total profits to be distributed. Personal expenses are not deduced from the profits made (however they can be deduced from the share of profits granted to each partner). The company's statutes define the rules of distribution of the profits among the partners.

Before the application of the tax rates, individuals benefit from family abatements varying according to the number of dependents in the households. According to Article 34 of the finance law 107/1999, profits are subject to the income tax after the abatement of 7,500,000 LBP (5,000 US$) for all individual, plus an additional abatement of 2,500,000 LBP (1,660 US$) if the spouse is not working, plus 500,000 LBP (333 US$) for each child [55].

After the application of family abatements, profits are taxed individually according to the following progressive tax scale (Article 32 of the Income tax Law, amended by article 35 of the 1999 finance law 107):

Table A.6: Tax scale under schedule I (profits), 2005-2012

Rates	**Income brackets in LBD**	**in US$**
4%	0 - 9,000,000	0 - 5,970
7%	9,000,000 - 24,000,000	5,971 - 15,920
12%	24,000,000 - 54,000,000	15,921 - 35,820
16%	54,000,000 - 104,000,000	35,821 - 68,988
21%	104,000,000 +	68,989 +

Sources: Article 32 of the Income Tax law, amended by article 35 of the Finance Law 107/1999; Daher (2002). This scale is applicable to the net profits of partners, professionals, self-employed, liberals, whose taxable profits are determined under the real or lump-sum scheme.

The first Title also concerns corporations and companies, subject to an additional flat tax rate of 15%. The amounts of income and taxes concerned by this corporate tax are not reported in our database. This distinction between the fiscal status of partnerships and corporations was introduced in 1980 (Law 27/1980, of 7/19/1980). Before 1980, the Lebanese tax legislation treated corporations as individual enterprises or partnerships. As such, they were also subject to the progressive income tax. The 1980 reform introduced an additional corporate tax on behalf of the company with a flat tax rate of 15 percent applied to the net profits of the company. [56].

55. If the spouse is working, each spouse benefits from the abatement of 7,500,000 LBP and the father benefits from the additional exoneration for the children.

56. As our paper analyses the effect of the personal income tax only, we do not present the functioning of the corporate tax (See Daher, 2002 pp165-198).

Substantial amounts of income are exempted from the profit tax. Actual revenues of non-profit organizations, educational and cultural establishments, hospitals and social establishments, asylums, farming businesses, maritime and airline companies, and public establishments which do not compete with private enterprises, realizing commercial or industrial activities, are exempted on a permanent basis (Article 5, D.L 144/1059). There also exist temporary exemptions, defined by the Law of 2/5/1954 and law 27/1980 (modified by law 27/1980). Cash-flows needs for self-financing are exempted at a rate ranging from 50 percent to 75 percent of the annual profits for ten years, in order to encourage investments. Since 1980, "new industries", that is industries just created and producing "innovative products" non manufactured in Lebanon yet, benefit from a ten-years exemption from the profit tax (at the start of their activity). Additionally, the plants must be installed in particular areas the government wants to develop (Decree-Law 11991, 3/20/1998). Finally, there exist exemptions benefiting the banking sector and created after the crash of the Intra Bank, by the Law 4/21/1967, abrogated by two decree-laws in 1977 and in 1983. They consist in a total exemption of the income tax for the first seven years after the creation of the bank, if the bank is created after January 1984 and meets some criteria specified in the Decree-Law 50 of 7/15/1983.

II) **Title II: tax on wages and salaries**

The labor income tax concerns all types of labor income: wages and salaries, including bonuses, commissions, compensation, allowances, grants, benefits, overtime hours, pensions and annuities (Article 46 of D.L. no. 144/1959), after deductions of the allowances and charges (deductions are defined in Article 48 of the Income tax Law, see Appendix B). The tax is levied at source and declared annually by the employers, which limits the possibility of fiscal evasion. Some company directors and managers, although not holding a work contract, benefit from the tax applicable to employees. After the determination of the net labor income, the same family abatements applied to individual persons and partners in partnerships under the profit tax are applied to employees. Net income is then subject to the following tax scale:

Table A.7: Tax scale under schedule II (labor incomes), 2005-2012

Rates	Income brackets in LBD	in US$
2%	0 - 6,000,000	0 - 3,980
4%	6,000,000 - 15,000,000	3,981 - 9,950
7%	15,000,000 - 30,000,000	9,951 - 19,900
11%	30,000,000 - 60,000,000	19,901 - 39,800
15%	60,000,000 - 120,000,000	39,801 - 79,600
20%	120,000,000 +	79,601 +

Sources: Article 58, Income Tax Law, Daher (2002)

Alongside taxes due by taxpayers and paid by the firms, the latter are liable to social contributions, which must be paid to the National Social Security Fund. According to the Decree 13955 (9/26/1963), modified in 2001, social contributions are financed as follows:

— **Health-maternity branch**: 9 percent of the gross wages (7 percent paid by the employer, 2 percent paid by firms). The rate is applied to a maximum amount of 1,500,000 LBP (which represents a maximum of 70 US$ paid by the employer for an employee, and a maximum of 20 US$ paid by the employee)

— **Family allowances**: 6 percent of wages, paid by the employer, applied to a maximum amount of 1,500,000 LBP as well, that is 60 US$.

— **End-of-service indemnity**: 8.5 percent of wages, paid by the employer.

According to the Article 47 of the D.L. 144/1959, modified by the article 54 of the D.L. 7/1985, the following labor incomes are exonerated: allocations granted to religious ministers, salaries received by diplomatic agents, pays for military agents, disability pensions paid to civil servants, annuities and benefits for victims of work accident, wages of agricultural workers, nurses and hospital staff, redundancy pays, and sums collected for the social security.

III) **Title III: tax on movable capital**

The tax on movable capital concerns the different products of capital: dividends, interests and arrears. They are taxed at a flat tax rate of 10 percent (Article 72 of D.L. 144/1959, modified in 1981, 1985 and in 1999). This tax is borne by individual taxpayers (associate, employee, partner) but is paid to the Treasury through the company. As for labor incomes, taxes on incomes from movable capital are levied at source and paid by the incorporated company. For partnerships and individual enterprises, incomes are taxed when realized. For incorporated companies, as said above, net profits are taxed at a flat tax rate of 15 percent, when realized. The sold can either be invested, or be distributed as dividends among each associate. In this case, it is taxed again under the income tax on movable capital. The amounts declared and taxed under this Title are not reported in our database.

Are exonerated from the income tax on movable capital: all capital gains from profits already taxed under the Title I or exonerated from this tax (in accordance with Article 5 and 5bis of the income tax law); interests earned on bank accounts; interests received on current accounts hold by governmental or diplomatic administrations; amounts paid to reimburse creditors and shareholders; Lebanese treasury bonds products; products of bonds held by individuals.

IV) **Built property revenues and capital gains taxes**

Alongside with the income tax, individuals are subject to a built property revenue tax and to a capital gain tax. The built property tax was created in 1962. It is charged on the stock (4 percent of the value of the real-estate) and on the flow of income generated by the ownership of a built property, according to a progressive tax scale. Although built property revenues are reported in the database, the amount of income tax levied from this source is not.

Capital gains realized by individual taxpayers are treated differently depending on whether they are capital gains on movable or immovable. In accordance with Article 45 of the income tax law (amended by Article 62 of Finance Law 107/1999), all capital gains on immovable are taxed. This tax concerns capital gains resulting from the disposal or the revaluation of fixed assets. For the first category, only the gains affected to a professional use is taxed according to Article 45. Gains assigned to a personal use are exonerated. Capital gains from immovable are subject to the tax on movable capital of 10 percent. As such the exonerations presented in Articles 5 and 5 bis mentioned above are applicable. For capital gains made on movable (equity securities and marketable securities, shares of companies), there exists a distinction between two types of sales of securities and corporate entitlements. First, sales of securities of stock corporations, with the largest portfolios, are not subject to any capital gains taxes (Article 19 of the law 282/1993). Second, the sales of the shares of limited liability companies are subject to the income tax on movable capital at the flat tax rate of 10 percent (Articles 69 and 70 of the income tax law, amended by the article 31 of the finance law 107/1999). Sales of shares between individuals- but not between companies or between professionals in the context of their activity- are completely exonerated.

Finally, Tables A.8 and A.9 present the number of taxpayers in each schedule, in all the database in within our top groups.

Table A.8: Composition of the Income Tax Schedules, Lebanon 2005-2012

	('000s)	**Labor**	**Self-empl.**	**Corp.**	**Partners.**	**Rents**	**Total**
	Number	265,288	55,999	8,267	14,220	169,915	501,577
2005	%	53	11	2	3	34	100
	Number	263,686	57,449	8,450	14,316	173,229	508,831
2006	%	52	11	2	3	34	100
	Number	311,147	57,881	8,526	14,440	177,567	570,373
2007	%	55	10	1	3	31	100
	Number	360,372	59,632	8,912	14,633	180,550	607,443
2008	%	59	10	1	2	30	100
	Number	387,012	60,994	9,424	15,118	184,371	639,989
2009	%	60	10	1	2	29	100
	Number	392,737	63,158	9,706	15,356	189,202	653,761
2010	%	60	10	1	2	29	100
	Number	401,217	65,755	9,607	15,557	192,328	668,019
2011	%	60	10	1	2	29	100
	Number	417,967	66,158	8,942	14,694	195,551	685,990
2012	%	61	10	1	2	29	100

Sources: author's computations using income tax returns.
Note: Some individuals are present in several schedules

Table A.9: Individuals in each Schedule within our Top Groups, Lebanon 2005-2012

	('000s)	**Labor**	**Self-empl.**	**Corp.**	**Partners.**	**Rents**	**Total**
	Number	97,091	47,175	6,057	9,897	32,184	168,030
2005	%	58	28	4	6	19	100
	Number	98,213	48,213	5,873	9,537	32,689	169,990
2006	%	58	28	3	6	19	100
	Number	112,266	49,690	6,317	10,228	34,348	185,710
2007	%	60	27	3	6	18	100
	Number	147,567	52,556	6,790	10,583	37,738	224,027
2008	%	66	23	3	5	17	100
	Number	185,102	54,625	7,336	11,141	41,578	265,655
2009	%	70	21	3	4	16	100
	Number	196,495	56,844	7,467	11,231	45,005	281,130
2010	%	70	20	3	4	16	100
	Number	205,618	59,074	7,348	11,122	46,817	293,872
2011	%	70	20	3	4	16	100
	Number	255,717	60,069	6,701	10,382	49,901	345,534
2012	%	74	17	2	3	14	100

Sources: author's computations using income tax returns.
Note: Individuals with gross income greater or equal to 600 US$.

A.3 Top marginal rates

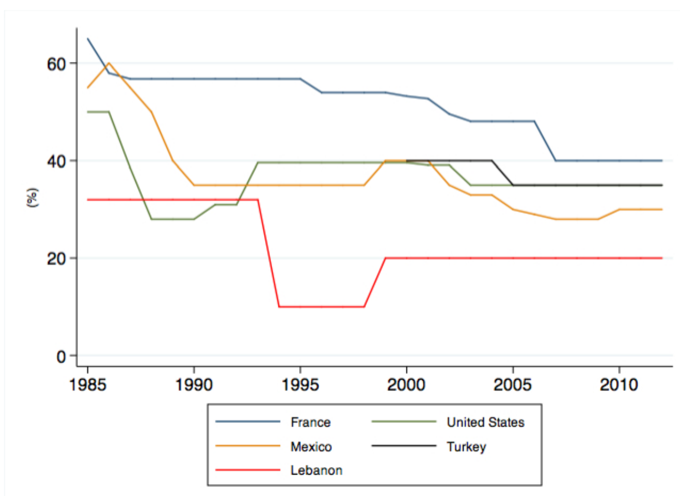
The Lebanese income tax law underwent few in-depth reforms. The 1959 law, replacing the 1944 Income tax, is still the basis of the actual system. The main modern reforms of the rates were made in 1985, 1993 and 1999.

i) **Title I: tax on profits from industrial, commercial and non-commercial activities**. At its creation in 1944, the income tax distinguished between commercial and industrial enterprises, subject to rates varying between 4 and 15 percent and between 4 and 12 percent respectively (Dagher, 1995). Article 12 of the Budget law of 1949 established the rates between 5 and 42 percent and 5 and 37 percent respectively (Himadeh, 1953). The 1959 reform slightly increased the rates: 6- 44 percent and 5- 39 percent respectively. The 1985 Finance Law 107 (7/23/1999) unified the tax scale and set the rates between 6 and 50 percent. In 1994, during the reconstruction period, the rates were lowered to the range of 2-10 percent. They were finally increased again up to the range of 2-21 percent, their level during our period of study [57].

ii) **Title II: Tax on wages and salaries**. The Article 53 of the 1944 Income tax law set the labor income tax rates at 3-7 percent (Dagher, 1995). In 1949, they were established at 2-10 percent (Himadeh, 1953). In 1959, the top marginal rate was increased to 28 percent. After being increased to 32 percent in 1985, it was decreased during the reconstruction period to 10 percent and increased again to 20 percent in 1999.

The Lebanese Income tax rates are extremely low by international standards (see Figure A.1).

Figure A.1: Statutory top marginal tax rates in selected countries, 1985-2012



Sources: OECD Tax Database for OECD countries; UNDP (2000); Corm (2012); Daher, (2002).
Note: Taxation of labor income

57. For corporations, the corporate tax rate was set at 26 percent before 1993, then at 10 percent and finally increased to 15 percent in 1999.

B Methodological issues

B.1 Income definition

In this section, we present in further detail the variables reported in our database, by referring to the Lebanese Income tax Law and the 2010 tax forms.

1) **Salaries and wages:**
   i) **The labor gross income**, which comprises the main salary/daily wages, representation remuneration, bonuses, commissions and overtime, family compensation for the spouse, family compensation for the children, allowances given to bear the expenses of the activity (transportation compensation, car allowance, residence allowance, food allowance, clothing allowance), fund compensations, health insurances of all types, educational grants, marriage grants, birth grants, assistance in case of illness, assistance in case of death, other grants and benefits (tax form R.6).
   ii) **The labor income subject to tax**, obtained after deducing from the gross labor income the compulsory social contributions, the allowances covering expenses linked with the professional activity and all the grants and benefits [58].

2) **Self-employment income**. Similar to labor income, there are two variables reported for self-employed and liberals taxpayers:
   i) **Total turnover** made in a given year
   ii) The corresponding **profit subject to tax**, equal to the turnover multiplied by a given rate in order to take into account charges and expenses endured during the activity [59]. Self-employment incomes are taxed according to a lump-sum scheme (see Appendix A). The rate applied varies between 7 percent and 65 percent depending on the activity [60].

3) **Business incomes**. For individual taxpayers in corporations as well as for partners in partnerships, we also have two variables reported:
   i) The **actual total revenue**, defined as the turnover plus the overall financial and non-financial investment revenues [61].
   ii) The corresponding **profit subject to tax**, which is equal to actual total revenue minus the expenses and costs incurred during the activity [62], minus the exonerated incomes (grants and donations). The non-deducible revenues are capital interests, investments and expenses made to earn capital gains, taxes paid to a foreign government, losses incurred by branches settled abroad, representation remuneration distributed to employees and exceeding 10 percent of their wages,

58. Article 50, Law 144 (06/12/1959) modified by Laws 27 (07/19/1980), 7 (08/10/1985) and 89 (09/07/1991).

59. The charges are "Sales of merchandise, consumption material, wages, salaries and other benefits, employees and wage-earners insurance, social security subscriptions, commissions paid to third parties, car and transportation expenses, banking commissions, interests and expenses, legal expenses, consultancies and similar expenses, maintenance and repair expenses, rent or investment, other office expenses, taxes, fees, and permits, accommodation, traveling expenses, promotion and advertisement., institution/profession activity insurance expenses, amortization" (tax form F3).

60. Decree 4169/1 (8/16/1993) modified by the Decree 5/1 (11/1/2000). In our database, the effective coefficient applied is on average 30 percent for all years.

61. Common operations dividends, placement and participation bonds revenues, net profit from placement bonds wavering, revenues from other movables, similar interests and revenues, positive exchange rate differences, recoveries from financial provisions (tax forms F16-1 and F16-2)

62. The costs comprise: "the overall cost (sold merchandise, sold production, work and services provision cost), external services (royalties, rents etc.), employees charges (including social security contributions), tax fees and charges, the depreciation and investment provision allocations, interests on loans for the company's needs".

exceptional taxes and fines [63]. Incomes from movable capital and built or non-built properties are considered as taxable income. However, if these incomes are originally subject to another specific tax and are added to the profits made, they can be exonerated from the Income tax [64]. Finally, dividends received by Lebanese companies from shares of other Lebanese companies are integrally deduced from their taxable incomes subject to the profit tax but remain subject to the income tax on movable capital after their redistribution [65].

4) **Built property revenues**, excluding persons living in their own dwelling.

Additionally, our data include the annual taxes levied on labor, self-employment and business incomes (the two first Titles of the Income Tax, see Appendix A.) for each taxpayer. Therefore, the personal income tax database enables us to compute:

1) The **total annual income before tax and transfers** accruing to each individual, by summing the incomes from the three schedules
2) The **total amount of taxes levied for each individual** on self-employment, labor and/or business income (by summing the amount of tax paid on each source of income)
3) The **income after taxation** for each individual (by subtracting the amount of tax paid from the income received before tax), which enables us to account for the redistributive impact of the Lebanese Income Tax.

To sum up, we have in our data:

— **The gross income**
  = All the revenues received during the activity
  = Taxable income + expenses + non-taxable income, if any (allowances, grants, benefits for employees/income from movable capital for profit taxpayers)

— **The net income or taxable income**
  = Gross income- expenses- exonerated income

— The **amount of tax levied**

We are able to derive:

— The **income after taxation**
  = Taxable income- total tax levied
  = Gross income- total tax levied

— The **Non-taxable income gross of expenses**
  = Gross income- taxable income

We cannot derive:

— **The actual income**, the income concept most commonly used in the WTID
  = Gross income - expenses

All these definitions can be applied to a given source of income and to the total amount of income earned by a given individual. They can also be aggregated for all the taxpayers in a given year.

63. Income Tax Law, Article 7, as amended by Law 286 (02/12/1994).
64. Income tax Law, Article 8 as amended by Law 282 (12/30/1993).
65. Article 9, as amended by Law 27/80 (07/12/1980).

B.2 Uncertainties surrounding demographic figures in Lebanon

Similar to income data, demographic figures in Lebanon are of poor quality. The last population census was conducted in 1932 and all available population figures are estimates. The reluctance to produce demographic statistics is due to a deep-rooted fear of rekindling confessional tensions or upsetting the country's confessional balance (Gaspard, 2004, p235). It may be also due to a reluctance to produce official estimates about foreign and refugee workers, often subject to harsh living conditions. Demographic estimations are further impeded by massive emigration movements during years of unrest and violent conflicts. The magnitude of the return movement since the end of the 1990s but also after the 2006 July war is difficult to estimate, all the more so as many Lebanese own several residences. Additionally, the outbreak of the Syrian conflict in 2011 led to a massive inflow of Syrian refugees. The World Bank estimates that 1 million Syrian refugees have come to Lebanon since the beginning of the conflict, now representing almost 22 percent of the Lebanese population. The growing flow of refugees is expected to increase poverty [66].

B.2.1 Robustness checks for our control for population

In this paper, we used the World Bank data to compute the population control over the period. In order to check the robustness of our results to the choice of population estimates, we also computed top income shares using figures for the adult population aged 20 and more, used by Davies, Lluberas and Shorrocks (2012) [67]. The results are very close to those we found using the World Bank data (the difference between the estimates was always inferior to 1 percentage point for the top 1 to the top 0.01 and inferior to 2 percentage point for the top 5 (see Table B.1).

Table B.1: Computations using adult population aged 20 and more as control

		2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Population	('000s)	2,579	2,632	2,680	2,724	2,768	2,812	2,858	2,905
	Share	30.9	27.3	23.6	22.9	21.4	21.8	21.4	23.1
Top 5%	Difference	0.9	1.0	1.0	1.1	1.2	1.3	1.4	1.6
	Share	19.7	16.2	12.8	12.0	11.1	11.3	11.1	11.9
Top 1%	Difference	0.6	0.7	0.7	0.7	0.7	0.8	0.9	0.9
	Share	16.4	12.9	9.7	8.9	8.2	8.4	8.1	8.9
Top 0.5%	Difference	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.7
	Share	11.4	8.1	5.2	4.5	4.2	4.3	4.0	5.0
Top 0.1%	Difference	0.3	0.3	0.2	0.2	0.2	0.3	0.3	0.1
	Share	10.0	6.8	4.1	3.4	3.2	3.3	3.0	3.6
Top 0.05%	Difference	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Share	7.1	4.7	2.4	1.9	1.8	1.9	1.6	2.0
Top 0.01%	Difference	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Sources: author's computations using income tax returns and tax units estimates from the United Nations Population Division; World Population Prospects, 2008 Revision.
Note: Difference with top income shares using the adult population aged 15 and more as control (in percentage points).

66. The World Bank estimates that 170,000 Lebanese fell into poverty in 2014, in addition to the 1 million already living under the poverty threshold.
67. United Nations Population Division (World Population Prospects, 2008 Revision).

B.2.2 Identifying individuals within top groups

Following our discussion in section 2.2.3, we computed top income shares by withdrawing income inferior to 600 US$, the threshold we used to define top groups. The following table displays the results and the difference in percentage point with our main estimates. The results are very similar to the ones we found (applying the control for population starting by the top of the distribution), which corroborates our estimation of the empirical threshold at 600 US$.

		2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
	Share	31.7	28.2	24.6	24.0	22.6	23.1	22.8	24.6
Top 5%	Difference	0.081	0.071	0.066	0.051	0.001	0.041	0.001	0.028
	Share	20.2	16.8	13.5	12.7	11.8	12.1	11.9	12.9
Top 1%	Difference	0.048	0.046	0.042	0.035	0.001	0.027	0.001	0.018
	Share	16.8	13.4	10.2	9.4	8.7	9.0	8.8	9.5
Top 0.5%	Difference	0.038	0.039	0.038	0.030	0.001	0.023	0.001	0.016
	Share	11.7	8.4	5.4	4.7	4.4	4.6	4.3	5.0
Top 0.1%	Difference	0.022	0.021	0.025	0.023	-0.001	0.017	0.001	0.010
	Share	7.3	4.8	2.5	2.0	1.9	2.0	1.7	2.1
Top 0.01%	Difference	0.006	0.012	0.016	0.012	0.001	0.004	0.001	0.005

Sources: author's computations using income tax returns and tax units estimates.

B.3 Income denominator

The control total for income can be computed with two different methods (Atkinson, 2007a, p.90). A first method consists in resorting to the national accounts figures for total personal income and subtract items that do no enter into the definition of income reported in the fiscal data. Alternatively, we could start from the total amount of income in the tax data and add an estimate of the income accruing to the rest of the tax units. As such, the income denominator is typically lower than GDP. Given the lack of alternative data and the limited coverage of the personal income tax in Lebanon, we used the first method.

Prior to defining the control total for income, we need to emphasize that the quality of national accounts in Lebanon is weak, both in terms of data compilation, timeliness and frequency (World Bank, Lebanon Economic Monitor report, 2013, p10). It is only in 2002 that the government launched the project to develop national economic accounts. In addition to being only available on an annual basis, national accounts are often delayed. Their publication stopped in 2010. Analyses are further impeded by the absence of other informative statistics, on labor market's development, households' living conditions or inflation. Such a weak national accounting framework is extremely unusual at the world level and even among countries with a similar level of development. Due to these shortcomings, we had to rely on imperfect proxies. Indeed, the national statistics of Lebanon prohibit the establishment of a separate and accurate measurement of the accounts of the five different institutional agents defined by the international System of National Accounts (SNA93), namely non-financial corporations, financial corporations, public administrations, households, non-profit institutions serving households. Therefore, it is impossible to provide a breakdown of distribution operations between non-financial institutions and households. As a consequence, we were not able to derive the amount of total *personal* income. We nevertheless used the integrated account for all the economy (S.1) to derive a proxy of the control total, in the absence of detailed households' accounts. Additionally, the National Accounts do not present the detailed sub-categories of the different items presented. We had to deal with aggregated amounts and hence to incorporate some sources of income that are not reported in the tax returns. All our methodological choices were made to overestimate the control income and hence to underestimate inequality.

The three sources of income in our data are wages, profits (including some financial revenues) and rents from built properties. The National Accounts give the "Compensations and other incomes" which are the aggregate for the compensations of employees and the Property incomes (D1 + D4). The property income (D4) is defined as the sum of profits, rents but also dividends and private interests, which are partially present in our database. The Lebanese accounts do no provide the subdivisions for these different sources of income (they only present the amount of Interests D41 included in D4).

We therefore approximated the income denominator of our top income shares as:

Compensations and other income revenues (D1+D4)
minus Interests (D41)
minus Social security contributions (D61)
plus Social security benefits (D62)

Other income revenues consist of dividends paid to owners of capital engaged in production and various incomes of sole proprietors (including Rents D45). In our database, dividends are just partially reported in the gross income, and not taxed through the profits tax. Owing to the lack of relevant data, wages, salaries and other incomes, excluding interests, have been compiled using the same aggregate since 1998 [68]. We find denominators varying between 49 percent and 57 percent of GDP between 2005 and 2010. Given the uncertainty surrounding the determination of the income denominator, we finally took as control 60 percent of GDP.

Table B.2: Derivation of the Income Denominator using National Accounts, Lebanon, 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
D1+D4	21,550	22,868	25,185	30,658	34,720	36,391	.	.
D41	6,211	6,397	6,397	6,524	8,308	9,566		
D61	1,031	951	1,110	1,084	1,145	1,452	.	.
D62	1,675	1,764	1,839	1,833	2,334	2,483	.	.
GDP	32,091	32,858	37,050	43,461	52,973	57,300	60,419	65,132
Control (% of GDP)	50	53	53	57	52	49	57	57
Value (60% of GDP)	19,255	19,715	22,230	26,077	31,784	34,380	36,251	39,079

Source: Lebanese National Accounts. Note: in billion LBP.

68. 2006-2007 National Accounts, Ministry of Finance, 2009.

Table B.3: Reference totals for population, income and inflation in Lebanon, 2005-2012

	Population						**Income**			**Inflation**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total Population ('000s)	Tax units (aged 15+) ('000s)	Number of tax files ('000s)	Tax files at the top ('000s)	(3)/(2)	(4)/(2)	GDP billion LBP	Control billion LBP	Real Average Income per tax unit US$	CPI 2010=100 %
2005	3,987	2,874	502	168	17.5%	5.8%	32,091	19,255	9,254	81
2006	4,079	2,964	509	170	17.2%	5.7%	32,858	19,715	9,127	82
2007	4,139	3,038	570	186	18.8%	6.1%	37,050	22,230	9,736	84
2008	4,186	3,109	607	224	19.5%	7.2%	43,461	26,077	10,393	90
2009	4,247	3,196	640	266	20.0%	8.3%	52,973	31,784	11,126	100
2010	4,341	3,312	654	281	19.7%	8.5%	57,300	34,380	11,600	100
2011	4,383	3,389	668	294	19.7%	8.7%	60,419	36,251	11,438	103
2012	4,425	3,467	686	346	19.8%	10.0%	65,132	39,079	11,491	111

Sources: World Bank data, Lebanese National Accounts.Note: 1507.5 LBP = 1US$

C Estimating Top Shares

C.1 Trends in top income shares

Table C.1: Top Income Shares in Lebanon, 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Top 5%	31.8	28.2	24.6	24.0	22.6	23.1	22.8	24.7
Top 1%	20.3	16.8	13.5	12.7	11.8	12.1	11.9	12.9
Top 0.5%	16.8	13.4	10.2	9.4	8.7	9.0	8.8	9.6
Top 0.1%	11.7	8.4	5.5	4.7	4.4	4.6	4.3	5.0
Top 0.05%	10.2	7.0	4.3	3.6	3.4	3.5	3.2	3.8
Top 0.01%	7.3	4.8	2.5	2.0	1.9	2.0	1.7	2.2

Sources: author's computations using income tax returns and tax units estimates.

Table C.2: Thresholds within top groups, Lebanon, 2005-2012

Thresholds	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Top 0.01%								
LBP ('000s)	1,230,000	796,000	579,000	601,000	615,000	729,000	713,000	856,000
US$	815,920	528,027	384,080	398,673	407,960	483,582	472,968	567,828
US$ PPP	1,667,751	1,103,915	799,856	787,072	734,591	880,031	849,831	984,678
Top 0.05%								
LBP ('000s)	255,000	222,000	216,000	233,000	251,000	273,000	290,000	316,000
US$	169,154	147,264	143,284	154,561	166,501	181,095	192,371	209,619
US$ PPP	345,753	307,876	298,392	305,138	299,809	329,559	345,654	363,503
Top 0.1%								
LBP ('000s)	157,000	146,000	146,000	163,000	176,000	191,000	200,000	218,000
US$	104,146	96,849	108,126	116,750	126,700	132,670	144,610	133,201
US$ PPP	212,876	202,477	201,691	213,465	210,225	230,571	238,382	250,771
Top 0.5%								
LBP ('000s)	58,200	57,200	60,800	68,700	75,600	80,000	83,500	92,600
US$	38,607	37,944	40,332	45,572	50,149	53,068	55,390	61,426
US$ PPP	78,913	79,327	83,992	89,970	90,301	96,574	99,524	106,520
Top 1%								
LBP ('000s)	37,800	37,200	39,900	45,500	50,700	54,300	55,400	62,100
US$	25,075	24,677	26,468	30,182	33,632	36,020	36,750	41,194
US$ PPP	51,253	51,590	55,120	59,587	60,559	65,550	66,032	71,435
Top 5%								
LBP ('000s)	11,200	11,000	11,800	14,200	16,400	17,200	17,600	20,400
US$	7,430	7,297	7,828	9,420	10,879	11,410	11,675	13,532
US$ PPP	15,186	15,255	16,301	18,596	19,589	20,763	20,978	23,467

Sources: author's computations using income tax returns and tax units estimates.

Table C.3: Thresholds within top groups (gross income), Lebanon, 2005-2012

Thresholds	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Top 0.01%								
LBP ('000s)	7,163,000	6,502,000	6,531,000	7,810,000	7,863,000	8,468,000	7,398,000	7,635,000
US$	4,751,575	4,313,101	4,332,338	5,180,763	5,215,920	5,617,247	4,907,463	5,064,677
US$ PPP	9,712,279	9,017,155	9,022,214	10,228,002	9,392,021	10,222,362	8,817,745	8,782,727
Top 0.1%								
LBP ('000s)	1,033,000	979,700	1,045,000	1,245,000	1,333,000	1,432,000	1,370,000	1,328,000
US$	685,240	649,884	693,201	825,871	884,245	949,917	908,789	880,929
US$ PPP	1,400,640	1,358,675	1,443,609	1,630,456	1,592,212	1,728,675	1,632,916	1,527,631
Top 0.5%								
LBP ('000s)	146,800	143,100	145,600	164,300	177,500	189,100	190,600	189,100
US$	97,380	94,925	96,584	108,988	117,745	125,439	126,434	125,439
US$ PPP	199,045	198,455	201,138	215,168	212,016	228,277	227,178	217,526
Top 1%								
LBP ('000s)	77,684	75,400	78,961	88,487	94,451	98,092	100,700	104,000
US$	51,532	50,017	52,379	58,698	62,654	65,069	66,799	68,988
US$ PPP	105,331	104,567	109,080	115,882	112,817	118,414	120,025	119,634
Top 5%								
LBP ('000s)	14,792	14,475	15,384	18,358	20,918	22,136	22,554	25,610
US$	9,812	9,602	10,205	12,178	13,876	14,684	14,961	16,988
US$ PPP	20,056	20,074	21,251	24,042	24,986	26,722	26,882	29,460

Sources: author's computations using income tax returns and tax units estimates.

Table C.4: Average income within top groups, Lebanon, 2005-2012

Thresholds	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Top 0.01%								
LBP ('000s)	4,890,000	3,220,000	1,840,000	1,650,000	1,910,000	2,050,000	1,810,000	2,420,000
US$	3,243,781	2,135,987	1,220,564	1,094,527	1,266,998	1,359,867	1,200,663	1,605,307
US$ PPP	6,630,329	4,465,586	2,541,858	2,160,845	2,281,414	2,474,710	2,157,356	2,783,785
Top 0.05%								
LBP ('000s)	1,370,000	937,000	624,000	603,000	673,000	733,000	692,000	861,000
US$	908,789	621,559	413,930	400,000	446,434	486,235	459,038	571,144
US$ PPP	1,857,577	1,299,458	862,021	789,691	803,870	884,860	824,801	990,429
Top 0.1%								
LBP ('000s)	783,000	558,000	399,000	398,000	441,000	480,000	464,000	560,000
US$	519,403	370,149	264,677	264,013	292,537	318,408	307,794	371,476
US$ PPP	1,061,666	773,850	551,196	521,222	526,756	579,444	553,046	644,182
Top 0.5%								
LBP ('000s)	225,000	178,000	149,000	158,000	173,000	187,000	188,000	215,000
US$	149,254	118,076	98,839	104,809	114,760	124,046	124,710	142,620
US$ PPP	305,076	246,855	205,835	206,917	206,641	225,742	224,079	247,320
Top 1%								
LBP ('000s)	136,000	112,000	98,900	106,000	117,000	126,000	127,000	145,000
US$	90,216	74,295	65,605	70,315	77,612	83,582	84,245	96,186
US$ PPP	184,402	155,325	136,625	138,818	139,752	152,104	151,372	166,797
Top 5%								
LBP ('000s)	42,600	37,500	36,000	40,300	44,900	48,000	48,700	55,600
US$	28,259	24,876	23,881	26,733	29,784	31,841	32,305	36,882
US$ PPP	57,761	52,006	49,732	52,777	53,631	57,944	58,046	63,958

Sources: author's computations using income tax returns and tax units estimates.

Table C.5: Average income within top groups (gross income), Lebanon, 2005-2012

Thresholds	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Top 0.01%								
LBP ('000s)	17,800,000	15,439,189	15,394,737	18,778,135	20,093,750	21,268,882	20,294,985	23,338,952
US$	11,807,629	10,241,585	10,212,097	12,456,474	13,329,187	14,108,711	13,462,677	15,481,892
US$ PPP	24,134,939	21,411,498	21,266,974	24,591,908	24,001,135	25,675,272	24,189,782	26,847,365
Top 0.05%								
LBP ('000s)	6,236,934	5,634,278	5,720,869	6,881,029	7,196,496	7,669,082	7,256,637	7,270,629
US$	4,137,270	3,737,498	3,794,938	4,564,530	4,773,795	5,087,285	4,813,690	4,822,971
US$ PPP	8,456,630	7,813,774	7,903,063	9,011,418	8,595,910	9,257,928	8,649,253	8,363,582
Top 0.1%								
LBP ('000s)	3,792,624	3,476,207	3,554,970	4,245,738	4,474,343	4,800,725	4,542,773	5,175,962
US$	2,515,836	2,305,941	2,358,189	2,816,410	2,968,055	3,184,560	3,013,448	3,433,474
US$ PPP	5,142,401	4,820,900	4,910,994	5,560,233	5,344,413	5,795,317	5,414,573	5,954,035
Top 0.5%								
LBP ('000s)	1,057,686	978,474	1,013,892	1,202,959	1,276,436	1,376,812	1,309,889	207,675
US$	701,616	649,070	672,565	797,983	846,724	913,308	868,915	137,761
US$ PPP	1,434,111	1,356,974	1,400,635	1,575,399	1,524,649	1,662,053	1,561,269	238,893
Top 1%								
LBP ('000s)	584,510	539,847	559,634	662,614	700,788	751,812	719,849	819,433
US$	387,735	358,108	371,233	439,545	464,868	498,714	477,512	543,571
US$ PPP	792,535	748,676	773,103	867,761	837,062	907,569	857,995	942,614
Top 5%								
LBP ('000s)	141,951	132,934	137,601	162,113	172,695	184,783	179,371	1,486,259
US$	94,163	88,182	91,278	107,538	114,557	122,576	118,986	985,910
US$ PPP	192,470	184,356	190,089	212,304	206,277	223,065	213,794	1,709,680

Sources: author's computations using income tax returns and tax units estimates.

C.2 Top capital shares

In this section, we compute *top profits shares* and *top capital shares*, that is top income shares including only business income (profits from sole proprietorships, partnerships, and S- corporations) and built property revenues. We ranked individuals according to their net profits and their net capital income (net profits + rents). Owing to the lack of alternative data, we used as denominator the total capital income reported in our data, a relatively acceptable approximation since capital income is generally mostly detained by the top income receivers. Concentration of profits remained stable between 2005 and 2012, while the evolution of top capital shares was driven by a decline in built property revenues. Additionally, profits are mostly detained by top income taxpayers.

Table C.6: Top Profits Shares in Lebanon, 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Top 1%	80.19	81.00	81.59	82.73	82.72	83.44	82.94	83.68
Top 0.5%	63.14	63.97	65.16	67.40	67.35	68.33	67.41	68.22
Top 0.1%	33.24	33.18	34.80	37.96	37.52	38.24	36.72	37.31
Top 0.01%	11.91	11.31	12.26	15.64	14.04	14.38	12.87	13.00

Sources: author's computations using income tax returns and tax units estimates.
Note: Net profits

Table C.7: Top "Capital" Shares in Lebanon, 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Top 1%	82.69	79.03	74.19	71.94	72.14	73.19	73.19	74.09
Top 0.5%	74.52	69.11	62.09	58.84	59.03	60.23	60.25	61.49
Top 0.1%	58.15	50.02	39.22	34.23	34.18	35.50	35.52	37.20
Top 0.01%	38.03	31.28	20.13	15.40	14.71	15.79	15.85	17.67

Sources: author's computations using income tax returns and tax units estimates.
Note: Net profits. "Capital" is the sum of profits and rents.

C.3 Gross income income distribution

Table C.8: Top Income Shares in Lebanon using gross income, 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Top 5%	93.49	88.01	86.09	86.81	81.01	82.85	77.86	67.58
Top 1%	75.19	70.19	68.73	69.57	64.85	66.63	61.72	53.44
Top 0.5%	67.71	62.95	61.82	62.92	58.90	60.71	55.84	48.52
Top 0.1%	47.74	44.09	43.30	43.69	41.12	42.35	38.59	34.06
Top 0.01%	20.57	18.61	18.20	18.19	18.15	18.44	16.85	15.42

Sources: author's computations using income tax returns and tax units estimates.

Table C.9: Ratio of total net income over gross income, 2005-2012

(%)	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Total Income	28	27	24	23	23	23	25	28
Labor Income	61	61	63	61	60	61	64	62
Profits	8	10	10	9	11	10	11	13

Sources: author's computations using income tax returns and tax units estimates.

C.4 Composition of Income

Table C.10: Decomposition of Top Income Shares by Source of Income, Lebanon, 2005-2012

	(%)	**Top 5%**	**Top 1%**	**Top 0.5%**	**Top 0.1%**	**Top 0.05%**	**Top 0.01%**
	Wages	47.4	32.6	24.9	9.9	5.6	1.3
	Rents	38.6	55.1	63.7	82.2	88.4	96.5
2005	Self-empl.	7.9	5.5	4.6	2.3	1.7	0.5
	Corp.	2.7	2.9	2.8	2.1	1.4	0.7
	Partners.	3.4	3.9	4.0	3.5	2.9	1.0
	Wages	54.3	41.0	33.6	16.8	3.2	3.2
	Rents	30.7	44.6	52.7	72.7	92.9	92.9
2006	Self-empl.	8.8	6.8	5.9	3.3	0.7	0.7
	Corp.	2.7	3.1	3.2	2.6	1.2	1.2
	Partners.	3.5	4.4	4.6	4.6	2.0	2.0
	Wages	61.7	51.0	44.6	28.4	21.8	11.0
	Rents	20.9	30.2	36.0	52.9	60.6	76.1
2007	Self-empl.	9.8	8.6	8.0	6.1	4.9	1.8
	Corp.	3.3	4.4	4.8	5.0	4.6	4.0
	Partners.	4.3	5.8	6.6	7.7	8.2	7.1
	Wages	67.7	58.8	53.8	42.7	38.4	30.3
	Rents	14.5	19.7	23.0	31.1	34.4	40.9
2008	Self-empl.	9.7	9.8	9.8	8.9	8.2	6.3
	Corp.	3.7	5.4	6.1	7.8	8.6	10.5
	Partners.	4.3	6.3	7.3	9.5	10.5	12.0
	Wages	69.2	59.8	54.5	43.1	39.7	37.5
	Rents	14.2	19.9	23.3	31.9	35.0	40.7
2009	Self-empl.	8.9	9.3	9.4	8.9	7.9	3.6
	Corp.	3.5	4.9	5.6	6.7	6.8	7.0
	Partners.	4.2	6.1	7.2	9.4	10.6	11.2
	Wages	68.3	58.4	52.5	40.0	36.5	33.2
	Rents	15.2	21.4	25.3	34.9	38.5	45.9
2010	Self-empl.	9.5	10.3	10.8	10.9	10.2	6.2
	Corp.	3.2	4.3	4.9	5.5	6.0	5.2
	Partners.	3.9	5.6	6.5	8.6	8.8	9.5
	Wages	67.4	56.9	50.8	35.8	29.8	19.1
	Rents	16.8	24.1	28.7	41.5	47.6	62.6
2011	Self-empl.	9.6	10.4	10.8	10.9	9.9	5.1
	Corp.	2.9	3.9	4.2	4.8	5.2	5.1
	Partners.	3.4	4.7	5.5	7.0	7.6	8.2
	Wages	70.4	60.3	54.5	41.2	37.4	32.5
	Rents	16.3	23.8	28.5	40.4	45.5	55.6
2012	Self-empl.	8.7	9.8	10.2	10.3	9.0	4.4
	Corp.	2.1	2.7	2.9	3.1	3.0	2.3
	Partners.	2.4	3.4	3.9	5.0	5.1	5.3

Sources: author's computations using income tax returns and tax units estimates.

Table C.11: Decomposition of Top Income Shares by Source of Income, Lebanon, 2005-2012

	(%)	**5%-1%**	**1%-0.5%**	**0.5%- 0.1%**	**0.1%-0.05%**	**0.05%-0.01%**	**0.01%**
2005	Wages	73.4	69.8	59.2	40.2	16.0	1.3
	Rents	9.7	12.9	21.6	38.9	68.0	96.5
	Self-empl.	12.0	10.2	9.7	7.1	4.6	0.5
	Corp.	2.3	3.3	4.5	6.3	3.3	0.7
	Partners.	2.5	3.8	5.1	7.4	8.2	1.0
2006	Wages	73.8	70.3	61.5	16.8	27.2	3.2
	Rents	10.1	12.9	19.4	72.7	54.0	92.9
	Self-empl.	11.8	10.6	10.3	3.3	5.6	0.7
	Corp.	2.0	2.8	4.3	2.6	4.3	1.2
	Partners.	2.3	3.4	4.6	4.6	8.9	2.0
2007	Wages	74.7	70.4	63.4	52.0	37.1	11.0
	Rents	9.7	12.5	16.5	25.3	38.5	76.1
	Self-empl.	11.3	10.4	10.2	10.4	9.3	1.8
	Corp.	2.0	3.3	4.5	6.4	5.3	4.0
	Partners.	2.3	3.4	5.4	6.0	9.7	7.1
2008	Wages	77.7	73.2	65.1	56.0	48.2	30.3
	Rents	8.6	10.3	14.7	20.7	26.4	40.9
	Self-empl.	9.6	9.7	10.7	11.3	10.4	6.3
	Corp.	1.9	3.3	4.5	5.2	6.2	10.5
	Partners.	2.1	3.5	5.0	6.7	8.8	12.0
2009	Wages	79.4	74.8	66.4	54.1	42.4	37.5
	Rents	8.0	10.1	14.4	21.8	27.6	40.7
	Self-empl.	8.6	8.8	10.0	12.1	13.5	3.6
	Corp.	1.9	3.0	4.4	6.3	6.5	7.0
	Partners.	2.1	3.2	4.8	5.6	9.9	11.2
2010	Wages	79.3	75.2	65.5	52.7	40.7	33.2
	Rents	8.3	10.4	15.4	22.0	29.1	45.9
	Self-empl.	8.6	8.7	10.6	13.6	15.2	6.2
	Corp.	1.9	2.8	4.2	4.0	6.9	5.2
	Partners.	2.0	2.9	4.4	7.6	8.1	9.5
2011	Wages	67.4	56.9	50.8	35.8	29.8	19.1
	Rents	16.8	24.1	28.7	41.5	47.6	62.6
	Self-empl.	9.6	10.4	10.8	10.9	9.9	5.1
	Corp.	2.9	3.9	4.2	4.8	5.2	5.1
	Partners.	3.4	4.7	5.5	7.0	7.6	8.2
2012	Wages	81.5	76.9	68.4	53.6	43.9	32.5
	Rents	8.1	10.5	16.1	23.5	32.5	55.6
	Self-empl.	7.5	8.6	10.1	14.5	15.0	4.4
	Corp.	1.4	2.2	2.6	3.6	3.9	2.3
	Partners.	1.4	1.9	2.7	4.8	4.7	5.3

Sources: author's computations using income tax returns and tax units estimates.

Table C.12: Decomposition of Top Income Shares by Source of Income (Gross income) Lebanon, 2005-2012

	(%)	**Top 5%**	**Top 1%**	**Top 0.5%**	**Top 0.1%**	**Top 0.05%**	**Top 0.01%**
	Wages	12.5	3.5	1.7	0.2	0.2	0.01
	Rents	11.6	12.3	12.7	13.5	14.1	15.7
2005	Self-empl.	17.0	14.0	10.7	5.2	3.9	3.0
	Corp.	32.2	38.8	41.5	47.5	49.4	50.8
	Partners.	26.6	31.4	33.5	33.5	32.3	30.4
	Wages	13.5	4.2	2.1	0.3	0.2	0.01
	Rents	8.6	8.7	8.7	8.6	8.8	11.1
2006	Self-empl.	17.9	15.0	11.7	5.6	3.8	1.7
	Corp.	31.1	37.8	40.6	46.5	48.2	49.0
	Partners.	28.8	34.4	36.9	38.9	38.9	38.2
	Wages	14.3	4.6	2.4	0.4	0.3	0.02
	Rents	5.4	4.8	4.5	3.5	3.4	3.8
2007	Self-empl.	18.7	16.0	12.8	6.8	4.5	2.0
	Corp.	31.7	38.7	41.6	48.3	50.1	51.3
	Partners.	29.9	35.9	38.7	41.0	41.5	42.8
	Wages	14.8	5.1	2.9	0.8	0.9	1.0
	Rents	3.5	2.7	2.3	1.3	1.2	1.0
2008	Self-empl.	18.9	16.7	14.0	8.0	5.9	4.5
	Corp.	32.9	39.9	42.7	49.6	51.5	51.4
	Partners.	29.9	35.7	38.2	40.3	40.6	42.1
	Wages	15.7	5.4	3.1	1.3	1.5	1.9
	Rents	3.6	2.8	2.4	1.4	1.3	1.1
2009	Self-empl.	19.3	17.4	14.9	9.4	7.1	5.3
	Corp.	31.2	38.0	40.6	46.2	47.7	44.2
	Partners.	30.2	36.4	38.9	41.7	42.5	47.6
	Wages	15.5	5.3	3.0	1.0	1.1	1.3
	Rents	3.8	3.1	2.7	1.6	1.6	1.3
2010	Self-empl.	20.1	18.3	16.2	10.4	8.2	4.5
	Corp.	30.8	37.4	40.0	45.7	46.6	46.5
	Partners.	29.8	35.8	38.2	41.3	42.5	46.4
	Wages	15.9	5.4	2.8	0.4	0.2	0.02
	Rents	4.4	3.7	3.2	2.1	2.1	1.8
2011	Self-empl.	22.4	21.0	19.0	13.9	12.0	9.1
	Corp.	29.1	35.7	38.3	43.8	45.3	46.1
	Partners.	28.2	34.2	36.6	39.7	40.4	43.1
	Wages	19.1	7.4	4.3	1.3	1.0	0.9
	Rents	4.9	4.4	3.9	2.8	2.7	2.8
2012	Self-empl.	21.7	20.6	18.9	13.7	11.7	9.7
	Corp.	27.2	34.0	36.7	42.3	44.0	42.3
	Partners.	27.2	33.6	36.2	39.9	40.5	44.3

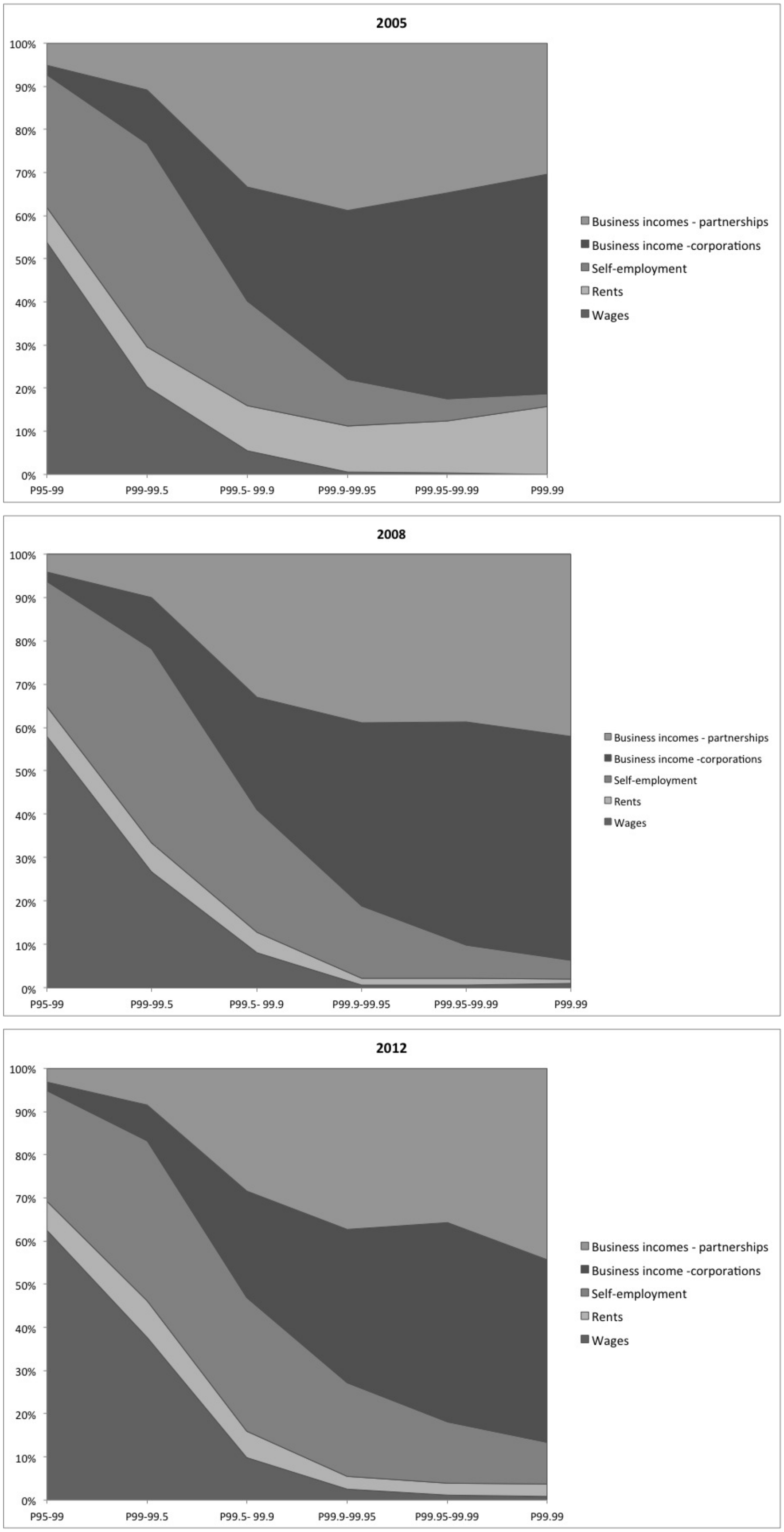
Sources: author's computations using income tax returns and tax units estimates.

Table C.13: Decomposition of Top Income Shares by Source of Income (gross income), Lebanon, 2005-2012

	(%)	**5%-1%**	**1%-0.5%**	**0.5%- 0.1%**	**0.1%-0.05%**	**0.05%-0.01%**	**0.01%**
	Wages	53.8	20.3	5.5	0.6	0.4	0.01
	Rents	8.1	9.2	10.6	10.7	12.1	15.7
2005	Self-empl.	30.7	47.2	24.2	10.9	5.1	3.0
	Corp.	2.2	12.3	26.4	39.1	47.8	50.8
	Partners.	5.2	10.9	33.3	38.8	34.7	30.4
	Wages	73.8	70.3	61.5	16.8	27.2	3.2
	Rents	8.3	8.9	8.7	8.6	6.2	11.1
2006	Self-empl.	30.6	45.6	26.4	5.6	6.3	1.7
	Corp.	2.2	11.3	26.3	46.5	47.3	49.0
	Partners.	4.8	10.6	32.0	38.9	39.7	38.2
	Wages	55.6	24.7	7.1	0.7	0.7	0.02
	Rents	7.9	7.4	6.7	3.9	3.0	3.8
2007	Self-empl.	29.9	46.5	26.8	15.8	7.3	2.0
	Corp.	2.1	11.7	26.0	41.0	48.9	51.3
	Partners.	4.6	9.7	33.4	38.6	40.1	42.8
	Wages	57.9	26.7	8.1	0.6	0.7	1.0
	Rents	7.0	6.8	4.7	1.6	1.5	1.0
2008	Self-empl.	28.9	44.7	28.2	16.7	7.7	4.5
	Corp.	2.1	11.6	25.9	42.2	51.4	51.4
	Partners.	4.2	10.2	33.1	39.0	38.8	42.1
	Wages	59.4	29.5	7.3	0.6	0.9	1.9
	Rents	6.7	7.2	4.8	1.7	1.5	1.1
2009	Self-empl.	27.8	42.2	27.8	19.0	9.3	5.3
	Corp.	2.2	10.8	27.6	40.2	51.8	44.2
	Partners.	3.9	10.2	32.5	38.4	36.4	47.6
	Wages	59.6	30.3	7.6	0.6	0.9	1.3
	Rents	6.9	7.8	5.0	1.9	1.9	1.3
2010	Self-empl.	27.6	41.3	28.9	20.8	12.7	4.5
	Corp.	2.3	9.9	27.3	40.7	46.9	46.5
	Partners.	3.7	10.6	31.2	35.9	37.6	46.4
	Wages	58.6	31.2	8.3	1.4	0.5	0.02
	Rents	7.3	8.3	5.8	2.3	2.5	1.8
2011	Self-empl.	28.1	41.1	30.5	21.7	15.7	9.1
	Corp.	2.3	9.5	25.7	37.9	44.3	46.1
	Partners.	3.7	9.8	29.7	36.8	37.1	43.1
	Wages	62.5	37.6	9.8	2.5	1.2	0.9
	Rents	6.8	8.5	6.2	3.0	2.7	2.8
2012	Self-empl.	25.7	37.2	31.0	21.8	14.4	9.7
	Corp.	2.0	8.1	24.5	35.5	46.1	42.3
	Partners.	3.1	8.5	28.5	37.3	35.7	44.3

Sources: author's computations using income tax returns and tax units estimates.

Figure C.1: Composition of top (gross) income shares in 2005, 2008 and 2012



Sources: author's computations using income tax returns and tax units estimates, Table C.13.

Gross income follows a different pattern. Business incomes are the main component of top gross income shares. Their share increases constantly as one moves up within top groups. Regarding rents, the pattern is also quite different. Except in 2005 and 2006, the share of rental income decreases when one goes further up within top groups. Finally, similar to total income, the share of wages and self-employment incomes decreased within top groups. From 2005 to 2012, the evolution of the composition of top incomes is marked by a constant decrease in the share of rental incomes (Figure C.1). Nevertheless, this decrease is not anymore compensated by an increase in the share of wages but rather by an increase in business incomes and self-employment incomes.

D Inverted Pareto coefficients

D.1 For all incomes

Table D.1: Evolution of the Inverted Pareto coefficient in Lebanon, 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
P95	3.8	3.4	3.1	2.8	2.7	2.8	2.8	2.7
P99	3.6	3.0	2.5	2.3	2.3	2.3	2.3	2.3
P99.5	3.9	3.1	2.5	2.3	2.3	2.3	2.2	2.3
P99.9	5.0	3.8	2.7	2.4	2.5	2.5	2.3	2.6
P99.95	5.4	4.2	2.9	2.6	2.7	2.7	2.4	2.7
P99.99	4.0	4.0	3.2	2.8	3.1	2.8	2.5	2.8

Sources: author's computations using income tax returns and tax units estimates.

D.2 By source of income

Table D.2: Evolution of the Inverted Pareto coefficient in Lebanon (gross wages), 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
P95	2.7	2.8	2.8	2.6	2.5	2.6	2.5	2.5
P99	1.9	2.0	2.0	2.1	2.0	2.0	2.0	2.0
P99.5	1.8	1.9	1.9	2.0	2.0	1.9	1.9	1.9
P99.9	1.7	1.7	1.8	2.0	2.1	2.1	1.8	2.1
P99.95	1.7	1.7	1.8	2.1	2.3	2.2	1.8	2.2
P99.99	1.8	1.7	1.9	2.4	3.1	2.7	1.9	2.5

Sources: author's computations using income tax returns and tax units estimates.
Note: Gross wages distribution.

Table D.3: Evolution of the Inverted Pareto coefficient in Lebanon (net wages), 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
P95	.	.	.	13.0	6.8	6.5	6.3	4.8
P99	2.4	2.5	2.5	2.4	2.3	2.2	2.3	2.2
P99.5	2.0	2.1	2.1	2.1	2.0	2.0	2.1	2.1
P99.9	1.8	1.8	1.9	2.0	1.9	1.9	2.0	2.1
P99.95	1.8	1.8	1.9	2.1	1.9	1.9	2.0	2.2
P99.99	1.8	1.8	1.9	2.1	2.0	1.9	2.1	2.3

Sources: author's computations using income tax returns and tax units estimates.
Note: Net wages distribution. Values are missing when the denominator is null.

Table D.4: Evolution of the Inverted Pareto coefficient in Lebanon (gross profits), 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
P95	.	.	.	.	.	.	.	.
P99	9.2	9.2	9.4	10.3	10.2	10.6	10.0	10.2
P99.5	7.4	7.4	7.6	8.6	8.8	9.2	8.9	9.0
P99.9	3.7	3.5	3.4	3.5	3.4	3.4	3.4	3.5
P99.95	3.2	3.0	2.9	3.0	3.0	3.0	3.0	3.0
P99.99	2.5	2.3	2.3	2.4	2.5	2.5	2.7	2.7

Sources: author's computations using income tax returns and tax units estimates.
Note: Gross profits distribution.

Table D.5: Evolution of the Inverted Pareto coefficient in Lebanon (net profits), 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
P95	.	.	.	.	.	.	.	.
P99	3.0	3.1	3.2	3.6	3.6	3.7	3.6	3.7
P99.5	2.8	2.8	2.9	3.2	3.2	3.2	3.1	3.2
P99.9	2.3	2.2	2.3	2.6	2.5	2.5	2.4	2.4
P99.95	2.3	2.2	2.3	2.5	2.4	2.4	2.3	2.3
P99.99	2.2	2.1	2.1	2.7	2.2	2.2	2.0	2.0

Sources: author's computations using income tax returns and tax units estimates.
Note: Net profits distribution.

Table D.6: Evolution of the Inverted Pareto coefficient in Lebanon (rents), 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
P99	14.9	10.5	6.9	5.4	5.4	5.6	5.9	6.1
P99.5	12.2	8.7	5.7	4.3	4.4	4.6	4.7	4.9
P99.9	8.9	7.2	4.7	3.4	3.5	3.6	3.7	4.0
P99.95	7.8	6.6	4.6	3.2	3.3	3.5	3.6	3.8
P99.99	4.2	4.9	4.0	3.2	3.2	3.5	3.6	3.9

Sources: author's computations using income tax returns and tax units estimates.
Note: Built property income distribution.

E Impact of personal taxation in Lebanon

E.1 Pre and post-tax top income shares

E.1.1 Within our top groups

Table E.1: Top Income Shares after Personal Taxation in Lebanon, 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Top 5%	30.9	27.3	23.7	22.8	21.5	21.9	21.6	23.4
Top 1%	19.5	16.1	12.7	11.7	10.9	11.2	11.0	11.9
Top 0.5%	16.2	12.8	9.5	8.6	8.0	8.2	8.1	8.8
Top 0.1%	11.4	8.1	5.1	4.3	4.0	4.2	4.0	4.6
Top 0.05%	10.1	6.8	4.0	3.3	3.1	3.2	3.0	3.5
Top 0.01%	7.3	4.8	2.4	1.8	1.8	1.8	1.6	2.0

Sources: author's computations using income tax returns and tax units estimates.
Note: Individuals are ranked according to their total income.

E.1.2 Excluding rents

Table E.2: Top Income Shares excluding rents in Lebanon, 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Top 5%	23.8	22.8	21.7	22.2	20.9	21.2	20.6	22.5
Top 1%	11.7	11.4	10.9	11.3	10.4	10.6	10.2	11.0
Top 0.5%	8.3	8.0	7.7	8.2	7.5	7.6	7.2	7.8
Top 0.1%	3.5	3.4	3.4	3.8	3.5	3.6	3.1	3.6
Top 0.05%	2.5	2.3	2.3	2.8	2.6	2.6	2.2	2.6
Top 0.01%	1.1	1.0	1.0	1.5	1.4	1.4	0.9	1.3

Sources: author's computations using income tax returns and tax units estimates.
Note: Individuals are ranked according to their total income, excluding built property revenues. The control for income excludes the total amount of built property revenues reported in the tax data, for each year.

Table E.3: Top Income Shares, excluding rents, after personal taxation in Lebanon, 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Top 5%	22.7	21.8	20.7	20.9	19.7	20.0	19.4	21.1
Top 1%	10.8	10.5	10.0	10.2	9.5	9.6	9.2	10.0
Top 0.5%	7.5	7.3	7.0	7.3	6.7	6.8	6.4	7.0
Top 0.1%	3.1	3.0	2.9	3.3	3.1	3.1	2.7	3.1
Top 0.05%	2.1	2.0	2.0	2.4	2.3	2.3	1.8	2.3
Top 0.01%	0.9	0.8	0.8	1.2	1.2	1.2	0.8	1.1

Source: author's computations using income tax returns and tax units estimates
Note: Individuals are ranked according to their income, excluding built property revenues.

Table E.4: Difference Between Pre and Post-Tax Top Income Shares in Lebanon (income excluding rents) 2005-2012

	2005	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
P95	1.0	1.0	1.0	1.3	1.2	1.3	1.2	1.4
P99	0.9	0.8	0.9	1.1	0.9	1.0	1.0	1.1
P99.5	0.8	0.7	0.7	0.9	0.8	0.8	0.8	0.9
P99.9	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.5
P99.95	0.3	0.3	0.4	0.4	0.3	0.4	0.3	0.3
P99.99	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2

Sources: author's computations using income tax returns and tax units estimates.
Note: Results in percentage points. Individuals are ranked according to their income, excluding built property revenues.

E.2 Effective Average rates

Table E.5: Average rates on wages, profits and total income (excluding rents), within each fractile, Lebanon 2005-2012

		P95-99	**P99-99.5**	**P99.5-99.9**	**P99.9-99.95**	**P99.95-99.99**	**P99.99**
	Labor	1.4	4.1	7.3	11.0	14.6	14.0
2005	Profits	2.2	5.5	9.0	13.3	16.8	11.3
	Income	1.4	3.9	6.1	7.2	5.1	0.4
	Labor	1.3	3.6	6.7	12.7	13.7	17.6
2006	Profits	2.2	5.6	8.7	15.9	16.1	19.4
	Income	1.3	3.5	5.8	3.8	6.8	1.3
	Labor	1.6	4.2	6.7	10.5	13.7	16.7
2007	Profits	2.5	5.9	9.2	13.3	16.5	19.2
	Income	1.6	4.0	6.1	8.5	9.2	4.3
	Labor	2.4	6.8	9.1	12.7	15.0	14.3
2008	Profits	3.0	6.6	10.1	13.7	16.4	14.4
	Income	2.3	6.1	7.9	10.3	11.4	8.5
	Labor	2.4	5.6	8.6	11.1	14.6	8.2
2009	Profits	3.5	7.3	10.7	14.2	16.7	16.9
	Income	2.4	5.3	7.8	9.4	11.2	6.8
	Labor	2.4	5.8	8.8	11.5	14.8	8.5
2010	Profits	4.0	7.4	11.0	14.7	17.1	18.9
	Income	2.4	5.4	7.9	9.8	11.2	6.8
	Labor	6.3	5.9	8.9	11.5	14.1	14.3
2011	Profits	4.1	7.8	11.3	15.7	17.2	19.1
	Income	5.5	5.5	7.9	9.8	10.6	6.2
	Labor	3.0	6.4	9.2	12.0	14.0	9.4
2012	Profits	4.6	8.3	12.0	15.6	17.0	17.8
	Income	3.0	6.0	8.2	10.1	10.2	5.2

Sources: author's computations using income tax returns and tax units estimates.
Notes: Individuals are ranked according to their total income. The average rate on wages equals the total amount of labor income tax levied divided by the total amount of gross wages of this group. The average rate on profits equals the total amount of income tax levied on profits divided by the total amount of net profits of the group. The total effective average rate equals the total amount of tax levied on labor and profits divided by the total amount of income excluding rents (gross wages and net profits).

Table E.6: Average rates on wages, profits and total gross income (excluding rents), within each fractile, Lebanon 2005-2012

		P95-99	**P99-99.5**	**P99.5-99.9**	**P99.9-99.99**	**P99.99**
	Labor	2.81	8.05	11.86	13.59	5.90
2005	Profits	0.31	0.61	0.56	0.35	0.21
	Total income	1.77	2.28	1.25	0.41	0.21
	Labor	2.53	7.37	11.58	16.87	6.11
2006	Profits	0.28	0.62	0.55	0.36	0.24
	Total income	1.61	2.36	1.35	0.45	0.25
	Labor	2.84	7.40	12.13	15.15	8.89
2007	Profits	0.35	0.63	0.61	0.43	0.30
	Total income	1.85	2.43	1.49	0.54	0.30
	Labor	4.16	10.55	14.20	22.82	1.97
2008	Profits	0.37	0.70	0.68	0.46	0.27
	Total income	2.73	3.52	1.82	0.61	0.29
	Labor	3.88	9.14	12.94	16.98	0.03
2009	Profits	0.43	0.76	0.73	0.51	0.28
	Total income	2.63	3.42	1.67	0.65	0.28
	Labor	3.96	9.39	13.18	12.17	0.08
2010	Profits 0.42	0.85	0.74	0.57	0.32	
	Total income	2.69	3.66	1.73	0.66	0.32
	Labor	4.02	9.26	12.67	12.37	6.82
2011	Profits	0.43	0.90	0.79	0.54	0.31
	Total income	2.70	3.75	1.84	0.64	0.31
	Labor	4.40	9.08	12.49	10.78	0.14
2012	Profits	0.47	0.97	0.91	0.55	0.25
	Total income	3.10	4.31	2.29	0.73	0.25

Sources: author's computations using income tax returns and tax units estimates.
Notes: Individuals are ranked according to gross income. The average rate on wages equals the total amount of labor income tax levied divided by the total amount of gross wages of this group. The average rate on profits equals the total amount of income tax levied on profits divided by the total amount of gross profits of the group. The total effective average rate equals the total amount of tax levied on labor and profits divided by the total amount of income excluding rents (gross wages and gross profits).

E.3 Taxable and Non-Taxable income

E.3.1 By schedule

Table E.7: Amount of taxable and non-taxable income by schedule within each fractile, Lebanon 2005 and 2012

		Wages				All income			
		Taxable	**%**	**Non-Tax.**	**%**	**Taxable**	**%**	**Non-Tax.**	**%**
2005	P95-99	525	31.3	1,150	68.7	552	26.9	1,500	73.1
	P99-99.5	327	65.8	170	34.2	334	59.0	232	41.0
	P99.5-99.9	514	77.1	152	22.9	525	64.2	293	35.8
	P99.9-99.99	274	83.7	53	16.3	282	71.0	115	29.0
	P99.99	100	86.2	16	13.8	100	85.4	17	14.6
2012	P95-99	2,220	57.8	1,620	42.2	2,270	51.4	2,150	48.6
	P99-99.5	827	78.1	232	21.9	845	69.4	373	30.6
	P99.5-99.9	1,100	78.7	297	21.3	1,130	69.7	492	30.3
	P99.9-99.99	578	82.3	124	17.7	591	78.7	160	21.3
	P99.99	257	64.2	143	35.8	257	63.9	145	36.1

		Profits				All income			
		Taxable	**%**	**Non-Tax.**	**%**	**Taxable**	**%**	**Non-Tax.**	**%**
2005	P99-99.5	221	18.8	953	81.2	233	19.6	957	80.4
	P99.5-99.9	315	8.7	3,300	91.3	330	9.1	3,300	90.9
	P99.9-99.99	171	3.3	4,970	96.7	174	3.4	4,970	96.6
	P99.99	65	1.5	4,390	98.5	65	1.5	4,390	98.5
2012	P99-99.5	326	20.0	1,300	80.0	354	21.2	1,320	78.8
	P99.5-99.9	597	10.2	5,250	89.8	639	10.8	5,270	89.2
	P99.9-99.99	328	3.9	8,000	96.1	335	4.0	8,000	96.0
	P99.99	95	1.4	6,790	98.6	96	1.4	6,790	98.6

Sources: author's computations using income tax returns and tax units estimates.
Notes: Individuals are ranked according to gross wages or profits. Amounts in million LBP.

E.3.2 Total income

Table E.8: Amounts of taxable and non-taxable income within each fractile, Lebanon 2005 and 2012

		P95-99	P99-99.5	P99.5-99.9	P99.9-99.99	P99.99
				2005		
	Taxable income	1,210	459	664	318	47
Income	Share(%)	20.5	18.4	16.8	13.5	7.5
	Non-Taxable	4,700	2,030	3,290	2,040	583
	Share(%)	79.5	81.6	83.2	86.5	92.5
	Taxable wages	727	322	443	163	14
Wages	Share(%)	57.4	77.8	83.1	92.8	95.9
	Non-Taxable wages	539	92	90	13	1
	Share (%)	42.6	22.2	16.9	7.2	4.1
	Taxable Profits	487	137	221	155	33
Profits	Share(%)	10.5	6.6	6.4	7.1	5.4
	Non-Taxable Profits	4,160	1,940	3,200	2,030	582
	Share(%)	89.5	93.4	93.6	92.9	94.6
				2012		
	Taxable income	2,850	939	1,310	723	248
Income	Share (%)	27.3	24.8	20.9	20.9	22.8
	Non-Tax.	7590	2850	4950	2740	840
	Share (%)	72.7	75.2	79.1	79.1	77.2
	Taxable wages	2,240	753	984	453	141
Wages	Share (%)	67.3	82.6	87.9	93.5	89.4
	Non-Tax.wages	1,090		158 135	32	17
	Share (%)	32.7	17.4	12.1	6.5	10.6
	Taxable Profits	609	187	321	271	107
Profits	Share(%)	8.6	6.5	6.3	9.1	11.5
	Non-Tax. Profits	6,500	2,690	4,820	2,700	823
	Share (%)	91.4	93.5	93.7	90.9	88.5

Sources: author's computations using income tax returns and tax units estimates.
Notes: Individuals are ranked according to total income. Amounts in billion LBP.