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► To cite this version:

Lydia Assouad. Rethinking the Lebanese economic miracle: The extreme concentration of income and wealth in Lebanon 2005-2014. 2017. halshs-02795688v1

HAL Id: halshs-02795688

<https://shs.hal.science/halshs-02795688v1>

Preprint submitted on 5 Jun 2020 (v1), last revised 25 Mar 2021 (v2)

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"Rethinking the Lebanese economic miracle: The extreme concentration of income and wealth in Lebanon 2005-2014"

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Keywords : Income Inequality; wealth inequality; lebanon; distribution; concentration; fiscal data



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Rethinking the Lebanese economic miracle: The extreme concentration of income and wealth in Lebanon 2005-2014

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First version: September 26, 2017

This version: September 19, 2018

Abstract

I combine household surveys, national accounts and personal income tax records for the 2005-2014 period to produce the first estimates of the national income distribution in Lebanon. I find that income is extremely concentrated, with the top 1 and 10% of the adult population receiving 25 and 55% of national income on average, placing Lebanon among the countries with the highest level of income inequality in the world. These figures, which are the first recent statistics on income inequality in an Arab country, question the view of Lebanon as a paragon of economic success in the Middle East. The dynamism of the tourism, banking and real-estate sectors has benefited only a minority of the population, while a large part still lives in extreme poverty.

JEL-Codes: D3, O53.

Keywords: Inequality, Lebanon.

*Paris School of Economics, lydia.assouad@gmail.com. This paper is supplemented by a data appendix available at <https://wid.world/country/lebanon/>. I am very grateful to Thomas Piketty for his guidance throughout the realization of this work. I also thank Facundo Alvaredo, Julian Langer, Charbel Nahas, Nisreen Salti, Fawwaz Traboulsi, Gabriel Zucman and seminar participants at the American University of Beirut, Saint-Joseph University and the Paris School of Economics for very helpful comments. Finally, I am grateful to Alain Bifani and Mireille Mouawad from the Lebanese Ministry of Finance, Eric Le Borgne from the World Bank and Georges Corm for helping me access the fiscal data. This paper was partly drafted during my visit at the Institute for Research on Labor and Employment and benefitted from fundings from the Center for Equitable Growth at UC Berkeley.

1 Introduction

How unequal are Arab countries? The recent consolidation of autocracies, the outbreak of devastating civil wars and the massive refugees displacement renewed the interest in the link between political and economic inequality in the Arab world. Unfortunately, the data available in the region remain insufficient to derive reliable trends of income shares at the national level and to get a good understanding of these issues (Bibi and Nabli, 2010). In Lebanon, for example, the last income share figures published date back to 1960 (Ministry of Planning, 1968). The only recent study available is based on information on consumption from survey data and focuses on poverty (El Laithy et al., 2008).

In this paper, I exploit unique fiscal micro data recently shared by the Lebanese Ministry of Finance to produce the first estimations of income distributions in an Arab country. More precisely, I combine this novel database with survey tabulations, national accounts, public finance reports and wealth rankings to estimate the distribution of national income in Lebanon between 2005 and 2014, following Alvaredo et al. (2016). I find that the top 10 and 1% of the adult population receive approximately 55 and 25% of total national income, which places Lebanon among the countries with the highest levels of income inequality in the world, alongside Brazil, Colombia, Russia, South Africa and the United States (Alvaredo et al. 2018).

Measuring inequality in Lebanon is interesting for three reasons. First, it can shed light on inequality in the Middle East as a whole, given that it is the only country in the region for which fiscal data are available. Alvaredo, Assouad and Piketty (2017) build on the results of this paper to estimate inequality statistics at the regional level between 1990 and 2016. They use the Lebanese fiscal data to derive correction factors for the top of survey income distributions in all countries of the region, given that the correction made in Lebanon is similar to other countries where both survey and fiscal data are also available. Second, the Lebanese case can help understand the distributional consequences of very specific political economy features: Lebanon has on the one hand the oldest liberal market system in the region and has constantly opted for laissez-faire economic policies since its independence (Jawad, 2009, Gaspard, 2004), and, on the other hand, is characterized by a crony capitalism based on rental activities (Diwan et al. 2015, Chaaban,

2016). Third, the extreme levels of inequality that I find question a widespread narrative depicting Lebanon as a paragon of economic success in the Middle East. According to this narrative, sometimes coined the "*Lebanese economic miracle*", the country economically performs better than its neighbors, despite numerous political shocks. As Figure 1 shows, per adult national income, expressed in market exchange rate, has indeed been systematically higher in Lebanon than in neighboring countries since 1950. Looking at per adult national income expressed in purchasing power parity (Figure 2) however already suggests that the relative living standards in Lebanon may not be that high and that incoming financial flows play a major role in Lebanon's relative economic prosperity. My results show that the revenues generated by the dynamic financial and real estate sectors, but also by trade activities, luxury tourism and remittances has benefited only a minority of the population, while a large part did not benefit from the "*economic miracle*" and still lives in extreme poverty.

This paper contributes to a growing literature on income inequality in the Middle East. Indeed, following the Arab Spring movement, several papers produced inequality statistics in the region. They found that income inequality was not particularly high by international standards, suggesting that the source of dissatisfaction must be found elsewhere (Hlasny and Verme, 2013, World Bank, 2012, Bibi and Nabli, 2010). This surprising fact, coined "the Enigma of Inequality" (UNDP, 2012) or the "Arab Inequality Puzzle" (World Bank, 2015), has produced a rising literature on inequality in the region (Ncube and Anyanwu, 2012; Hassine, 2015, Hlasny and Verme, 2015 or Assaad et al. 2017). As Alvaredo, Assouad and Piketty (2017), this paper argues that the answer of the "enigma" lies in a measurement issue and that one needs to complement survey data with additional data sources, ideally fiscal data, to properly account for income inequality. To my knowledge, this paper is the first to use fiscal data to correct the top of the survey income distribution in an Arab country (see also Van der Weide et al. (2016), which uses housing price data to estimate the top tail of the income distribution in Egypt in the absence of data from tax records).

The remainder of the paper proceeds as follows. In Section 2, I describe the data sources, concepts and methodology used. Section 3 presents the results on the evolution

of income inequality in Lebanon between 2005 and 2014 and compares them to other countries. Section 4 concludes. This paper is supplemented by an online appendix that includes all raw data sources and computer codes and presents additional results and robustness checks.

2 Data Sources, Concepts and Methodology

This paper relies on five data sources: household survey tabulations, fiscal micro data, national accounts, public finance reports and wealth rankings. It is part of a growing literature that attempts to produce distributional statistics comparable across countries and using a standardized methodology (Alvaredo et al. 2016, 2018 and the World Inequality Database, at <http://WID.world>). The methodology used has already been applied to the United States, France, China and Russia (Piketty, Saez and Zucman, 2016; Garbinti, Goupille-Lebret and Piketty, 2017, Piketty, Yang and Zucman, 2017; Novokmet, Piketty and Zucman, 2017). It consists of three steps: (1) generating income distribution series using household survey data, (2) correcting the income levels at the top of the survey distribution with fiscal data, (3) correcting for missing non-fiscal and tax-exempt incomes using national accounts and rich lists published by magazines. The approach adopted for Lebanon follows the same structure, with some adaptations described in the following.¹

2.1 First step: deriving survey income distribution

Lebanese survey data are scarce (see Table 2.1 p29 in World Bank, 2016, for a review of existing survey-based studies). In the recent period, only three surveys have been undertaken: in 1997, 2004 and 2007. The micro-data are difficult to access: only El-Laithy et al. (2008) got access to micro-data on consumption and could produce valuable results on the bottom of the consumption distribution.² The only existing figures on the entire income distribution date back from the first nationally representative survey conducted in 1960.³ I unfortunately was not able to access micro-data on income. I therefore used two

¹Detailed descriptions of methods and robustness checks are provided in the online appendix available at <https://wid.world/document/assouad-appendix-widworldwp201714/>.

²They document that nearly 8% of the population, that is 300,000 individuals, live under conditions of "extreme poverty" (less than US\$ 2.40 per day) and are not able to meet most basic food and non-food needs. They however find a relatively low Gini coefficient of 0.37 for the consumption distribution.

³The 1960 study shows large income disparities, with the richest 4% receiving 32% of total income while the following 14 and 32% have respectively 28 and 22%. The remaining half of the population is

tables indicating the household frequencies for thirteen income groups published by the Lebanese Central Administration of Statistics (CAS), for 2005 and 2007 (before and after the 2006 war). Using these tables, exploitable thanks to the newly developed generalized Pareto interpolation techniques (Blanchet et al., 2017), I estimate the full distribution of income expressed in generalized percentiles for the two years.⁴

Two main issues arise. The first issue is related to the unit of observation. I take the adult individual (i.e. aged 20 and more) as the basic unit, and I assume that income is equally split between adult household members (Alvaredo et al, 2016).⁵ The second issue concerns the years without data. I use the tabulation titled "before the war" to estimate the 2005 and 2006 distributions and the tabulation "after the war" for the following years. I then anchor all income distribution to the relevant annual average income, that is for every year, I proportionally upgrade all income levels for all percentiles so that per adult average income coincides always with per adult average national income observed in the WID macroeconomic database. By construction this has no impact on income shares. I overall obtain series of survey income shares for 2005-2014 matching national accounts average income.

I stress that the raw data are highly deficient. First, it is difficult to assess the quality of the underlying survey data, as the CAS does not share methodological information or the raw data used to produce the tables. Second, the survey tabulations do not provide detailed information on income categories. We therefore do not know which income type is included in the income variable and how the income concept captured in the survey data matches the one from the fiscal data and national accounts. Second, it is impossible to draw robust conclusions on the evolution of inequality for the bottom of the distribution. In particular, the effect of the large Syrian refugees influx after 2011 on inequality is not taken into account (except through their aggregate effect on average income).

left with 18% of the national income, including 2% for the poorest 9% (Ministry of Planning, 1968).

⁴Generalized percentiles (or g-percentiles) are 127 income groups along the income distribution: 99 for the bottom 99 percentiles, 9 for the bottom 9 tenth-of-percentiles of the top percentile, 9 for the bottom 9 one-hundredth-of-percentiles of the top tenth-of-percentile, and 10 for the 10 one-thousandth-of-percentile of the top one-hundredth-of-percentile. The interpolation code is available at <https://wid.world/gpinter/>. It estimates income distribution from tables with even few income groups.

⁵Therefore, I divide household income by the number of adults in each household. As no additional information is available, I apply the same adults/children ratio to all brackets: if high earners have fewer children than average, inequality is slightly underestimated.

2.2 Second step: fiscal correction of the survey distributions

The second step consists in correcting the top of the survey distribution using fiscal data. As it is now widely acknowledged, inequality statistics based on surveys are seriously downward biased, due to under-reporting, truncations and top coding problems at the top. I follow a method is similar to Piketty et al. (2017) and Novokmet et al. (2017). I first present the Lebanese personal income tax and the fiscal records used in this paper. Then, I describe the correction procedure.

The Lebanese Personal Income Tax created in 1959 is a schedular, progressive and individual tax which taxes separately: (1) business income (profits made by self-employed individuals, partners in partnerships and individuals in small corporations) at marginal rates ranging from 4 to 21%, (2) labor income (salaries, wages, bonuses, allowances, life annuities, pension payments, and other benefits in cash and kind) at rates ranging from 2 to 20% and, finally, (3) incomes from movable capital (dividends incomes, board member appropriations from profits and interest incomes, including interest on bonds and treasury bills) at a flat rate of 10%. Next to the personal income tax, a built property tax hits rental revenues at the individual level at rates ranging from 4 to 14%.

The fiscal data provided by the Ministry of Finance are in the form of an unbalanced panel. Each observation corresponds to the annual declaration of a taxpayer and three sources of income are reported separately: business income, salaries and wages, and housing rental incomes (excluding revenues of people living in their own dwelling). For business income and wages, gross income (before any deduction and gross of expenses), taxable income (after deductions of charges and benefits) and the amount of tax paid are reported. For rental revenues, only the latter two variables are reported. The data is reliable for the top 1% of the adult population, although it covers a greater share of the adult population.⁶

Three major limitations should be stressed. First, the amounts of deductions, expenses and benefits are not reported. Therefore, I need to make assumptions to obtain the actual individual fiscal income (pre-tax, pre-deductions fiscal income but net of expenses). In

⁶The database covers up to 15% of adult individuals in some years. However, due to the schedular form of the tax, individuals in lower income groups, receiving low wages, are included in the database even if they do not belong to the top 1% income group.

my benchmark series, I assume that taxable income equals 80% of total fiscal income.⁷ Second, most capital incomes are not reported: imputed rental revenues of persons living in their own dwelling, incomes from movable capital (that is dividends and interest income), corporate profits made by individuals in limited partnerships (joint stock or limited liability companies) are also absent. Third and more generally fiscal data miss income which evades from taxation and income from the informal sector. The third step of the correction procedure, presented in section 2.3, partially accounts for the two last issues. Despite these limitation, the income reported for the top 1% in the micro-files is still substantially larger than in the survey data, and the inequality estimates at least give more reliable order of magnitude.

My benchmark correction is based upon the following assumption: the survey data are reliable below percentile $p_1 = 0.8$, the fiscal data are reliable above $p_2 = 0.99$, and I assume that the quantile ratio upgrade factor $f(p)$ rises piecewise-linearly from $f(p_1) = 1$ to the observed fiscal/survey ratio between p_1 and p_2 , $f(p_2)$, so as to generate a smooth and convex Pareto curve (Blanchet et al., 2017). I then apply generalized Pareto interpolation techniques to the corrected tabulations to obtain the full distribution of fiscal income among equal-split adults, by g-percentiles, between 2005 and 2014.⁸

2.3 Third step: correcting for missing capital incomes

Finally, I correct for tax-exempt (corporate retained earnings and imputed housing rental income) and non-reported capital incomes (dividends and interests). I proceed in two steps.

2.3.1 Estimating and reallocating the amount of income missing

A first step consists in estimating the total amount of tax-exempt and non-reported capital incomes (dividends and interests). National accounts are not disaggregated enough to estimate this missing amounts. I complement them with public finance reports to recover the missing amounts, by dividing the revenues collected from the different income

⁷Total taxable income is the sum of taxable business income, wages and housing rents. See Appendix B for robustness checks and variants on the income definition.

⁸I also provide several variants based upon different piecewise-linear profiles for the upgrade factor between $f(p_1)$ and $f(p_2)$. As shown in Appendix B., the variants have a relatively limited impact on the results. In section 3, I focus on the benchmark series.

sources by the corresponding tax rate in force in the legislation. I find that non-reported and tax-exempt capital incomes represent on average 20% of national income.⁹ Then, to estimate the final distribution of total personal income (y_p), the sum of fiscal income (y_f) and missing income (y_m), I first assume that y_m follows the same distribution as wealth (see section 2.3.2 below for the estimation of the wealth distribution). As for the correlation structure between y_f and y_m , I use the family of Gumbel copulas, with Gumbel parameter $\theta = 3$ (Piketty et al., 2017, and Novokmet et al., 2017).

2.3.2 Estimating wealth distributions

The third step of the correction process requires to estimate the wealth distribution in Lebanon. However, wealth data are scarcer than income data in the region. Only billionaires' lists, published by Forbes and the magazine Arabian Business, are available. To nevertheless take advantage of this information, I first compute the ratio of billionaires' wealth to national income. As displayed in Figure 3, billionaires' wealth represents 30% of total national income on average over 1990-2016, surpassing by far what we observe in other countries using the same data. The observation is the same between 1990 and 2005 or 2005 and 2016, suggesting that wealth is more concentrated in Lebanon and that this extreme concentration is stable over time. Then, I compute average standardized distributions of wealth for the US, France and China from WID.world series.¹⁰ Variations across countries and over time in these standardized wealth distributions mostly happen above $p_0=0.99$, that is, for the bottom 99% of the distribution, average wealth is relatively stable. Therefore, I take the same normalized distribution for Lebanon below $p_0=0.99$ as the average US-France-China normalized distribution, hereby assuming that wealth is at least as concentrated as what we observe in other regions of the world with available data. To estimate the average wealth, necessary to derive the final wealth distribution, we compute an annual average wealth income ratio over all countries available in WID.world, and we apply this average to each country average income. The difficult question is to know how to link the distribution from $p_0=0.99$ to billionaire level and also to make an assumption about the average number n of adults per billionaire family (sometime Forbes includes very large family groups in the same billionaire family; sometime it is just one

⁹See Appendix B for detailed computations.

¹⁰That is, I divide all thresholds and bracket averages for all 127 generalized percentiles by average wealth, and we compute the arithmetic average for the three countries.

individual or one married couple). We first estimate the 127 generalized percentile within the top 1% of the normalized distribution in order to reach billionaires' level.¹¹

2.3.3 Caveat on the wealth inequality estimates

Unfortunately, billionaires' lists are particularly fragile and volatile in Lebanon (only 7 billionaires are reported, and some years do not have data). Using this data source to identify a trend in wealth concentration is impossible and the estimates of wealth inequality are extremely limited. Large amounts of wealth may be missing due to a pervasive use of tax havens and offshore bank accounts, Lebanon being itself a tax haven, with a bank secrecy law since 1956. Nevertheless, the stable and high concentration revealed in the rich lists reflects something real about the Lebanese wealth distribution and the method may at least give a good first approximation of the concentration of wealth in the country. Additionally, the wealth based correction (step 3) has a smaller impact than the fiscal data correction (step 2), and therefore the assumptions made on wealth inequality have a limited impact on the final income distribution and on our main conclusions regarding income inequality in the region (see Figure 6).

3 The extreme concentration of income and wealth in Lebanon 2005-2014

3.1 Levels of income inequality

The main results of the paper are summarized in Figure 4. Income is extremely concentrated in Lebanon, with the richest 10 and 1% adults accounting for respectively 56 and 23% of total national income, on average throughout the period. After a slight decrease following the 2006 war, top income shares quickly recover to remain stable until 2014. In contrast, the bottom 50% of the Lebanese population is left with approximately half of what is accruing to the top 1%. Figure 5 gives a sense of the extent of the concentration: the top 0.1% of the adult population, that is approximately 3000 individuals receives approximately the same amount of national income as the bottom 50, that is 1,5

¹¹See online for variants with different assumptions on the billionaires' family size and the correction profiles. This methodology is also used for other Middle Eastern countries in Alvaredo, Assouad and Piketty (2017).

million individuals. Finally, the middle 40% of the Lebanese adult population receives one third of the total national income. My estimates are consistent with the high levels of poverty reported in El Laithy et al. (2008), although we do not use the same welfare concept and unit of observation. I find a higher Gini coefficient, mostly due to the fiscal correction (see Figure 6).¹²

3.2 The distribution of economic growth

Between 2005 and 2014, real national income increased steadily, with a cumulated growth rate of almost 50% (Figure 7). However, if we look at the per adult national income, it follows a bell-shaped curve, increasing between 2005 and 2010 and then decreasing due a sharp population growth of 50%, mostly following the major inflow of Syrian refugees. The variations in the demographic structure give first insights into the change in the income distribution. Despite the positive real growth rate, we observe a global impoverishment of the Lebanese population after 2011. The series computed in this paper allow me to go further and to determine which income groups did or did not benefit from growth. Figure 8 shows that the bottom 90% of the adult population experiences a negative growth, far below the average, while the top 10% enjoyed very large growth rates.¹³

In order to understand the driving forces behind these high growth rates at the top, I examine the respective role of business income, labor income and rental revenues using the fiscal micro-data. Figure 9 decomposes top groups by income categories for the years 2005 and 2014. Several conclusions can be made. First, the negative growth rate of the top 0.01% comes from a sharp decline in rental revenues over the period, which translated into an increase in the share of wages. A natural explanation for this is the major property destructions that happened during the Israeli war.¹⁴ However, as early as 2007, a massive reconstruction effort was made and demand on housing kept increasing while real-estate prices and rental income skyrocketed. The variation we observe at the very top may

¹²In the appendix, I also provide detailed robustness checks for the fiscal correction. In all variants, corrected inequality levels are substantially higher than raw survey levels, and stand relatively close in magnitude to the benchmark series (by international and historical standards).

¹³ Except for the top 0.001% (that is between 25 and 37 adults over the period), for which the rate becomes negative again.

¹⁴The Israeli war indeed damaged more than 210,000 housings and destroyed 25,000, leaving more than 300,000 people homeless (Verdeil, 2007).

simply reflect a change in tax evasion behaviors due to the political instability that began in 2005. In parallel, the computerization of taxation implemented in the 2000s by the Ministry of Finance and the fact that wages are taxed at source made taxation on labor income easier to collect.

3.3 International comparisons

As discussed in the introduction, it was impossible to compare Lebanon's level of income inequalities with other countries. Tables 1 and 2 present the income thresholds and averages within the different income groups, in 2016 Euro PPP in Lebanon and in other regions of the world. To be among the 1% richest Lebanese, one needs to make at least 123,651 € per year in 2016, for an average income of 335,930 €, levels comparable to Western Europe. The magnitude of concentration however increases drastically within top groups, with an average income for the top 0.1% of 1,593,622 €. To get a sense of the skewness of the Lebanese distribution, it is interesting to compare the average income within each group in Lebanon and in Western Europe. Until the top 1%, the average income is systematically smaller in Lebanon, representing 40% of the corresponding average in Western Europe for the bottom 50% and 90% for the top 1%. Within top groups, the ratio reverses to reach 140% within the top 0.01% and even 190% within the top 0.001%. In other world, in Lebanon the richest are as rich or richer than their counterparts in Western Europe, while the poorest are way poorer. The average income of individuals at the very top of the distribution in Lebanon is broadly comparable to average levels observed in Brazil or South Africa, other extremely unequal countries. As described in Assouad et al. (2018), these countries, and Lebanon, are characterized by a dual social structure without a broad "middle class" comparable in size to the one in high-income countries.

Figure 10 compares the top 10 and 1% income share in Lebanon with series for Brazil, China, France, Russia and the United States, computed following the same methodology. I also compare Lebanon with other developing countries with high levels of income inequality and similar per adult average income. The conclusion is clear: Lebanon has one of the highest records of income concentration in the world.

3.4 Wealth inequalities

Figure 11 reports statistics on the distribution of wealth for the 1990-2016 period, obtained using data from the annual Forbes and Arabian business rankings that cover the wealthiest Lebanese individuals.¹⁵ According to my benchmark estimates, wealth is on average extremely concentrated with the top 10 and 1% of the Lebanese adult population gathering almost 45 and 70% of total personal wealth respectively.¹⁶ These levels are substantially higher than in China and France and slightly higher than in Russia and the United States in the recent period (see Figure 12).

3.5 Interpreting the Lebanese evidence

The data do not allow for a detailed quantitative analysis of the determinants of income concentration in Lebanon. Based on the extensive existing political science literature on the topic, one can however identify four possible explanations for the high levels of inequality observed between 2005 and 2014. First, the combination of the rentier structure of the economy with the confessional system of governance enables sectarian elites to capture and redistribute most of the resources through communal clientelism (Corm, 2012, Traboulsi, 2014). This crony capitalism may create major socio-economic disparities. Second, Lebanon has constantly opted for laissez-faire economic policies since its independence in 1943, resulting in the absence of welfare state and large-scaled redistributive policies (Gaspard, 2004).¹⁷ The reconstruction period following the civil war was marked by a neoliberal policy shift close to the one observed in Western countries during the 1980s (Corm, 2012; Baumann, 2017). A commitment to minimal state intervention was reasserted in the 1989 Taif Agreement, while major tax breaks were undertaken.¹⁸ Since

¹⁵The only other existing estimates of wealth inequality in Lebanon are the one by Davies et al. (2010-2016), which also use rich list and Pareto interpolation techniques. Unfortunately, as emphasized in Novokmet et al. (2017), their estimation technique is not explicit (one cannot replicate their results, and there is no online code available).

¹⁶Given the uncertainty surrounding the use of billionaires data, I only present averaged statistics over the period as the trends may not be reliable. In any case, the wealth share stay extremely high throughout the period, with a minimum for of 35% and 67% for the top 1 and 10% of the adult population (see Appendix A).

¹⁷ The only attempt to build strong public institutions and to create a welfare state occurred during Fouad Chehab's presidency between 1958 and 1964, contrasting with the liberal tendency prevailing since 1943.

¹⁸Top marginal rates on corporate profits and on labor incomes were decreased to 10%. Incomes from movable capital were taxed only at 5%, 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.

then, social welfare and state reforms have constantly been relegated to the background, while the Hezbollah ensures basic solidarity and redistributive functions and became a large clientelist network if not a state within the state (Daher, 2014; Cammett 2015).

Third, the country underwent major economic crises in the 1990s, with waves of land and financial speculations, resulting in (1) several periods of inflation and hyperinflation that most probably eroded low incomes, not fully indexed (see Figure 13) (2) a macroeconomic context of high real interest rate coupled with a relatively slow real growth of national income per capita that was mostly beneficial to bankers and depositors (World Bank, 2016).¹⁹ Analyses of the distributional effect of the reconstruction policies and the macroeconomic climate between 1990 and 2005 are proposed in Leenders (2004), Corm (2012) and Baumann (2017). The period of inflation observed in 2005-2009 has probably eroded low self-employed and labor income, not fully indexed. I however certainly underestimate this phenomenon as the bottom of the distribution is measured with the 2007 survey (whereas inflation is at its highest in 2008 and 2009 in the period of study) and a great part of low and non-indexed incomes comes from the informal sector that the fiscal data do not capture. Fourth, immigration movements play an important role in the inequality dynamics in Lebanon. Lebanon has recently welcomed more than one million Syrian refugees, representing 30% of the total population, adding to the 450,000 Palestinian refugees already present.²⁰ As displayed in Figure 8, the increase in the cumulative population growth after 2011 leads to a decrease of per adult national income that increased inequality. I however underestimate this effect as the survey data stop in 2007, so that the refugees' incomes are not taken into account within the bottom of the distribution.

4 Conclusion

In this paper, I combine national accounts, survey, fiscal data and wealth ranking to estimate the national income distribution in Lebanon between 2005-2014. To the best of my knowledge, this paper is the first to use personal income tax records to study income inequality in a Middle Eastern country. I find that income and wealth are extremely con-

¹⁹ According to a UN report, 0.6% of the bank accounts held 40% of total deposits, which kept increasing during the period (UNDP, 2002, p. 77).

²⁰<https://www.unrwa.org/where-we-work/lebanon>

concentrated and that the richest Lebanese caught the bulk of the national income growth under the period of study. These results put in perspective the so-called Lebanese economic miracle.

The main contribution of this study is to review available data sources on income and wealth and to combine them in a transparent manner to produce novel estimates of income inequality in Lebanon. This study is however limited given the data at hand. It should therefore be seen as a first step to build a consolidated view on income inequality in Lebanon and in the region, provided that data accessibility increases in the future. For the moment, the lack of exhaustive and reliable information on income and wealth impedes any in-depth analysis of inequality dynamics. In particular, it is at this stage difficult to establish whether the extreme concentration of income observed in Lebanon is structural and due the long-lasting specificities of its political economy and/or whether it is more circumstantial, following economic crises and the policies undertaken at the end of the civil war.

These alarming results have several policy implications. They point toward the needs to develop efficient redistributive mechanisms, beginning with the establishment of a general income tax. The current fiscal system, relying mostly on indirect taxation and on a schedular income tax, does little to reduce inequality. Additionally, the different top marginal tax rates are low by historical and international standards. Finally, increasing transparency on income and wealth data is an important prerequisite to make efficient policy recommendations, to analyze the driving forces behind such an extreme concentration and to ensure any democratic accountability.

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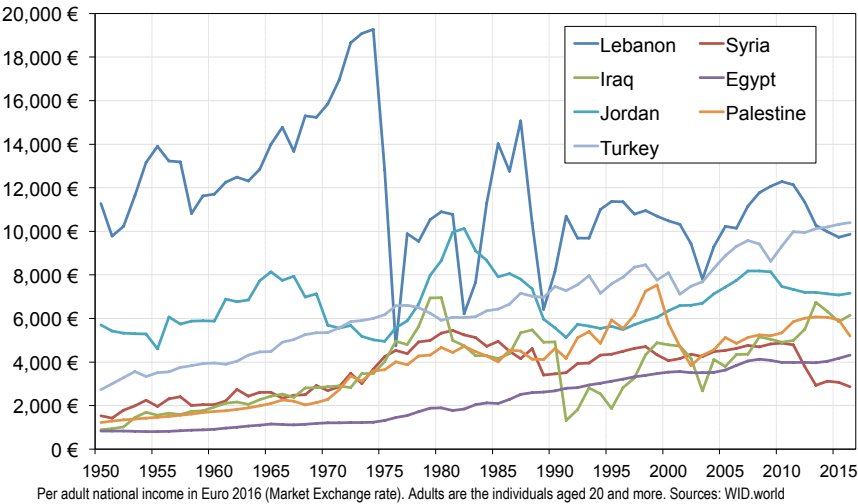
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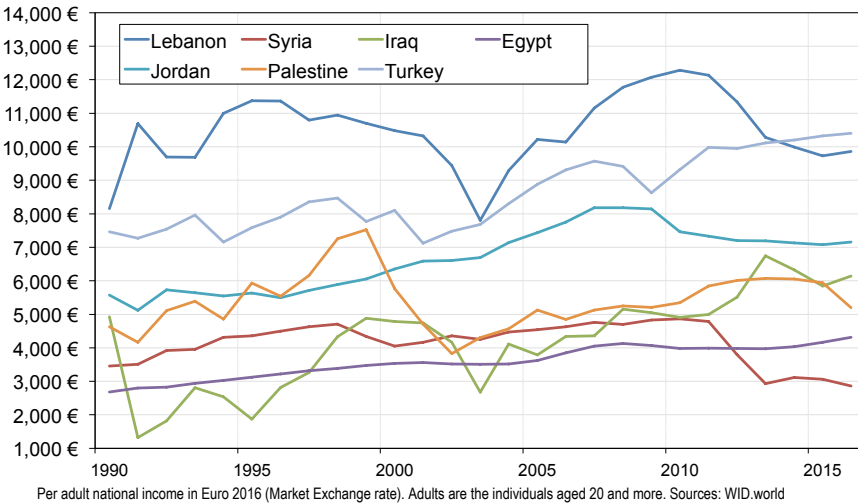
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Figure 1: Per adult national income in selected countries (€2016 MER)



(a) 1950-2016



(b) 1990-2016

Figure 2: Per adult national income in selected countries (€2016 PPP) 1990-2016

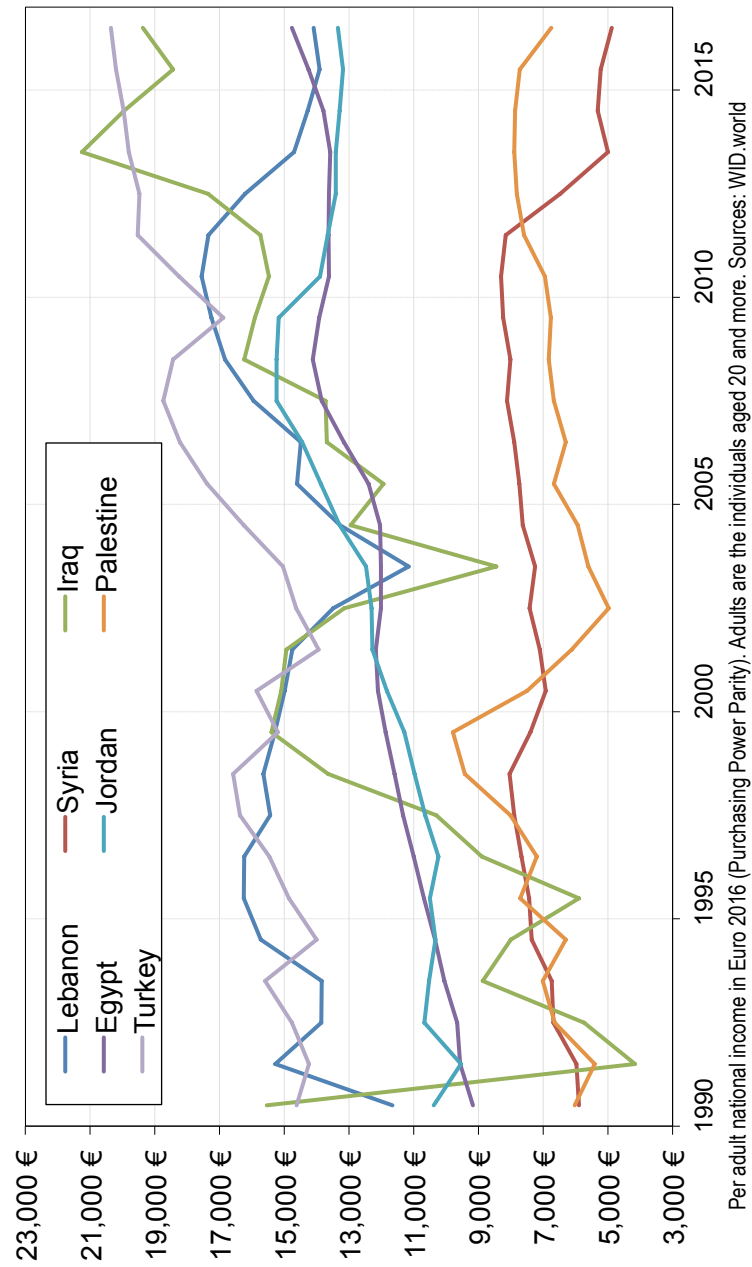
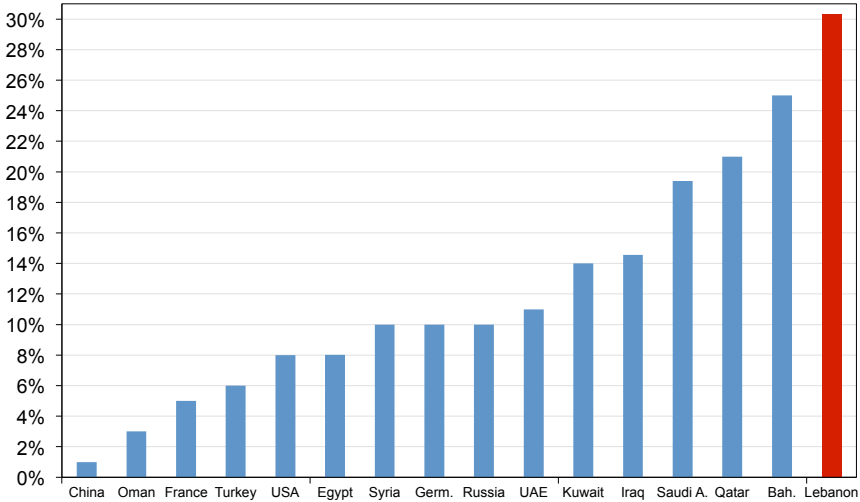
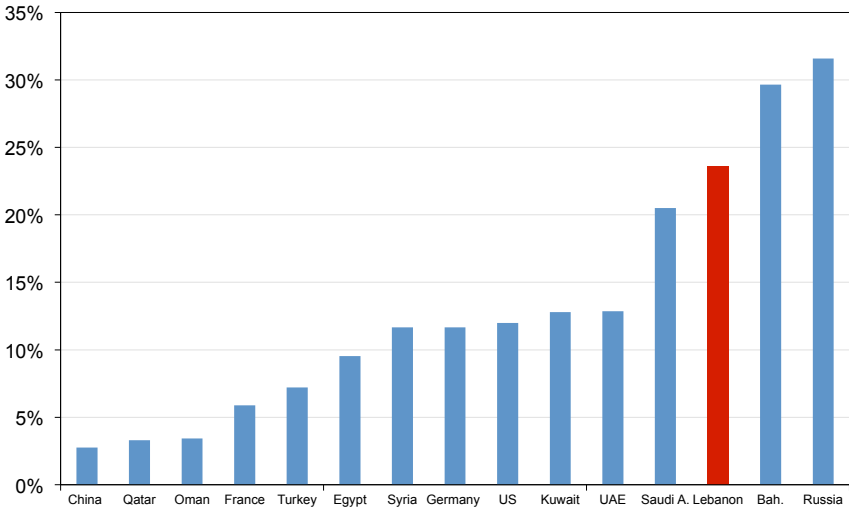


Figure 3: Billionaires' wealth as Share of National Income



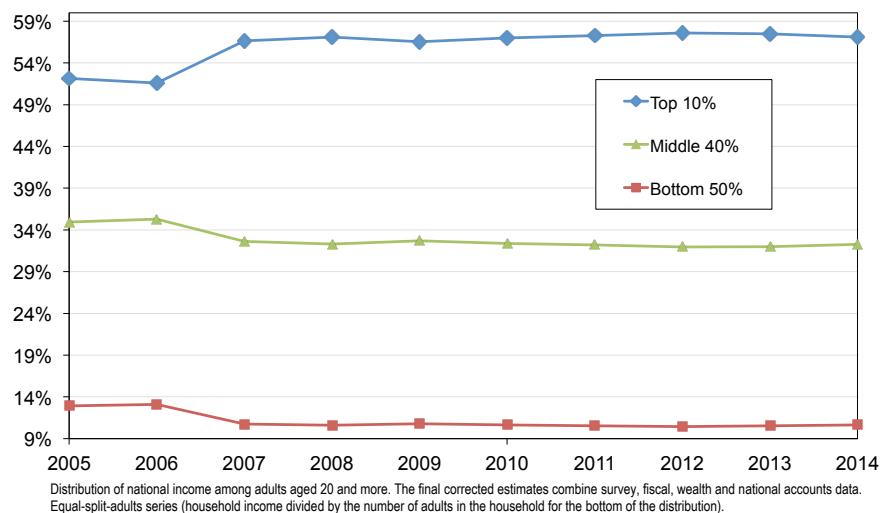
(a) Average over 1990-2016 in selected countries



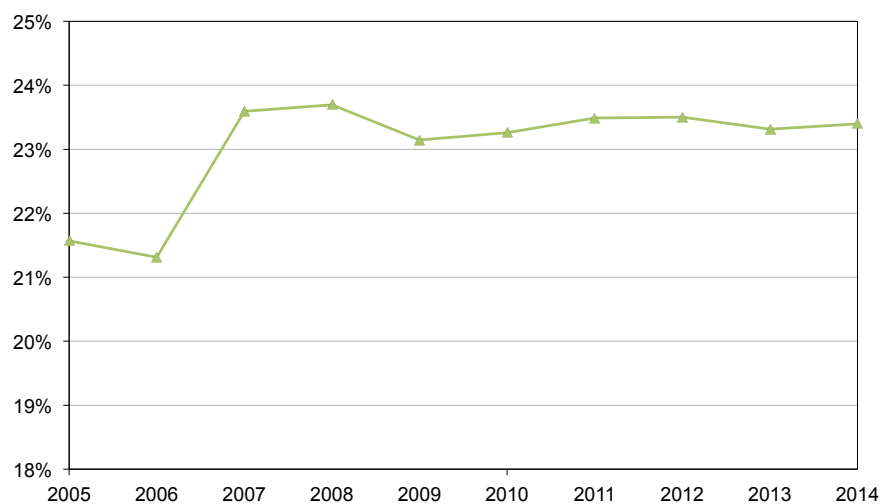
(b) Average over 2005-2016 in selected countries

Total billionaire wealth as a share of total national income (measured at market exchange rates), average over for 1990-2016 (a) and for 2005-2016 (b). For 1990-2005 Lebanon is ranked second below Qatar, with an average of 33%. Author's computation using rich lists from Forbes and Arabian Business magazines, for Middle Eastern countries.

Figure 4: Income Shares in Lebanon, 2005-2014



(a) Top 10%, Middle 40% and Bottom 50% income shares



(b) Top 1% income share

Distribution of national income among adults aged 20 and more. The final corrected estimates combine survey, fiscal, wealth and national accounts data. Equal-split-adults series (household income divided by the number of adults in the household for the bottom of the distribution).

Figure 5: Income Shares in Lebanon, 2005-2014: Top 0.1% vs. Bottom 50%

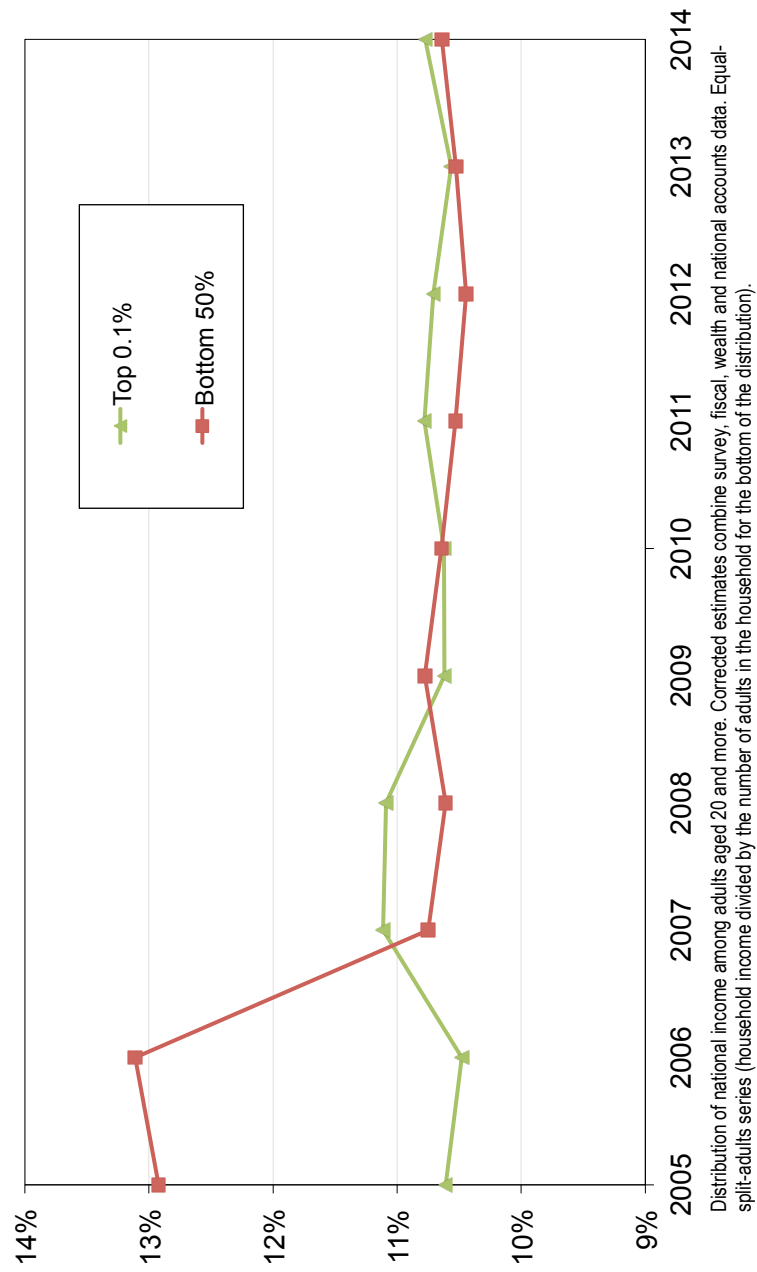
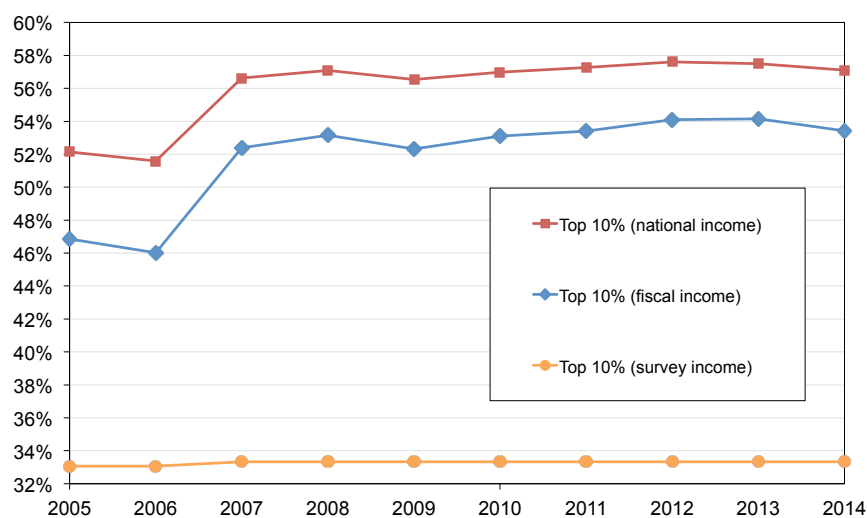
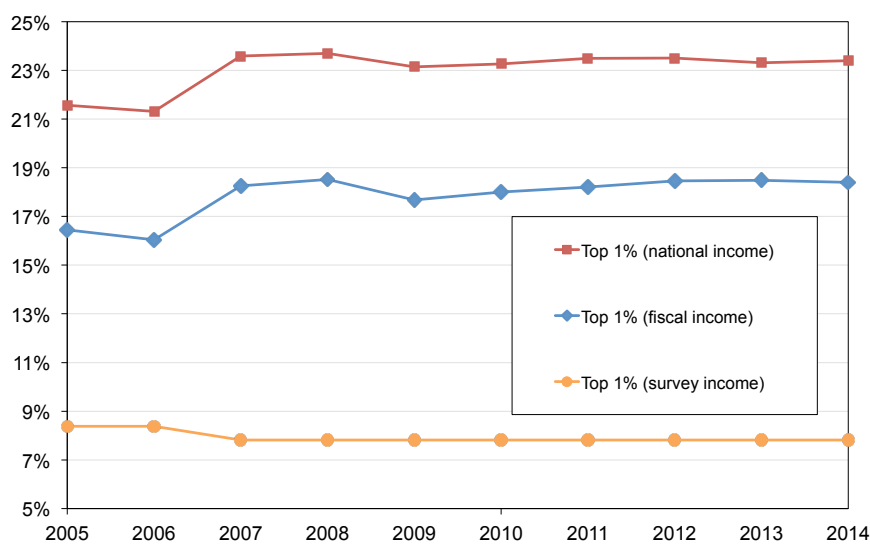


Figure 6: Decomposing top income shares in Lebanon, 2005-2014



(a) Top 10% income share



(b) Top 1% income share

Distribution of income among equals-split adults, aged 20 and more (household income divided by the number of adults in the household for the bottom of the distribution). National income estimates combine survey, fiscal, wealth and national accounts data, normalized to the total average income per adult. Fiscal income estimates combine survey and income tax data (but do not use wealth data to allocate tax-exempt capital income). Survey income series solely use self-reported survey data.

Figure 7: Population vs. income cumulative growth since 2005

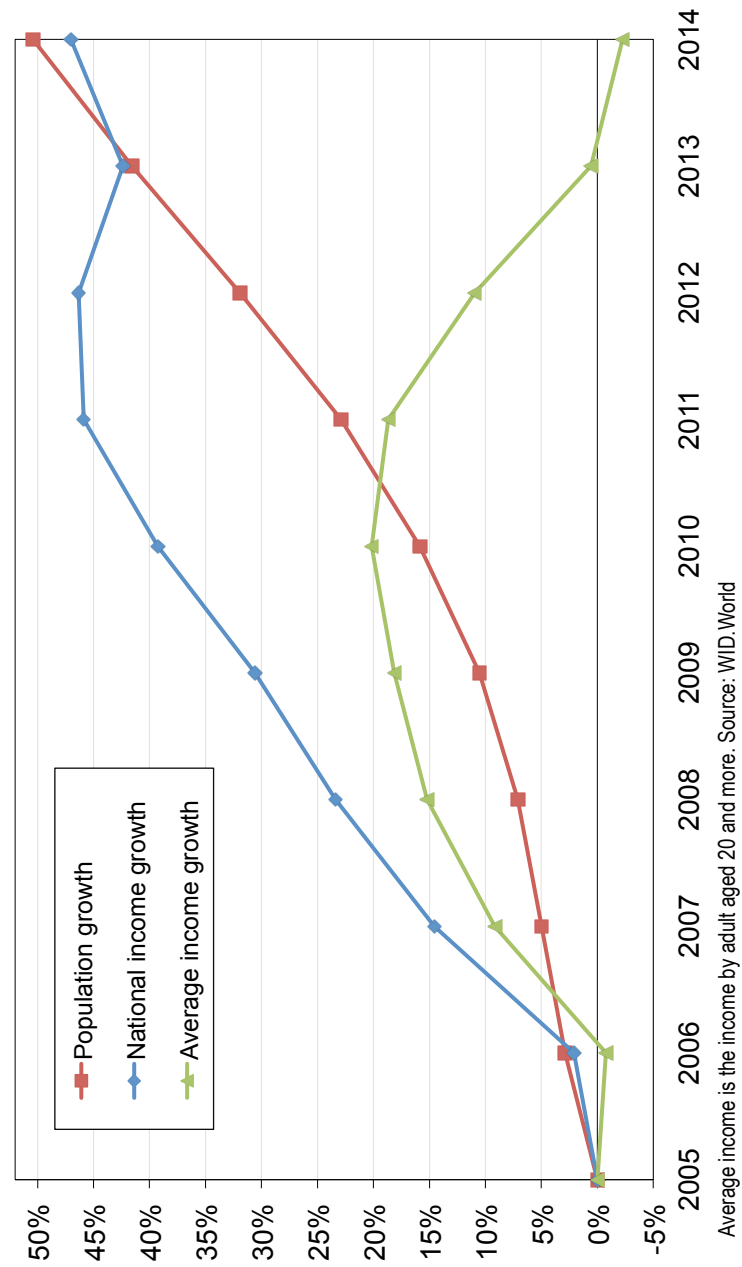
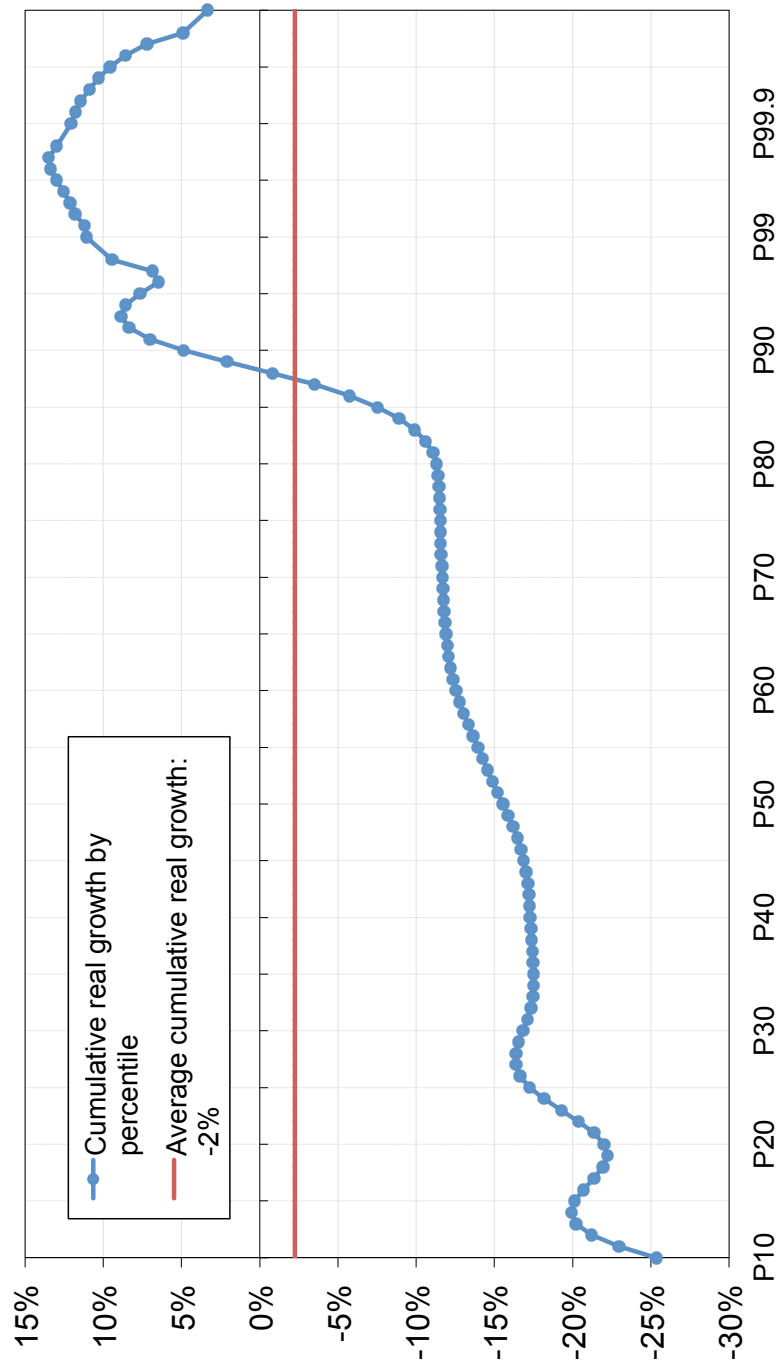


Figure 8: Cumulative real growth by %ile, Lebanon 2005-2014



Distribution of national income among equal-split adults aged 20 and more (household income divided by the number of adults in the household for the bottom of the distribution). The final corrected estimates combine survey, fiscal, wealth and national accounts data. Equal-split-adults series

Table 1: Income thresholds and income shares in Lebanon, 2016

Income groups	Number of adults	Income thresholds	Average income	Income share
Full population	3,717,891	0 €	14,356 €	100.0%
Bottom 50%	1,858,946	0 €	3,055 €	10.6%
Middle 40%	1,487,156	5,977 €	11,577 €	32.3%
Top 10%	371,789	29,373 €	81,978 €	57.1%
<i>incl. Top 1%</i>	37,179	123,651 €	335,930 €	23.4%
<i>incl. Top 0.1%</i>	3,718	453,700 €	1,593,622 €	11.1%
<i>incl. Top 0.01%</i>	372	2,224,880 €	8,593,634 €	6.0%
<i>incl. Top 0.001%</i>	37	11,782,820 €	47,365,937 €	3.3%

Notes: Statistics on the distribution of income expressed in PPP €2016. Adult individual aged 20 and more; Equal-split assumption among adult members of a household. In 2016, 1 euro = 1641 LBP (market exchange rate) or 172.7 pound (PPP). Income corresponds to pre-tax national income. Fractiles are defined relative to the total number of adult individuals in the population. Corrected estimates (combining survey, fiscal, wealth and national accounts data), from 2014 adjusted for the price change between 2014-2016 (shares are not affected).

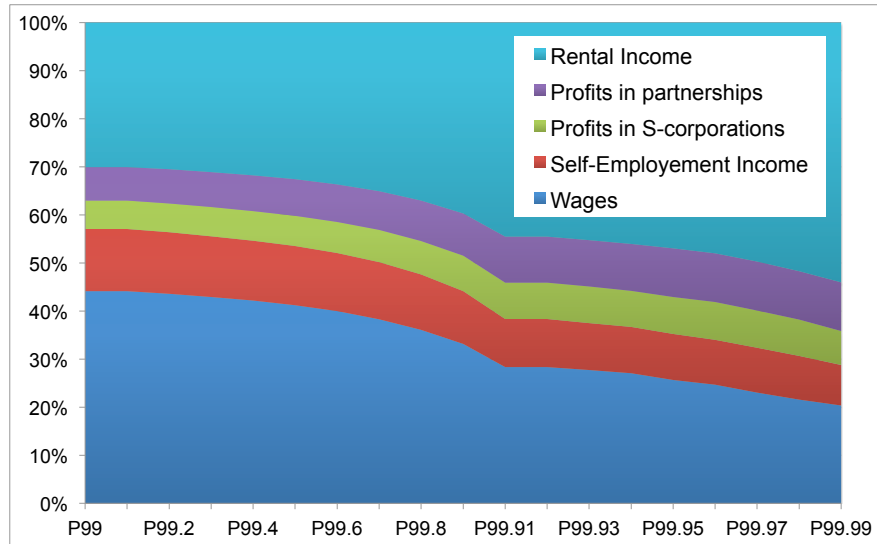
Table 2: Average incomes in Western Europe, USA, Brazil, India and South Africa: 2016 Euros (PPP)

Income groups	USA	Western Europe	Brazil	South Africa	India
Full population	61,795€	34,214€	9,115€	8,439€	4,391€
Bottom 50%	15,572€	14,308€	2,233€	848€	1,345€
Middle 40 %	62,387€	35,916€	7,387€	6,654€	3,343€
Top 10%	290,542€	126,938€	50,432€	53,538€	23,808€
<i>incl. Top 1%</i>	1,248,259€	417,501€	253,759€	154,877€	95,388€
<i>incl. Top 0.1%</i>	5,759,294€	1,553,248€	1,313,729€	486,861€	378,319€
<i>incl. Top 0.01%</i>	26,899,363€	6,143,396€	6,817,909€	1,457,794€	1,684,895€
<i>incl. Top 0.001%</i>	117,410,496€	24,494,358€	35,399,859€	4,286,839€	17,278,335€

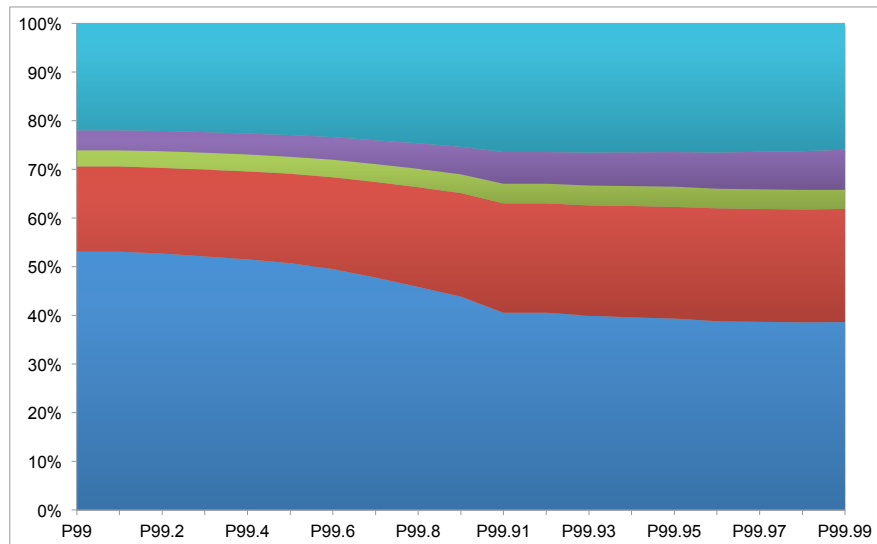
Notes: Statistics on the distribution of income expressed in PPP €2016. Adult individual aged 20 and more; income of married couples is split into two. Income corresponds to pre-tax national income. Fractiles are defined relative to the total number of adult individuals in the population. Corrected estimates (combining survey, fiscal, wealth and national accounts data).

Source: Assouad et al. (2018)

Figure 9: Decomposition of top income by income categories: 2005, 2014



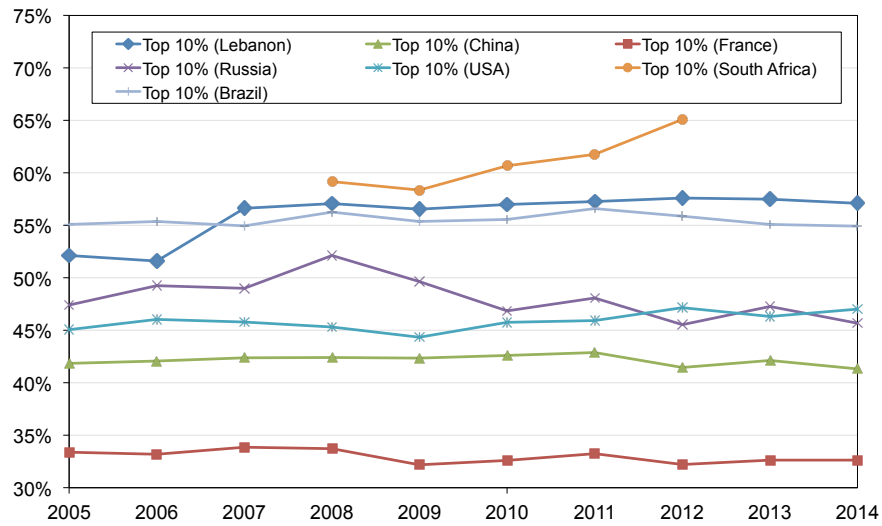
(a) 2005



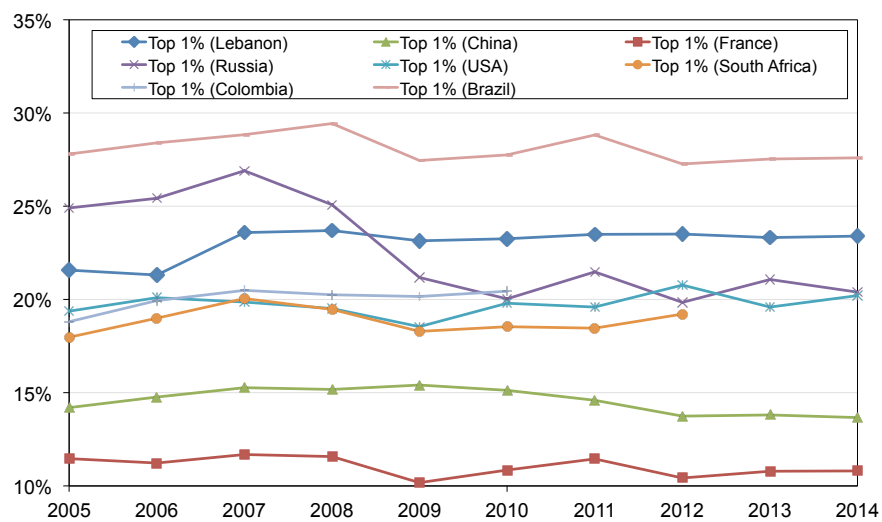
(b) 2014

Source: Author's computation using the fiscal micro files.

Figure 10: Top income shares: Lebanon vs. Selected countries, 2005-2014



(a) Top 10% income share



(b) Top 1% income share

Distribution of pretax national income (before taxes and transfers, except pensions and unempl. insurance) among equal-split adults (income of married couples divided by two) for all countries except South Africa. For South Africa, distribution of fiscal income. Sources for Brazil, China, Colombia, France, Russia, South Africa and USA: WID.world.

Figure 11: Wealth share in Lebanon: average over 1990-2016

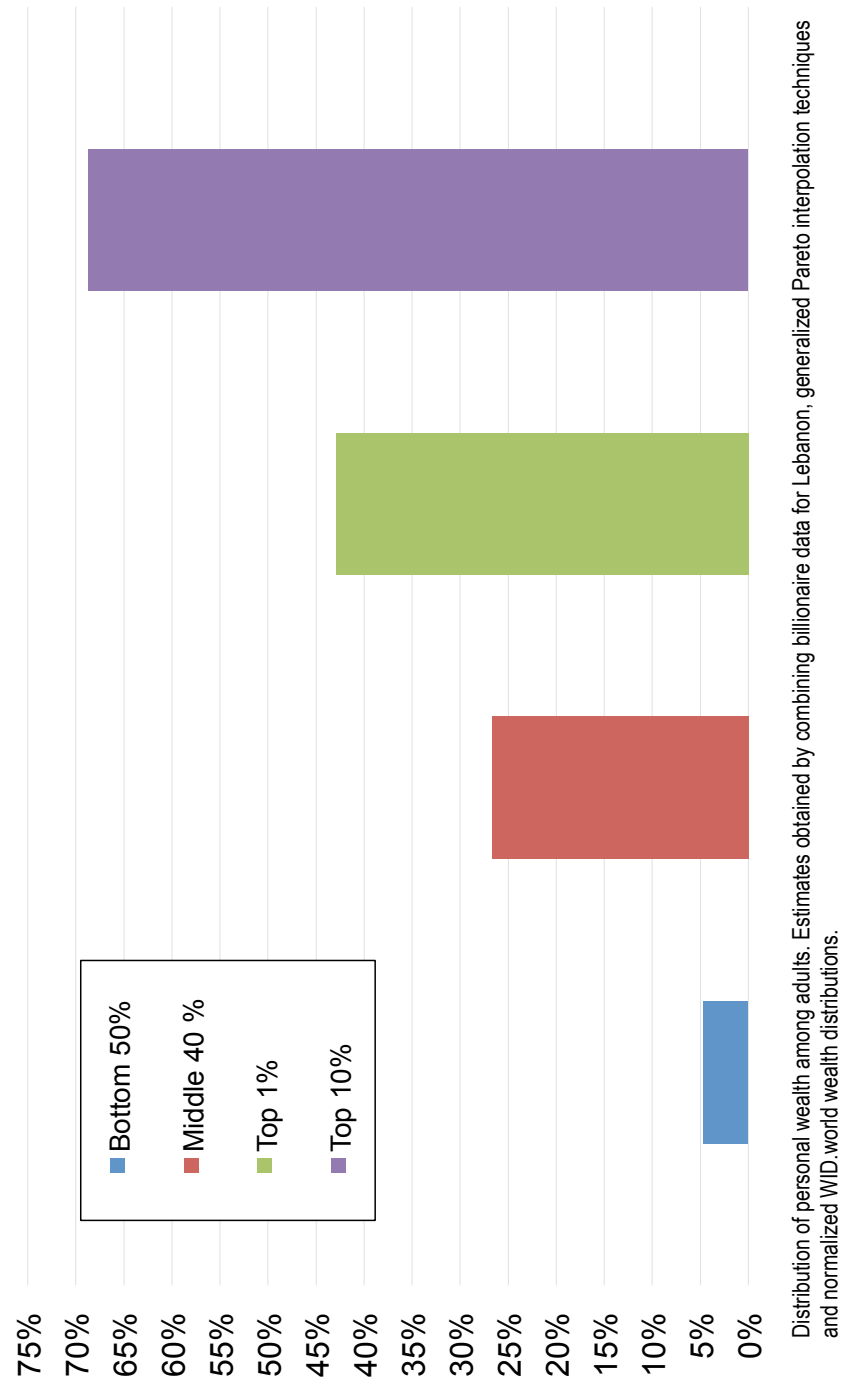
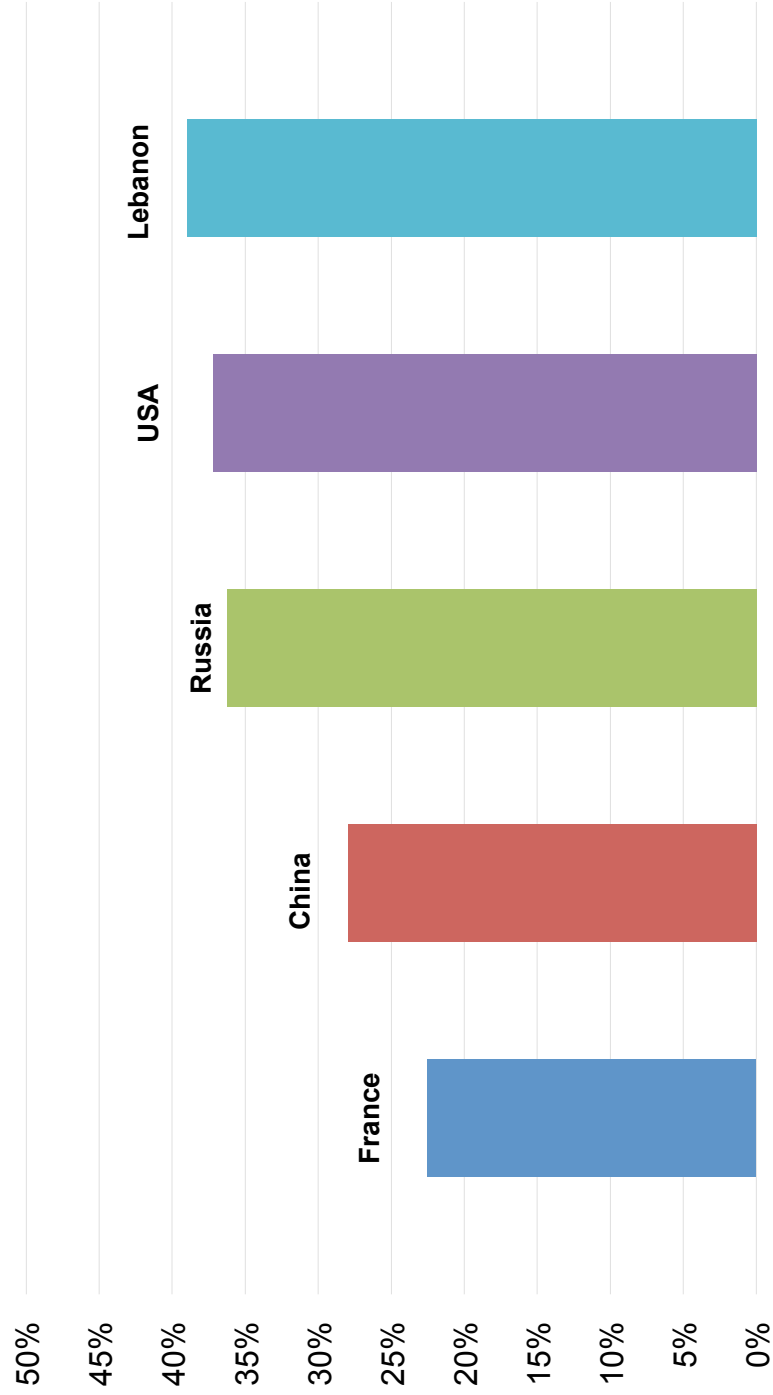
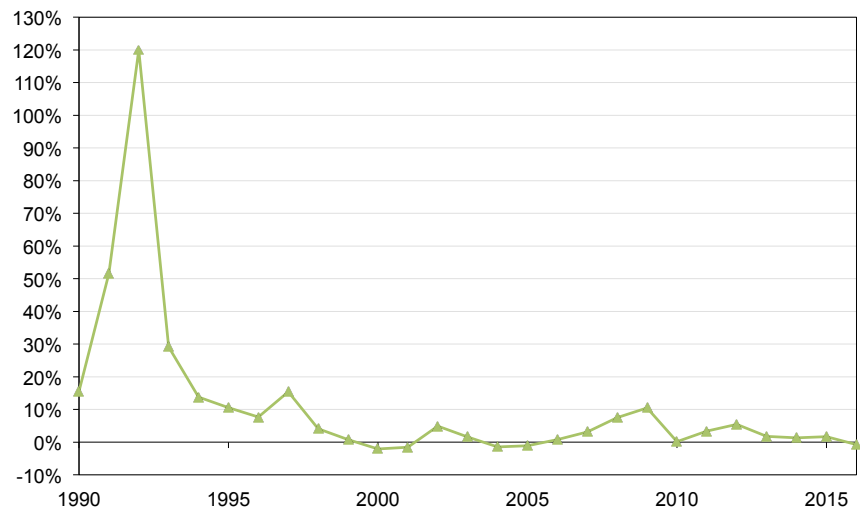


Figure 12: Top 1% wealth share: Lebanon vs. Selected countries, Average over 2005-2014



Distribution of personal wealth among adults aged 20 and more. Estimates obtained by combining billionaire data for Lebanon, generalized Pareto interpolation techniques and normalized WID.world wealth distributions. Sources for other countries: WID.world

Figure 13: Evolution of the inflation rate in Lebanon



(a) 1990-2016



(b) 2005-2016

GDP deflator (annual %). Source: World Bank Data