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Exploring Lebanon's Growth Prospects

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Abstract

This paper attempts to identify Lebanon's greatest constraints to economic growth, following a growth diagnosis approach. It concludes that fiscal imbalances and barriers to entry are most binding on long-term growth. Macroeconomic imbalances and related perceived risks affect the nature of investment decisions in Lebanon, in favor of liquid instruments rather than longer-term productive investments. Further, many barriers to entry discourage agents from investing in a number of markets: legal impediments to competition, corruption, and a set of fiscal incentives favoring the allocation of resources to non-tradable sectors, where potential demand and investment opportunities are scarcer. In turn, using a steady-state computable general equilibrium model, the paper assesses the long-term growth impact of a selected set of policy reforms envisaged to lift such constraints. Results suggest that 1 to 2 percentage points of additional GDP growth per year could be gained through public expenditure reform, greater domestic competition, and tax harmonization.

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Preface

This paper, which explores Lebanon's long term growth prospects, was written and delivered to the Government before the hostilities of July-August 2006 that inflicted severe damages to the Lebanese economy. Approximately 10 percent of GDP worth of public and private property was destroyed, and economic activity slowed down, tourism and trade in particular. As such, some of the views developed in this paper may not reflect anymore the most pressing priorities to reactivate and foster growth in the short run. Indeed, the provision of public infrastructure was not considered before the hostilities as a major binding constraint to growth.

Yet, GDP growth was already at that time too slow to provide enough job opportunities to the youth, or to significantly contribute to a reversal in the worrying public debt dynamics. Lebanon was benefiting from a very favorable external environment, but was not investing enough to protect its economy against a turnaround in the business cycle, inflation pressures or confidence shocks. Today, the supply side constraints which were limiting growth still remain, and have been for some of them aggravated by the conflict - fiscal imbalances in particular. Active policies to lift these constraints definitely need to be factored in any reconstruction strategy aimed at improving Lebanon's long term growth potential.

Reviewing the various possible constraints, the paper suggests that fiscal imbalances and barriers to entry are most binding on long term growth. In Lebanon, risks of expropriation - be it of macro or micro economic nature - tend to discourage productive investments. Macroeconomic imbalances and related perceived risks affect the nature of investment decisions in Lebanon, in favor of liquid instruments rather than longer-term productive investments. Besides, many barriers to entry *de facto* discourage agents from investing on a number of markets: legal impediments to competition, corruption, and a set of fiscal incentives favoring the allocation of resources to non-tradable sectors, where potential demand and investment opportunities are scarcer. In turn, the lack of investment opportunities and competition tend to magnify the impact of foreign capital inflows on the real exchange rate, thereby reducing Lebanon's external competitiveness and potential external outlets.

Hence, beyond basic reconstruction needs, a pro-growth strategy could be articulated around the axes of fiscal stabilization and reduced barriers to investment. Fiscal stabilization, in order to prevent growth from turning strongly negative in the event of a confidence crisis, is a must, whatever its direct impact on investment behaviors. If synonymous with structural reforms in the pension, civil service and energy sectors, fiscal stabilization could even bring significant growth rewards, which we estimate at 0.5 percentage points of additional real GDP growth per year, using a steady state General Equilibrium Model calibrated to the Lebanese economy. The impact of fiscal stabilization would be greatly magnified if targeted efforts were undertaken to promote competition and lower anti-export biases. Our calculations conservatively suggest that this second set of reforms could add another point of real GDP growth per year, lifting it from 3 percent on average currently to 4-5 percent after the reforms. Increased competition and exports would in particular have a significant impact on job creation, broadly eliminating the need for economic emigration in the medium run.

Such a proposal compares well with Government's pre and post-hostilities intentions[1]. In particular, measures aimed at lowering costs to start and close a business, the enforcement of contracts, and the enactment of a competition law will favor competition in domestic markets. The privatization of state-owned enterprises, if accompanied by liberalization of the markets in which these enterprises operate, will also foster domestic competition. The envisaged fiscal adjustment, coupled with reduction in fiduciary risks and the implementation of anti-corruption programs will lower macro-economic and micro-economic risks of expropriation, thus encouraging long-term investments. In contrast, our

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[1] See Lebanese Republic (2007), Recovery, Reconstruction and Reform, January, Beirut. In its prelude, this document acknowledges that the core elements of the reform program prepared before the hostilities of July 2006 have not changed.

proposed strategy puts less emphasis on the development of capital markets and the provision of support to SMEs as envisaged by the Government. The development of (debt and equity) capital markets, while important for public debt management and pension reforms, is unlikely to bring large growth rewards in the absence of higher demand for financing. The same logic applies to providing financial support for SMEs, which have not been fully benefiting from existing financing schemes and declining interest rates. The availability of finance is not the binding constraint to their growth.

Growth will eventually come from Lebanon's ability to gain export market shares. As such, it is crucial to eliminate the large anti-export biases that remain. In spite of a number of structural impediments, exports of goods and services have been growing faster than any other sector in Lebanon since 1993, but their impact on aggregate growth is still limited by their small size in GDP. Two sets of actions could be considered more prominently in the Government's growth strategy: the rapid liberalization of the communication sector, to improve the tradability of export services; and the elimination of VAT exemptions which encourage the development of non-tradable activities and protect a number of import-competing sectors. The potential response of exports to such reforms is believed to be large, especially in the current regional environment.

Exploring Lebanon's Growth Prospects

1.   **Lebanon's recent economic history is characterized by moderate and volatile GDP growth.** Lebanon's estimated real GDP grew on average at the annual rate of 3.1 percent between 1993 and 2005. Following the post-war reconstruction boom (1993-1996), the Lebanese economy has progressively fallen into a slow growth trap, whereas declining investment reflects lack of profitable business opportunities and weak external competitiveness. In recent years (2001-2004), economic activity rebounded, pulled by external factors, growing oil prices notably, which favored demand for Lebanon's goods and services, transfers, and capital inflows from Gulf countries. But the induced resumption in domestic absorption and exports was only moderately accompanied by greater investments, and consequently, Lebanon's growth potential (i.e., the long-term growth trend determined by supply capacities, once controlled for shorter term demand variations) remained barely unchanged, at about 3 percent in real terms. In 2005, growth receded with political events, illustrating Lebanon's great vulnerability to confidence shocks.

2.   **For job creation and fiscal sustainability, Lebanon's growth needs to get accelerated on a sustainable basis.** Current growth trends and derived job opportunities do not meet Lebanese youth's expectations. In the face of it, many new entrants find no alternative but to eventually emigrate or become inactive[2]. Consequently, Lebanon's active population is stagnating, its human capital progressively eroding and its resident population ageing. To reverse such worrying trends, not only the number of jobs created every year should increase, but their quality as well. Demand for skilled labor remains indeed structurally much below its supply, given the very high level of education expenditures in Lebanon.

The current macro-economic situation also imperatively calls for all possible actions to foster growth. The unsustainable public debt dynamics (see Box 1) and the related high degree of vulnerabilities unavoidably require a strong and sustained fiscal adjustment[3], whose probability of success decisively depends on growth. Indeed, with the envisaged fiscal and privatization reforms, any additional point of real GDP per year growth would translate into a debt to GDP ratio 10 percentage points lower by 2011.[4] Yet, fiscal stabilization could restrain aggregate demand, unless the supply response to improving macro-economic conditions is quick and large.[5] This, in turn, calls for lifting potential impediments to private investment, which can schematically fall under three categories: poor access to investment finance, weak aggregate returns to investment, or low private appropriation of returns.

3.   **There is a need to improve our understanding of Lebanon's growth determinants and select the most effective policies to foster it.** In recent years, policy makers' attention was mostly focused on shorter-term macro-economic and financial issues linked to the debt dynamics. But as the Government of Lebanon increasingly recognizes the importance of addressing economic imbalances through deep structural reforms, the need to systematically review the determinants of growth (or lack of) and possible actions to foster it becomes more imperative.

4.   **In light of Lebanon's limited structural reform capacity, the main objective of this paper is to identify a selective set of concrete reforms which would lift the most binding constraints to growth.** Following Haussman et al. (2004), the notion that across-the-board reform

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[2] According to the recent living conditions survey (CAS, 2005), the labor force participation rate, or equivalently the share of the population aged 15-64 working or actively looking for a job stood at 45 percent in 2004.

[3] This issue was discussed at length in a recent Public Expenditure Review (World Bank, 2005a).

[4] Source: Authors' calculations based on IMF (2006) adjustment scenario. It is assumed that a 1 percentage point increase in real GDP growth translates into a 1.5 percentage point increase in nominal GDP growth, per trends observed over the period 1997-2005.

[5] See World Bank (2004), for a detailed discussion of the potential impact of fiscal adjustment on growth in Lebanon. The main argument developed in this note is that the likely negative impact of fiscal contraction on economic activity could be significantly attenuated if policies are perceived as credible to restore fiscal sustainability, which in turn not only depends on the magnitude of the adjustment, but also on its quality.

packages are poorly effective to accelerate growth is gaining support among development practitioners. Providing governments with a comprehensive list of desirable reforms might prove seldom helpful in the face of their limited implementation capacities and political capital. In contrast, a growth strategy concentrating all efforts on a few areas is probably more effective, and appears particularly attractive and relevant to the Lebanon case. Indeed, as underlined in the recently endorsed Country Assistance Strategy (World Bank, 2005b), Lebanon's institutional ability to undertake structural reforms is weak. This inability takes its roots in the very nature of Lebanese political institutions, based on a confessional system which grants the various sects with veto power on important decisions. Following the civil war (1975-1990), this system proved to be effective to maintain peace, but also probably led to some paralysis in public institutions and decision making, at the expense of social and economic development. Hence the crucial need to select the very few measures that would have the largest marginal impact on growth.

Box 1. Lebanon's Debt

By end-2005, Lebanon's public debt stood at US$38.5 billion (up from US$15.6 billion in 1997), or approximately 173 percent of GDP, the highest ratio in the world. In 2005 the debt service stood at 10.6 percent of GDP, down from 16-17 percent in the period 2000-2003, thanks to the major debt restructuring efforts undertaken in 2003 following the Paris II donors' conference. The vast majority of the debt is held by private investors – by Lebanese commercial banks in particular – which are highly exposed on the sovereign risk (more than half of their assets are in public bonds or at the Central Bank). Half of the debt is denominated in foreign currencies, mostly in U.S. Dollars. Debt denominated in local currency has an average maturity of 1.6 years, against 5.6 years for debt denominated in foreign currency. Yet maturities are not evenly distributed, with 75 percent of the current debt to mature over the period 2006-2009, including 50 percent over its first two years.

Sustainability analysis suggests that the primary surplus, at less than 2 percent of GDP in 2005, would need to increase rapidly to 6-7 percent to stabilize the debt to GDP ratio. In the absence of fiscal and structural reform measures, World Bank projections suggest that the debt to GDP ratio would start to rise again, placing Lebanon in a situation of greater vulnerability with dampened growth. In contrast, measures that would result in a significant rise in the primary surplus, coupled with the privatization of some public assets, would lower the debt to GDP ratio. The magnitude of the decline in the debt to GDP ratio would then depend to a large extent on donors and banks' debt restructuring contributions, as well as on the supply response to improved macro-economic conditions. A very optimistic scenario would foresee the debt to GDP ratio going down to 110-120 percent by 2010; a less optimistic one to 140-150 percent

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Lebanon's Growth Patterns (1993-2005)

5.   Data on Lebanon's economic activity is scarce. National accounts series have recently been estimated and validated by the Government of Lebanon for the period 1997-2002 (Ministry of Economy and Trade, MOET, 2005), based on a very limited number of surveys.[6] Their authors have extended the computation of these accounts for the years 2003 and 2004, but this exercise has not yet been made official (although adopted by the MOF). This effort followed earlier ones exerted by the Central Administration of Statistics (CAS, 1997) to establish economic accounts for the period 1994-1995.[7] In parallel, the Central Bank of Lebanon has been publishing since 1993 on a monthly basis a coincident indicator of economic activity, based on a linear combination of indirect indicators.[8] The latter, along with CAS accounts 1994-1995 and some partial information on fiscal accounts, financial developments and merchandise trade have constituted the statistical base on which we relied to estimate GDP and its components for the period 1993-1996. Indirect indicators of economic activity were also used to estimate national accounts for the year 2005. Annex 2 reports these estimates.

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[6] In 2005, Lebanon ranked 103rd out of the 143 countries listed by the World Bank in terms of statistical capacity (statistical practice, data collection and data availability).
[7] Preliminary accounts for 1996 were also produced by the CAS, but were never published.
[8] These indirect indicators are: imports of petroleum, electricity production, value of compensated banks' checks deflated by the consumer price index, cement deliveries, number of foreign passengers, sum of imports and exports deflated by the consumer price index, and money supply (M3) deflated by the consumer price index.

Economic data for the period 1976-1992 (the civil war) do not exist. Population data are also lacking, in the absence of any population census since 1932. Most recent surveys estimate Lebanon's population at approximately 3.95 million (including 210,000 Palestinian refugees). Using age pyramids, it is also estimated that Lebanon's resident population grows naturally at a pace below 1 percent per year, before emigration.

6.   **Estimated Real GDP grew on average at the annual rate of 3.1 percent over the period 1993-2005**[9] (see Table 1 below), and at the annual rate of 2.9 percent since 1997 (a period for which data are probably more reliable). Over the period 1993-2005, for which both series are available, real GDP and the coincident indicator series exhibit close but not similar annual rates of growth, 3.1 and 3.7 percent respectively.[10] Compensated checks deflated with the CPI, which, under the quantitative theory of money, proxy real economic output, grew by 1.3 percent annually over the period 1993-2005.

Table 1. Real GDP Components' Annual Growth Rates, 1993-2005

Period	1993-2005	1993-1997	1997-2001	2001-2005
Private consumption	1.3%	0.0%	1.3%	3.6%
Public consumption	4.6%	11.1%	3.9%	0.5%
Gross fixed investment	-0.7%	6.5%	-5.6%	2.6%
Gross fixed investment, private	0.0%	3.5%	-4.7%	4.7%
Gross fixed investment, public	-2.8%	20.3%	-8.4%	-7.4%
Exports of goods and services	11.7%	22.4%	6.2%	9.7%
Imports of goods and services	-0.1%	-0.2%	0.6%	2.8%
Gross domestic product	3.1%	5.1%	1.5%	4.0%
Gross output	3.3%	5.8%	0.7%	4.5%
Domestic absorption	2.0%	3.8%	0.3%	3.6%
Domestic production for the domestic market	2.6%	4.9%	0.2%	3.9%
Gross national income	2.2%	4.8%	1.3%	2.6%

Source: Authors' calculations.

7.   **Demand-wise, exports and public consumption were the main drivers of growth between 1993 and 2005.** Lebanon's demand for goods and services (the domestic absorption, growing at 2.0 percent in real terms on average over the period 1993-2005) was increasingly satisfied by domestic producers (2.6 percent annual growth in real terms), which took over from imports (-0.1 percent annual growth in real terms).[11] This is understandable, given the increasing share of non-tradable goods and services in total absorption, services in particular, and the reconstitution of some capacities in tradable sectors after the war. Domestic absorption growth was mostly driven by public consumption (4.6 percent respectively), while private consumption and investment hardly grew in contrast (+1.3 and -0.7 percent respectively). Exports of goods and services (including tourism), yet starting from a low base, grew by 11.7 percent on average every year in real terms (in the face of low growth in export prices, +1.7 percent annually against 3.3 percent for the deflator of GDP). In turn, exports' growth contributed for approximately one-fourth to output growth between 1993 and 2005.

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[9] All growth rates reported in this paper are computed econometrically, via the regression of the logarithm of the considered series on a linear trend. This allows capturing all the information contained in the series, by opposition to the sole first and last observations generally used to compute growth rates.
[10] Excluding money supply from the components of the coincident indicator, the latter grew up at the annual rate of 2.2 percent between 1993 and 2005.
[11] These calculations are made based on the input/output matrix of 1997, which served as a basis for the computation of national accounts.

8.   **Investment declined since 1993 and its low level casts doubt on the ability of the Lebanese economy to accelerate growth in the current conditions.** As the ratio of investment over GDP went down from 31 percent in the period 1994-1997 to less than 21 percent since 2001, there is little doubt that the growth in the stock of infrastructure and productive capacities decelerated as well.[12] Other elements determining the long term GDP growth potential of any economy, labor, human capital accumulation and technical progress in particular, could not have compensated for such a deceleration. Indeed, with the large emigration flows[13] witnessed since 1991, it is doubtful that employment and human capital grew rapidly. Besides, low competition pressures[14] faced by Lebanese entrepreneurs possibly did not encourage them to seek productivity gains on a large scale to contain production costs. Finally, the composition of its investment expenditures (as reflected by the stagnation in imports of machinery equipments[15] and the large share of construction investments – 67 percent of investment expenditures between 1997 and 2002, and almost 100 percent of foreign direct investments) does not suggest strong efforts to modernize productive capacities.

Figure 1. Gross Fixed Capital Formation / GDP
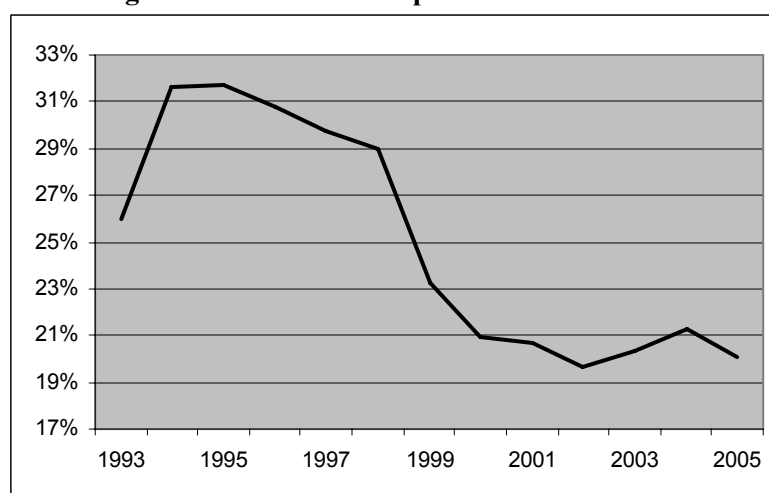
Source: Authors' Calculations

Yet, the significant growth in merchandise exports receipts between 1997 and 2004 (+15 percent annually) could reflect tangible productivity gains. The evolution of Lebanon's export market shares over the same period indeed suggests that exports growth resulted for one-third to one-half from competitiveness gains, while the remainder resulted from the exogenous expansion of exports markets. During this period, Lebanon was in particular able to re-position itself on expanding markets, thanks to the signature of new trade agreements coupled with a well-diversified export structure (see below). Though, while promising, such competitiveness gains cannot have contributed for more than

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[12] Using the permanent inventory method (i.e., the capital stock is equal to 95 percent of the capital stock of the previous period, plus investment), we compute three series of capital stocks, using three initial capital output ratios: one, two and three. The three series of capital stock exhibit a concave shape, reflecting their declining growth rates.

[13] Kasparian, (2003) estimates the annual gross outflow of Lebanese migrants at 32,000 between 1996 and 2001. The comparison of age pyramids between 1996 and 2004, once accounted for mortality rates per cohort, would put the same number around 40,000. According to the same data, the population aged between 15 and 64 is naturally increasing by 40,000 every year. Hence, most of the natural increase in Lebanese working age population gets annulated by emigration. The fact that emigrants are more skilled and have higher labor force participation rates than residents further aggravates this worrisome picture of a stagnating and ageing labor force.

[14] Competition is very limited in Lebanon. Half of Lebanon's domestic markets are considered oligopolistic to monopolistic and a third of them have a dominant firm with a market share above 40 percent (MOET, 2003).

[15] Imported machinery equipments (expressed in US$, nominal terms, source: Lebanon Banking Association) exhibit a -2.1 percent annual growth rate between September 1993 and December 2005 (-2.4 percent between January 1997 and December 2005).

0.3 percentage points to annual real GDP growth since 1997, given the small initial size of merchandise exports in GDP (4 percent). Moreover, econometric analysis conducted on a detailed (4-digit) panel for the period 1997-2005 suggests that, beyond a few success stories, the export boom of the past years did not stem from modernization efforts (that could be observed at the product level), but was rather driven by exogenous macro-economic shocks.[16] Consistent with this observation is the evolution between 1997 and 2005 of the technological composition of exports[17] which reveals that most of the growth in exports was concentrated in resources-based exports, where potential technological gains are generally scarcer (although some progresses were also observed with high technology products). In contrast though, it is possible (but difficult to assess) that service sectors made greater productivity gains, finance and tourism in particular, given the modernization efforts undertaken since 1993.

9. **The economic rebound of the recent years does not seemingly reflect a structural change in growth trends.** In the recent years (2001-2005), the economy grew faster, at a rate of 4 percent per year in real terms (Table 1). Nevertheless, it is doubtful that this rebound results from an acceleration of Lebanon's growth potential through greater investments. Rather, it is likely that the economic activity has been fostered by extraordinarily positive shocks, which sustained the demand for Lebanese goods and services. The comparison with other MENA countries with similar characteristics (resource poor, labor abundant) and facing similar shocks is eloquent in this regard, see Figure 2 below.

Figure 2. GDP and Investment Performance, 2001-2005
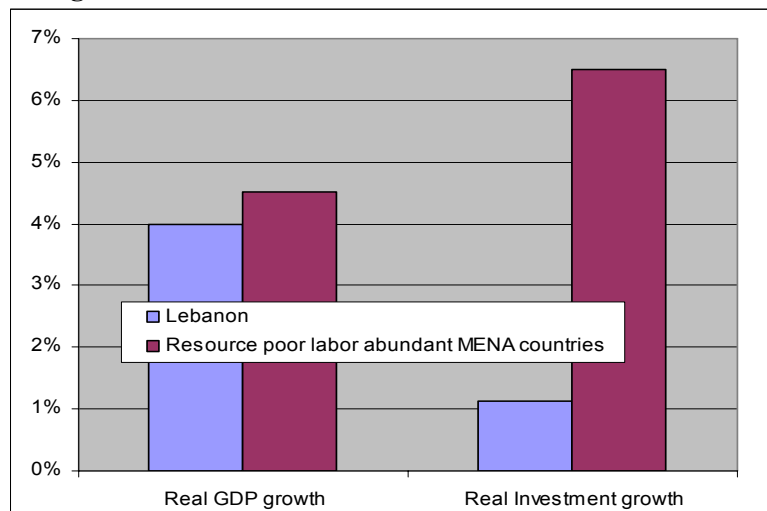
Source: Authors' Calculations

For the sake of illustration and decomposition of growth between a long term trend (the growth potential) and shorter term variations around business cycles, we regress (the logarithm of) real GDP on capital stock and a time trend supposed to capture technological change, human capital and labor growth.[18] Figure 3 below depicts the deviations of GDP vis-à-vis such a long term growth potential –

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[16] Exports volumes are regressed on macro-economic variables (external demand, price competitiveness) and product-specific trends. The latter are supposed to capture product-specific export performance once controlled for macro-economic factors, over which Lebanon has little control. The average of product-specific trends is nil, and only a few exhibit significantly positive signs. Most of the success stories are by-products of agri-food and manufacturing industries, and not major manufactured or processed commodities.

[17] This decomposition is proposed by Lall (2000). Between 1997 and 2005 the share of resource-based exports in total exports went up from 22 to 36 percent, while that of high-technology products went up from 5 to 9 percent. In contrast, the share of primary products, low technology and medium technology products went respectively down from 18, 34 and 22 percent to 10, 25 and 21 percent.

[18] Although to be taken with a lot of caution given the small size of the sample and the relative reliability of data, the estimates produce plausible elasticities of GDP with respect to capital, comprised between 0.2 and 0.4

business cycles. Three distinct episodes can be clearly observed After the initial reconstruction boom (1993-1997), during which the economy probably grew faster than what its long term potential probably allows, a strong correction occurred. Following that period (1997-2001), the economy rebounded, in a pattern quasi-similar to that observed in the initial period (though mostly driven by growth in private absorption, against public absorption in the initial phase, see Table 1). The exercise also reveals the great volatility of Lebanon's GDP growth, with a standard deviation around the long term trend of 2.5 percentage points.

Figure 3. Lebanon's Business Cycles
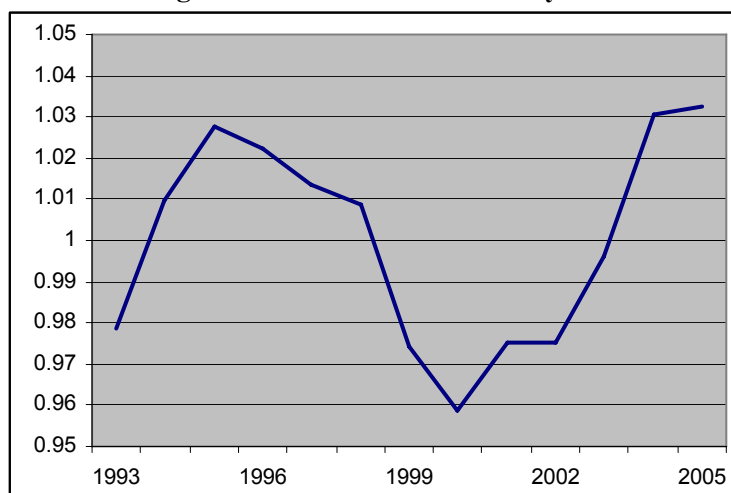
Source: Authors' Calculations

10.   Econometric analysis of short term variations of economic activity suggests the importance of external factors. Analysis conducted over the period 1993-2005 (using annual and monthly data) underlines the importance of oil prices[19], nominal competitiveness[20] and capital inflows and transfers (such as the exceptional ones following the Paris II donors' conference) in the determination of Lebanon's business cycles.

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depending on the series of capital stocks used (different initial capital output ratios, from 1 to 3). A similar exercise is conducted using monthly data for the coincident indicator and imports of machinery. We compute various series of capital stocks (assuming complementarity between imported machinery equipments and other investment expenditures) and regress the coincident indicator on these various series of capital stock. The series are co-integrated and the elasticity of the coincident indicator with respect to the stock of imported machinery ranging between 0.2 and 0.3.

[19] Merchandise exports and tourism receipts (as proxied by the number of passengers at the International Airport) exhibit both a statistically significant co-integrated relationship with world oil prices (monthly data), suggesting that Arab countries' demand fluctuations affect Lebanon's export movements. Arab countries represented almost half of Lebanon's merchandise exports outlets in 2003, and similarly the origin of approximately half of the visitors to Lebanon.

[20] Price competitiveness, measured by the ratio of domestic prices (measured in US$) over the export-weighted average CPI of client countries also seems to play a significant role on merchandise exports volumes, though the appreciation of the Euro vis-à-vis the LBP in 2002-3 was not accompanied with gains of market shares in Europe (UNDP, 2004). The significance of price competitiveness on export performance is also observed using 4-digit panel data over the period 1997-2005.

Growth Diagnostic

11.   As for the growth potential itself, one should typically look at the determinants of private investment. The growth diagnostic framework developed by Hausman et al. (2004) can be helpful in this regard. The diagnostic approach consists of exploring a decision tree of potential constraints to growth, with a view to select the most binding one(s) – See Figure 4 below. At its most general level, long term growth can be explained by the private accumulation of productive capacities through investment, which depends on cost of finance and private returns to economic activity. The latter can be further decomposed between social (aggregate) returns and their appropriation by private agents, and these two components can themselves result from a number of causes, from poor infrastructure to market failures. While schematic, this approach is nevertheless useful in the sense that it forges the discipline to review all possible constraints to growth with a view to select the most binding one, and we follow it in the next paragraphs.

Figure 4. Potential Constraints to Growth
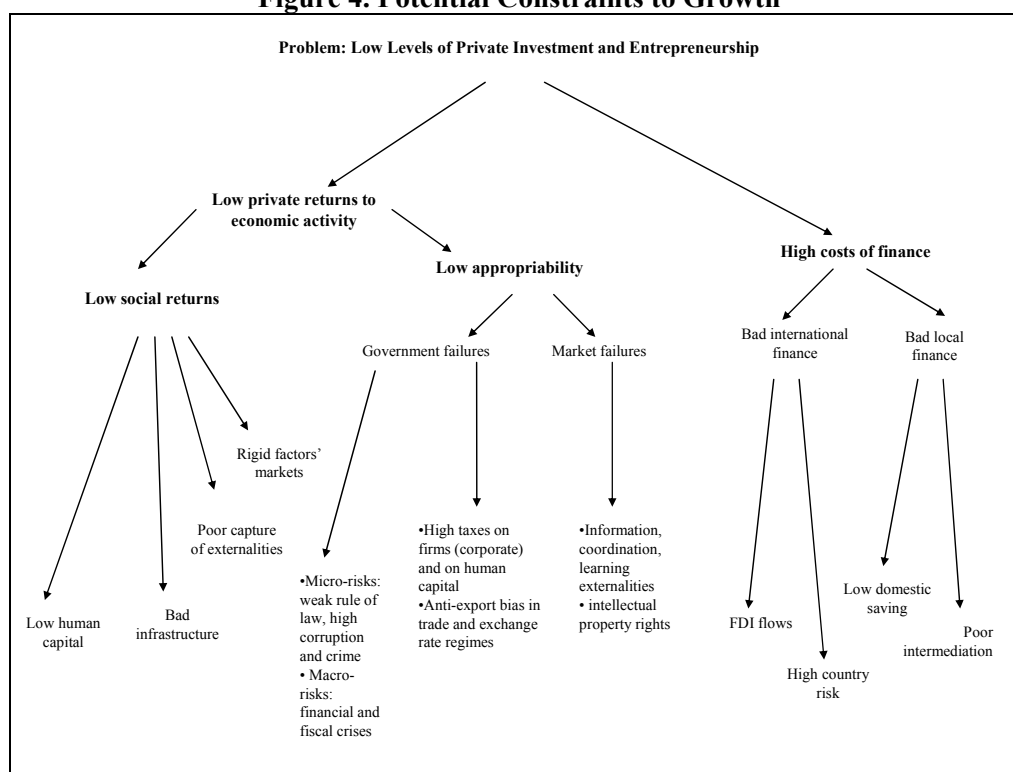
Source: Hausman et al. (2004)

Lebanon's Access to Finance

12.   Lebanon enjoys full capital account openness and is benefiting from massive transfers and capital inflows from abroad; as such it is unlikely that access to finance represents a major constraint to growth. Available external savings are substantial in Lebanon, thanks to foreign capital inflows, transfers and remittances (33 percent of GDP on average every year between 1993 and 2005; 22 percent of GDP between 2001 and 2005) that compensate for the absence of domestic savings (-8 percent of GDP on average every year between 1993 and 2005; -1 percent of GDP between 2001 and 2005). Most of these savings are being deposited into Lebanese banks, which have seen their deposits base growing by 11.5 percent in real terms between 1993 and 2005, to reach the equivalent of 255 percent of GDP by end-2005 – the second highest ratio in the world after Luxemburg. In turn, banking credit to the economy (the Government and the private sector) has also been growing rapidly between

1993 and 2005, at the annual pace of 10.5 percent in real terms, to reach 152 percent of GDP[21]. Furthermore, banks' margins of intermediation are reasonably low, about 2.5 percentage points, which is equivalent to what is charged in Italy, France or the United Kingdom.

13. **In turn, interest rates charged on debtors are low by international standards,** thanks to the low margins but also to the low spread levels that Lebanon is benefiting from on international capital markets - see Figure 5. This chart, compiled using data for 2003, illustrates the fact that Lebanon, given its sovereign ratings (below investment grade for the three major agencies), structurally benefit from very low spreads in comparison with other emerging economies. Reasons behind this capacity to attract foreign funds at moderate costs probably include bank secrecy, a home bias from the large Lebanese Diaspora, the perceived ability and intention of authorities to maintain monetary stability, the size of central and commercial banks' net foreign assets (approximately US$11.4 billion, or 51 percent of GDP), or the fact that the Central Bank never (directly) transmitted to depositors the costs of banks' bankruptcies. Accordingly, interest rates served on US$-denominated deposits are low, with spreads over the LIBOR not exceeding 276 and averaging only 45 basis points between 1993 and 2005. In turn, financial resources available for Lebanon are not only abundant, but also relatively inexpensive. Whether these resources are being used to finance private domestic investment is discussed in the section covering appropriation issues.

Figure 5. Average Eurobond Spread vs. Sovereign Rating
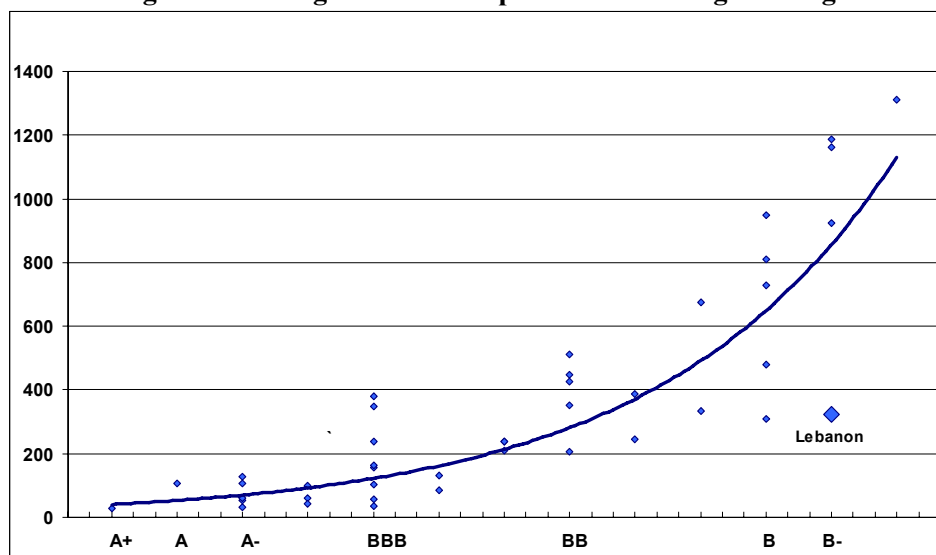
Source: Authors' Calculations

Social Returns

14. **Lebanon's social return to investment is low.** The growth diagnosis framework further decomposes the candidate reasons for low private returns: low social returns, on the one hand, and low private appropriability of the returns, on the other hand. Social returns to investment can be raised by providing in adequate proportions to private capital the complementary factors which will maximize its productivity: human capital, infrastructure, and public goods in particular. Social returns to investment can also be raised by improving the allocation of labor and capital towards the most productive sectors. Social return to investment can broadly be measured by the ratio of GDP growth over the investment rate. With an average return of 12.5 percent over the period 1997-2005, it appears that Lebanon has been poorly performing in comparison with other emerging economies: for the same

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[21] Banks' gross foreign assets and deposits at the Central Bank make the difference between deposits and credits. Outstanding credit to the private (respectively public) sector reached 73 (respectively 79) percent of GDP by end-2005.

investment rate, emerging economies get on average one additional percentage point of GDP growth per year.

Figure 6. Social Return to Investment
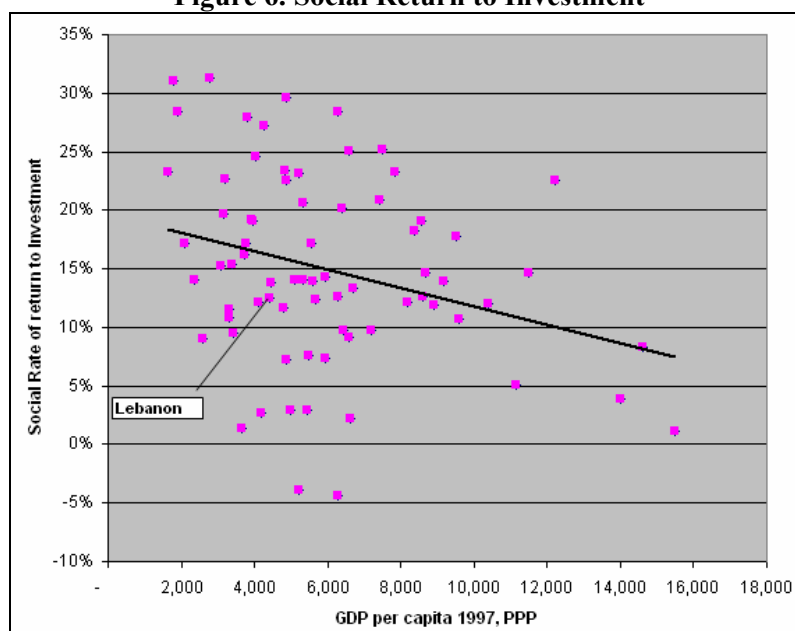
Source: Authors' Calculations

15.   Human capital availability is probably not a binding constraint. Human capital accumulation is certainly a decisive factor for long term growth. Yet, in Lebanon's current economic environment, the supply of skilled labor is most probably not a strong binding constraint to economic growth. This is evidenced by a number of factors, including the high unemployment rate among skilled workers (as of 2004) and the fact that the educational level of Lebanese emigrants is significantly higher than that of residents (Kasparian, 2003), the latter being seen as a response to the lack of sufficiently remunerative employment opportunities (in the face of high reservation wages, given high price levels in Lebanon[22]).

Table 2. Unemployment and Education (2004)

	Unemployment rate
illiterate	5.0%
read write	6.1%
pre-school	5.2%
elementary	7.9%
intermediate	9.3%
secondary	7.9%
university	7.6%
vocational training, secondary	11.3%
vocational training, university	11.5%
Total	8.2%

Source: Central Administration of Statistics, 2005.

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[22] Consistent with the appreciation of the real exchange rate, price levels in Lebanon, as measured by the International Comparison Program, more than doubled in the period 1992-2004. In comparison, price levels in upper middle incomes (the group to which Lebanon belongs) remained unchanged during the same period.

The calculation of economic returns to education in Lebanon tends to confirm this observation that human capital is poorly valued on Lebanon's domestic labor market. Gross private returns[23] to education are very low by international standards – an estimated 9 percent in Lebanon against 21 percent worldwide (Psacharopoulos and Patrinos, 2002) and social returns even lower, once accounted for the very high level of education expenditure in Lebanon's GDP.[24] Clearly, given its high cost and low domestic return, educational investment mostly makes sense at its current levels as it improves access to better remunerated jobs abroad.

16. **The poor provision of infrastructure – electricity in particular - could be a factor of slow growth.** Fifteen years after the end of the civil war, and in spite of massive reconstruction efforts, Lebanon still records high utilities' costs, low quality and reliability, and a poor and congested transport network. As such, it would seem rather obvious to consider poor infrastructure as a major determinant of low social returns to economic activity and recommend higher rates of infrastructure investments. Yet, a more detailed analysis of current problems and potential solutions could be conducted to recommend more nuanced solutions: while larger investments in the electricity sector could have a strong positive impact on economic activity, raising performances in the transport and communication sectors is probably more a question of improved regulation. The water sector, while important from an environmental perspective (Sarraf et al., 2004), remains marginal in macro-economic terms, even once accounted for implicit price subsidies.

17. **The electricity sector combines high costs of production with severe de facto price distortions.** At 9 cents on average per Kw/h Lebanon's electricity tariffs are among the highest in the region[25]. Furthermore, the poor reliability of the service conduct most firms to use costly generators[26], to overcome power outages. Yet, in the face of ever-high oil prices, current electricity tariffs do not allow to recover production costs, and high commercial losses (illegal connections) actually imply that electricity users (both producers and final consumers) get subsidized by the Government.[27] As such, it is not obvious that economic activity or private investment decisions get negatively affected by electricity prices. However, given its large impact on public finance, reforming the electricity sector is a must[28]. And if such reform results in reduced illegal connections (hence reduced implicit price distortions), lower production costs (an expected 25 percent drop, through the conversion of electricity production from oil to gas and expanded capacity eliminating the need for generators), and higher quality, economic growth rewards could be significant (but not immense, as sometimes predicted), around 0.2-0.3 percentage points of additional annual GDP growth in the years following the reform.

18. **The state and size of infrastructure in the transport and communications sectors, on the other hand, are not believed to severely affect economic activity and investment decisions.**

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[23] Gross private returns measure the relative increase in income or salary with one additional year of education. We use household budget data from 1997 to estimate such a return.

[24] One additional year of education per student costs Lebanon (public plus private education expenditure) 26 percent of the average per capita income, and 10 percent of GDP (World Bank, 2005a). In this setting, one additional year of education adds very little, if any, to the actualized stream of net revenue (made in Lebanon) for the individual who chose to spend one more year at school.

[25] Note that countries in the region, with tariffs that are appreciably lower than that of Lebanon utilize their own hydrocarbon resources to subsidize the cost of fuel. These subsidies are then passed along, allowing them to keep the cost of supplying electricity at very low levels.

[26] The equivalent of 20 percent of total electricity consumption (World Bank 2004b), at a production cost 80 percent higher than that incurred by the Public Electricity Company.

[27] Electricity is on average charged 9 cents per Kw/h, but costs 15 cents to be produced (once accounted for technical losses). With commercial losses representing 25 percent of the electricity distributed, it means that the actual average price paid by the user is only 7 cents, 55 percent below the production cost. This implicit subsidy approximately represents 3 percent of GDP. Though, the obligation to use diesel generators raises the average user's electricity price to 11 cents approximately.

[28] In 2005, Government transfers to the public electricity company to cover its operational losses amounted to 1.9 percent of GDP.

Although often congested on its main axes, the road network is considered to be of acceptable quality (cf. World Bank's forthcoming trade facilitation audit). Further improving the road network in Lebanon is not believed to have a significant impact on production costs, nor on household expenditures (which could free some savings for additional investments). Distances are short in Lebanon, as most activities are concentrated in urban areas, and time of travel has little bearing on overall costs. Moreover, transport services are being subsidized through a number of channels.[29] In the medium run though, investment aimed at encouraging alternative modes of transportation could significantly reduce its social costs, especially in the coastal and urban zones (CDR, 2004).

Improving the air transport infrastructure is not likely either to affect costs, given the currently low utilization rate of the Beirut International Airport, which was fully renovated and modernized after the war. Regulation could possibly be an issue in this sector, given the small number of operators per destination, even though Lebanon recently adopted an open sky policy. This issue is further discussed below. The infrastructure of sea ports is also satisfactory, according to a forthcoming World Bank trade facilitation audit, but rampant corruption and costly government fees tend to inflate trading costs above regional averages.

In the telecommunications sector, the major technical loophole is the absence of high speed internet connections through regular ISP providers. Its impact on costs and investments decision is unknown, but could be relatively large, given Lebanon's specialization in services. In this sector though, as well as in the other branches of communication, this is more the lack of competition than the lack of adequate infrastructure which tends to inflate costs.

19. Government's current expenditure poorly complements private investment. Government spending is high in Lebanon as a percentage of GDP (34.5 percent on average between 2001 and 2005). Though, once removed transfers and debt payments, this ratio goes down to 20.0 percent (16.2 percent for current expenditures and 3.9 percent for investment expenditures), which is low by international standards. Furthermore, in many instances public expenditures are poorly effective, as underlined in the recent Public Expenditure Review (World Bank, 2005a). As such, it is very probable that the poor provision of public goods is affecting economic activity, and the private provision of services, unusually high in Lebanon, cannot replace that of the Government in some key sectors. However, within a fiscal stabilization context, this does not necessarily mean that such expenditure should be raised, but rather rationalized given the potentially large scope for improvement.

20. Labor and capital markets are functioning relatively well. A major impediment to growth can stem from the economy's inability to mobilize and allocate its productive resources where they would be the most effective.[30] The functioning of factors market – labor and capital – is instrumental in this regard.

As far as the labor market is concerned, Lebanon lacks some of the features that are typically associated with high rigidity, such as tight regulation, strong unions, or generous unemployment schemes. World Bank's Doing Business indicators tend to confirm this point. In many instances, Lebanon labor markets' do not appear more rigid than in other MENA (or even OECD) countries (see Table 3). There exists indeed a minimum wage, but it is not binding. Most formal workers get paid much higher than the minimum wage and informal and foreign workers are de facto or de jure not concerned by this regulation. The low level of unemployment for unskilled workers (Table 2) is another strong indication that wage regulation does not significantly affect labor demand. On the other hand, the pension scheme (end of indemnity service) for private employees imposes large and

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[29] Retail prices of taxi services and oil are capped, and respectively financed through the exemption of contribution to social security for drivers and lower excise taxes to offset growing global oil prices. Collective transportation is also exempted from VAT (zero rate).

[30] In Taiwan for instance, the good allocative efficiency of labor markets contributed to raise annual GDP growth by one percentage point between 1950 and 1990 (Dessus, 2000).

uncertain costs on last employers and can therefore reduce labor demand and mobility (World Bank, 2005d).

Table 3. Indicators of Labor Market Rigidities

Indicator	Lebanon	Region	OECD
Rigidity of Employment Index	24.0	40.2	35.8
Hiring cost (% of salary)	21.5	15.9	20.7
Firing costs (weeks of wages)	17.3	62.4	35.1

Source: World Bank (2005c)

Probably more binding is the existence of high reservation wages stemming from alternative employment opportunities abroad (as suggested by continued private investment in education in spite of poor domestic returns) and high domestic cost of living. Here the fact that unemployment declines strongly with age could suggest that unemployment is temporary for new entrants due to the opportunities for emigration. Under current migration patterns, approximately half of a given generation will have eventually left the country at the age of 59.

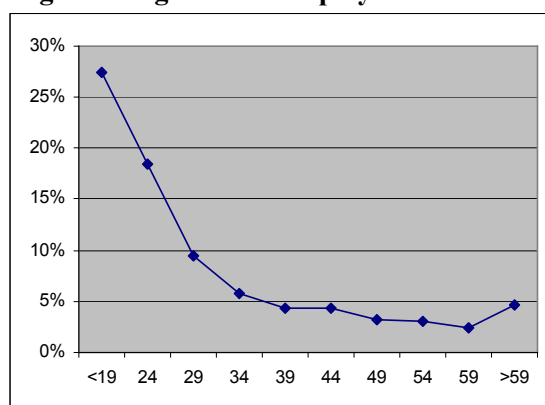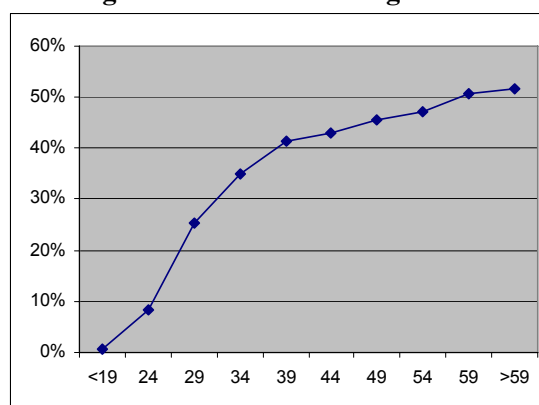**Figure 7. Age and Unemployment Rate**   **Figure 8. Cumulative Migration Rate**

Source: Authors' calculations based on CAS (2005) and Kasparian (2003)

The effectiveness of the financial sector to mobilize savings cannot be considered as a constraint either, given its exceptional depth. Obviously, the underdevelopment of capital markets and the limited appetite of Lebanese banks for genuine investment banking – to some extent the result of banking regulations which favor lending to the government and the use of real estate collaterals – could possibly affect growth. However, the small average size and family-owned nature of most enterprises in Lebanon probably limits the potential for capital markets development. Besides, the mitigated performance of financial schemes aimed at providing soft loans to SMEs for investment (see below), and the fact that most formal enterprises do get access to banking credit (per the forthcoming World Bank's Investment Climate Assessment[31]) could suggest that it is more a problem of demand than a problem of supply of credit which currently constrains investment. In other words, it is not necessarily here the capacity of financial markets to channel funds to productive sectors which needs to be improved in priority.

21.   A major explanation for Lebanon's low social returns could lie in the strong appreciation of the real exchange rate which occurred in the 1990s. Since 1990, Lebanon's real exchange rate (the price of goods produced domestically over the price of goods produced

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[31] According to the forthcoming Investment Climate Assessment, about 69 percent of Lebanon's firms have a credit line with a bank, and 42 percent a loan. These proportions go down to 63 and 37 percent for small firms. Among the firms which do not borrow from the financial sector, only four percent saw the demand for credit turned down, while the remainder did not apply.

worldwide[32] expressed in the same currency) was multiplied by a factor ranging between 2 and 3, depending on the measure retained[33] – see Figure 9 below, most likely the result of massive capital inflows and transfers[34].

Figure 9. Real Exchange Rate 1970-2005, Various Methods of Calculation
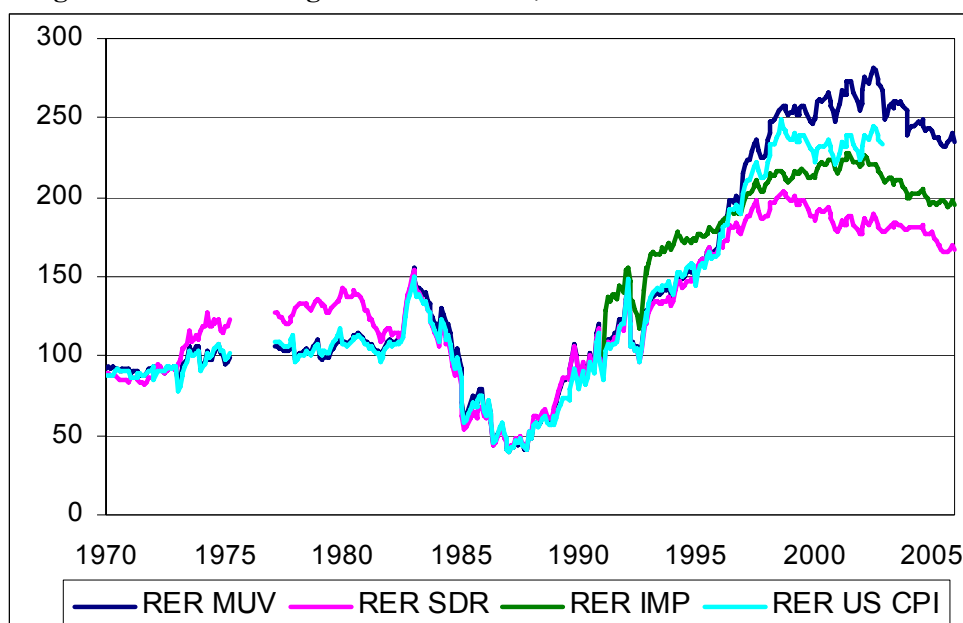
Source: Authors' calculations

Coincident to this phenomenon is the major shift of resources (through a typical Dutch disease phenomenon) towards non tradable sectors where potential productivity gains are much scarcer[35], hence most likely reducing social returns of economic activity and investment opportunities.[36] It is also likely that a concentration of factors in non-tradable sectors limits the scope for diversification and hence raises the exposure of the economy to shocks. Between 1997 and 2002, the share of agriculture and manufacturing sectors (probably the most exposed sectors to foreign competition) in GDP dropped from 20 to 17 percent, while symmetrically private services rose from 58 to 61

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[32] Another way to look at the same phenomenon is to compare the price of non-tradable goods and services (i.e. goods and services that cannot be exported or imported) with that of tradable, which are supposed to remain aligned with world prices to maintain competitiveness.

[33] Four measures are retained, using respectively for world prices the manufacturing unit value index (MUV), Special Drawing Rights (SDR), composite price of Lebanese imports (IMP, corresponding to the real effective exchange rate computed by the International Monetary Fund), and the US consumer price index (US CPI).

[34] There is a clear co-integrated relationship between the sum of capital inflows and transfers and the real exchange rate. The real exchange rate can be expected to appreciate with GDP growth (the so-called Balassa-Samuelson effect), but the magnitude of the appreciation (5 to 7 percent annually between 1993 and 2004, depending on the definition retained, against 3 percent for real GDP over the same period), is much too large to be explained by this phenomenon: empirical evidence of the Balassa-Samuelson effect indeed points to an elasticity of the real exchange rate with respect to GDP inferior to unity. Interestingly, a recent study on Ghana (Opoki-Afari et al., 2004) suggests that permanent capital inflows have had a strong and significant impact on the real exchange rate, with an elasticity close to 2.

[35] Larger potential productivity gains in tradable sectors are theoretically justified by the possibility to exploit greater gains of specialization and larger economies of scale, greater access to knowledge and know-how and higher competitive pressures. There is consistent empirical evidence to suggest that productivity gains are higher in tradable sectors than in non-tradable sectors (Ito et al., 1997, De Gregorio et al., 1994, Baldi et al., 2004, Egert et al., 2003). The distinction between tradable and non-tradable sectors is nevertheless tenuous, and evolving over time. One way to think about it is to look at the cost required to transport some products and services from one economy to another.

[36] Interestingly, capital stocks of imported equipments are negatively correlated to the evolution of the real exchange rate.

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percent.[37] Although impossible to verify empirically, the high levels of transfers and remittances could also be a reason for the low labor force participation rates in Lebanon (see Figure 10 below). A number of empirical studies indeed observe a negative relationship between remittances and labor force participation (Bussolo and Medvedev, 2006).

Figure 10. Labor Force Participation Rates (%), 2004
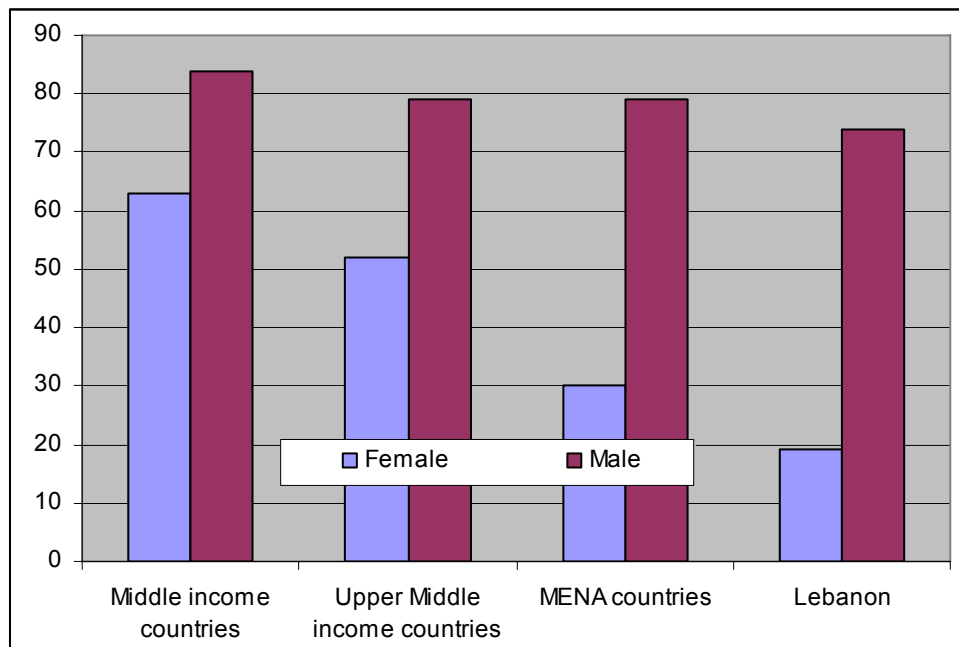
Source: Authors' calculations based on WDI and CAS (2005)

In the recent years (2002-2005), the real exchange rate trend was reversed, and, coincidentally, exports of goods and services surged - although starting from a low base and benefiting from positive exogenous demand shocks - while growth rebounded (see Table 1).

Private Appropriability of Returns

22.   This last group of candidate reasons for the lack of investments concerns the inability of private agents to reap the benefits of potential economic opportunities, the result of government or market failures. It comprises macro and micro-economic risks of expropriation, discrimination in access to products and factors markets, or the inability to protect property rights. Recent analysis on equity (World Bank, 2006) suggests how much it is important for long term growth and development to level playing fields and reduce inequalities in economic opportunities.

23.   In the face of Lebanon's growth and debt figures, it is natural to wonder whether current levels of public indebtedness crowd out private investment. International evidence (Baldacci et al., 2003, Patillo, et al., 2004) indeed strongly suggests that high public debt levels (and related high and growing government borrowing requirements) entail very high interest rates and/or inflation, crowd out private investments (and in turn capital accumulation and productivity growth) or simply discourage them (specially long term investments) in the face of high macro-economic risks and anticipated adjustment (higher taxes or the depreciation of assets).

Yet, Lebanon lacks most of the characteristics of a typical debt overhang problem: sovereign interest rates in Lebanon do not evolve in line with the debt stock or government's financing needs, even once

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[37] As another indication of the same phenomenon, employment in the manufacturing sector declined by 31 percent between 1996 and 2004 (Source: CAS, comparison of censuses of buildings, dwellings and establishments 1996 and 2004).

controlled for maturities' structure or the currency of borrowing; credit to the private sector remains abundant (73 percent of GDP by end 2005), and borrowing costs (interest rates plus commissions) low for private agents (+8 and 4 percent respectively in nominal and real terms in 2004) by international standards; credits to the private sector have grown rapidly (+15 percent per year in real terms) with real interest rates between 1993 and 1999, and have been declining with real interest rates since, which does not suggest either that private investment is being crowded out through typical interest rates mechanisms.[38]

Figure 11. Loans and Advances and Effective Cost of Borrowing
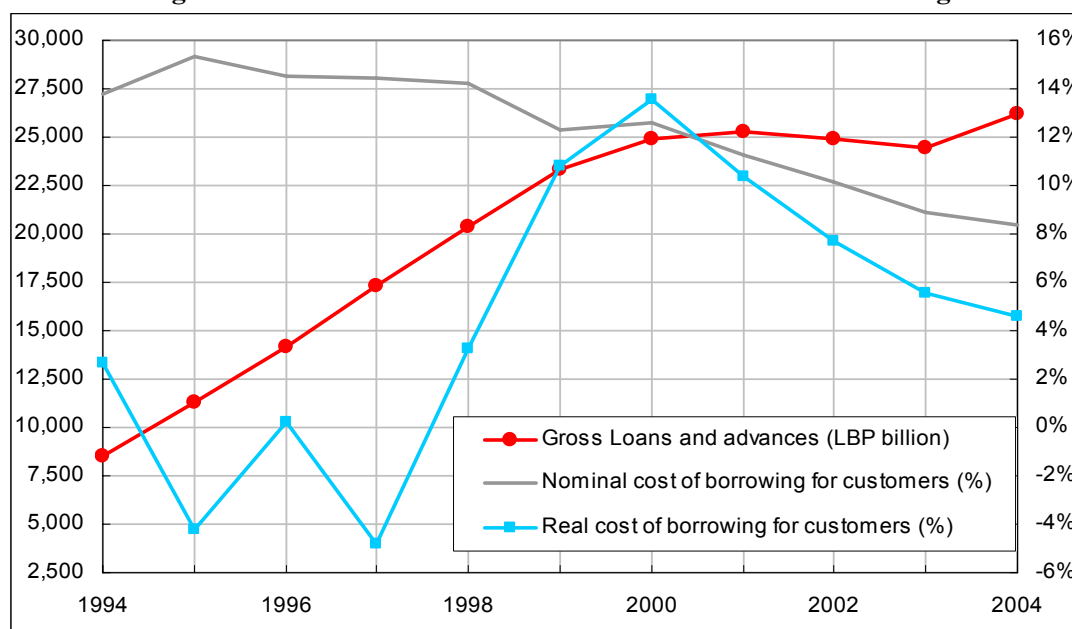
Source: Authors' calculations

Nevertheless, it is probable that macroeconomic imbalances affect the nature of investment decisions in Lebanon. This is notably reflected in the response of capital flows and dollarization rates to various macro-economic events: in the years 2000-2002 for instance, when the deterioration of the fiscal balance was accompanied with massive capital outflows, or conversely in 2003, when the ability of the Government to meet its financial obligations was restored with the Paris II donors' conference. Econometric analysis of foreign capital movements confirms these views (World Bank 2004). Accordingly, in the face of perceived risks, most private agents may prefer to invest in liquid instruments rather than in longer-term productive investments. The average maturity of deposits in Lebanese banks does not exceed 45 days, and the interest curve (measured for Treasury Bills in Lebanese pounds) exhibited by end-2005 a 600 basis points difference between 3-month and 60-month maturities. In turn, the level of liquidity that the financial system accordingly needs to maintain (51 percent of GDP in net terms, 130 percent in gross terms) obviously bears a high opportunity cost for the economy.

This being said, there are a number of factors which suggest that a reduction in debt levels might not be a sufficient condition to restore growth, via lower cost of financing and perceived macro-economic risks. First, the demand for credit looks relatively inelastic to borrowing costs. This is not only evidenced by the evolution of credits to the private sector and borrowing costs since 2000, but also by the low demand of SMEs for (highly) subsidized loans[39]. This could reflect the fact that firms already

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[38] Econometric analysis performed over the period 1962-2004 suggests that public debt hardly causes private investment or GDP (ESCWA, 2005) in Lebanon.

[39] Since 2000, the Central Bank is subsidizing a scheme –"Kafalat" allowing small and medium firms to obtain soft loans from the banking sector. Conditions required include (i) thorough review of the investment project feasibility, (ii) the size of the firm (up to 40 employees, which concern 95 percent of Lebanon's firms) and (iii)

engaged with the banking sector are over-leveraged[40] or that potential collaterals have now been exhausted. Second, the continuous rise in real estate investments, which are also exposed to macro-economic risks, could suggest that the absence of investments in other sectors stem from problems specific to these sectors (from high cost of business to high microeconomic risks of expropriation).[41] Third, even with bold fiscal adjustment, macro-economic risks and related vulnerabilities will remain notably elevated in the next years to come (see Box 1), and should hence only moderately affect investment decisions. Fourth, interest rates are now low and the scope for reducing them further is equally low, in particular given the high degree of capital mobility that Lebanon enjoys (IMF, 2006).

24.   High micro risks of expropriation, through widespread corruption and lack of competition most likely affect investment decisions. Rents are pervasive in Lebanon's economic system, mirroring the capture of economic returns by a few. These rents are of different nature, albeit with similar negative impact in terms of appropriability of returns to investment.

According to a recent study of the Ministry of Economy and Trade (MOET, 2003), half of Lebanon's domestic markets are considered oligopolistic to monopolistic and a third of them have a dominant firm with a market share above 40 percent, which would correspond to a share of monopolistic rents in GDP above 16 percent (Dessus and Ghaleb, 2006), or 27 percent of private value-added (at factor costs).[42] The reasons for such high rents are of different natures, but always relate in one way or another to the presence of barriers to entry and exit. Some of them are natural, in the presence of economies of scale or fixed costs for instance. Others are artificial, and stem from rules, regulations and norms that practically restrict entry into business. The MOET study lists in this regard outdated commercial laws, long delays in commercial disputes settlements, business-unfriendly administrative regulations, corruption, and the existence of exclusive import agencies as important artificial barriers to entry. The absence of anti-trust regulations, high startup costs and the existence of public monopolies in utilities and communication sectors can be added to this list. Coincident to the lack of market contestability in Lebanon is the high degree of informality (estimated at 34 percent of GNP, World Bank 2005c), which maintains a number of resources in small-scale activities where investment (for expansion or innovation) is by nature discouraged.

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compliance with tax and social regulations. Under the scheme, firms get a 7 percentage points discount on interest rates and a guarantee covering 75 percent of the value of the loan (up to US$200,000). Banks can also deduct the amount of the loan from their (poorly remunerated) compulsory reserves at the Central Bank. However, in spite of all these incentives, the demand for credit has remained below the credit envelope made available to this scheme. By end-2005, only 71 percent of the envelope (which remains small, US$240 million, or 1.2 percent of GDP and 1.6 percent of outstanding credits to the private sector) had been mobilized, which casts doubt on the potential impact of reduced borrowing costs on credit demand for private investment.

[40] From 12 percent in 1998, the share of problem loans reached 30 percent of total loans to the private sector in 2003, before going down to 23-24 percent in 2004-5, thanks to the incentives to settle them provided by the central bank.

[41] It might also be the case that real estate investors perceive a different macro risk, for various reasons. First, because land property is not taxed; second because agents might consider that external demand (which constitutes a large part of the total demand for real estate – 42 percent on average between 1998 and 2002, and probably more in the most recent years) will not be affected by macro-economic adjustments; third because real estate investments might comprise short term speculative investments, or on the contrary very-long term investments which are less sensitive to macro-economic fluctuations.

[42] Such a computation suggests that energy, water, transport and communication sectors are among the most concentrated ones (firms in these sectors are to a large extent State-owned, benefiting from oligopolistic or monopolistic positions). At the other extreme, animal products, textile and furniture are among the most de-concentrated ones.

Table 4. Costs of Entry and Exit into Business

Indicator	Lebanon	MENA	OECD
Cost to start a business (% of income per capita)	110.6	64.2	6.5
Cost to close a business (% of estate)	22.0	13.4	7.6
Cost to enforce contracts (% of debt)	26.7	17.7	10.6

Source: World Bank (2005c).

Corruption is another facet of the same inability to protect private returns to economic activity. All surveys conclude to the high and systemic level of corruption in Lebanon (well above comparator countries with similar income levels, see Figure 12), and the recent Investment Climate Assessment conducted by the World Bank indicates that private operators consider corruption as the main obstacle to the development of their economic activity. Even more worrying is the fact that the perception of corruption significantly progressed in Lebanon since 1996 (see Figure 12). Complex regulatory and taxation systems coupled with a poor judicial sector are probably among the reasons to explain such a degree of corruption, which leaves investors unprotected against predation.

**Figure 12. Corruption with Respect to Comparators and over Time**
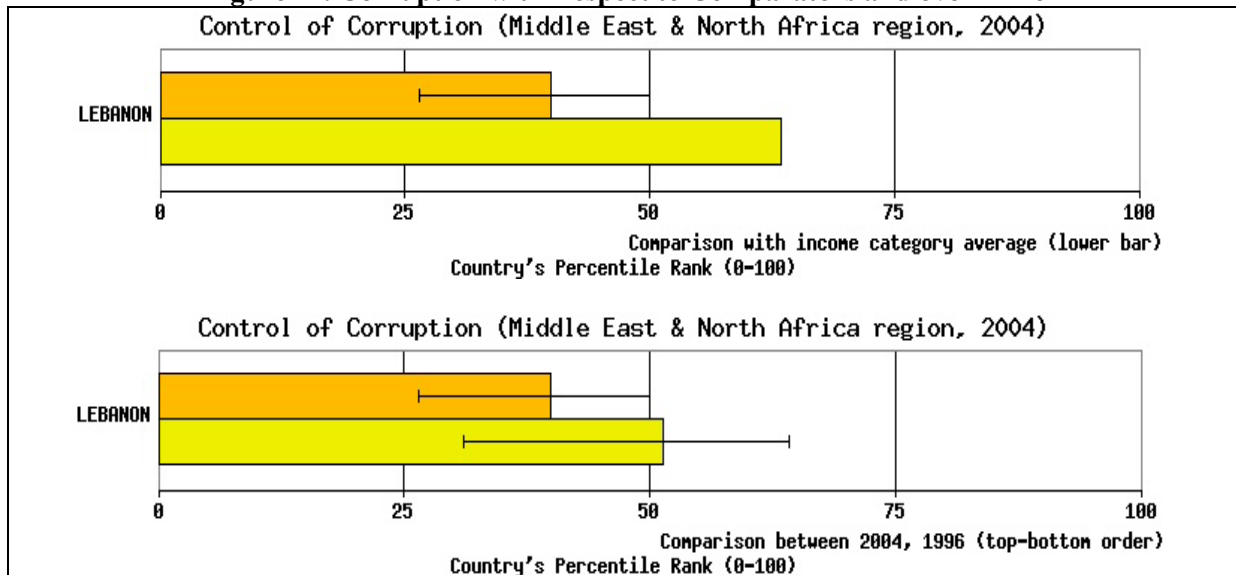
Source: Kaufman et al., 2005.

25. Taxation (from an appropriation perspective) and crime are not binding constraints to growth. Direct taxation is not significantly affecting investment decisions in Lebanon. Rates applied on wages and profits are low, simple and slightly progressive (up to 21 percent). Corporate taxes are among the lowest in the World. Land property is not taxed, but the Government collects a tax on built property. Lebanon's crime rate is moderate (US State Department, 2006), and the security of persons and belongings are well protected.

26. Lebanon's ability to develop new export markets does not seem to be hurt by market failures. Recent literature points to the importance of "market failures" to explain (lack of) export growth and diversification (Haussman and Rodrik, 2003), a major driver of growth for developing economies. The main argument retained in this literature states that private returns to discover what countries are good at producing and exporting are low compared with their social values in the absence of mechanisms to protect such returns from imitation. Intellectual property rights are not actionable here, as only concerned with genuine technological innovation, while ease of entry (and imitation), on the contrary, reduced the appropriability of discoveries. Hence the need to correct market failure with non-market mechanisms such as subsidized loans or guarantees.

While difficult to assess, it nevertheless appears that such market failures do not constitute a major constraint to export growth nowadays in Lebanon, as the number of self-discoveries[43] (over the period 1997-2005) is at par with countries of similar levels of development, and even higher once controlled for the size of exports in GDP (see Figure 13). Consistently with this observation, exports are reasonably well diversified. Computations of indices of exports diversification indeed put Lebanon at par with emerging countries.[44]

Figure 13. Discovery Performance
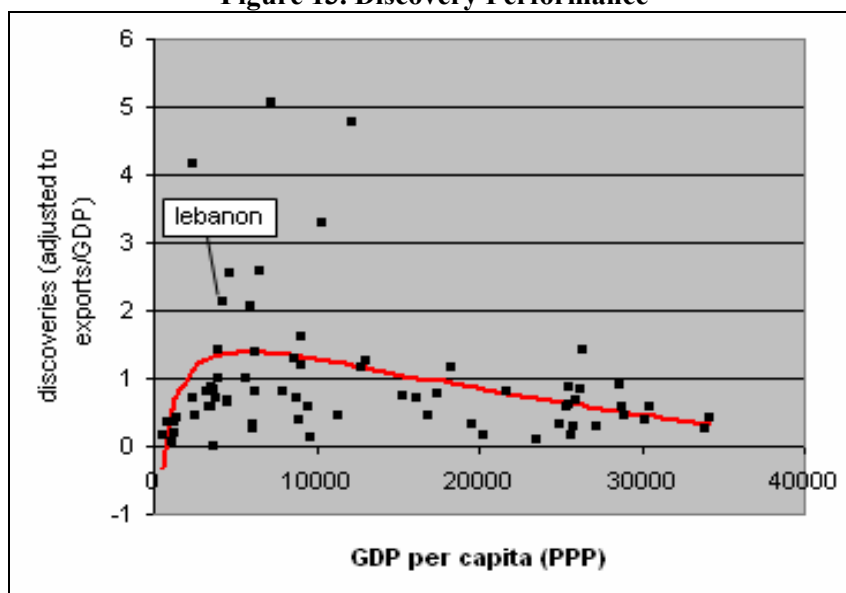
Source: Authors' calculations

Hence, What Could Be Done to Foster Growth?

27.   Fiscal stabilization remains a must, whatever its direct impact on growth. In the face of unsustainable debt dynamics and related high vulnerabilities, fiscal stabilization is an absolute must to protect growth from turning strongly negative. Recent episodes of financial crisis worldwide underline how costly market adjustments can be for an economy and society. With high capital mobility and dollarization rates, Lebanon's real GDP could heavily suffer from a forced contraction of its current account deficit.

As mentioned above, reduction in debt levels and government's financing needs will probably not suffice to put Lebanon on a higher growth path. Nonetheless, if the stabilization program is synonymous with a number of structural fiscal reforms, its impact on long-term growth could be substantial. In particular, electricity and civil service reforms could bring important growth rewards, as discussed below. And within the context of a rise in overall fiscal pressure, indirect tax reform could also lower some of the important distortions affecting investment and exports.

28.   The growth impact of fiscal stabilization will be greatly improved if it is accompanied by a sharp reduction in barriers to entry and investment. Key to restore growth is to improve the private investment response to better macro-economic conditions. This will most effectively pass by a

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[43] The number of discoveries is computed by identifying the number of (6-digit) exports products which, starting from zero in 1997-1998, have reached a level of at least US$1,000,000 in the last two years of the period, i.e., 2004-2005. The number of discoveries is then divided by the percentage of exports in GDP. Lower filters and the absence of correction for exports in GDP lead to similar conclusions.

[44] The comparison is based on HS4 export data and compared with computations using CTCI4 data provided by Berthelemy (2005). This comparison shows that Lebanon exports are well diversified, when controlled for the size of the economy and its GDP per capita.

reduction of barriers to entry and anti-export biases. Possible actions to lower barriers to investment includes in particular the enactment of a competition law, the abolition of exclusive import agencies, the liberalization of utilities, and the implementation of bold anti-corruption programs (in conjunction with civil service reform): judicial reform (contract enforcement, protection of investors, etc.) and simplification of business environment (startup costs, etc.), to encourage product market contestability. Possible actions to correct Dutch disease effects[45] and develop exports markets (where investment opportunities are potentially higher) include in particular the harmonization of taxes between imports and domestic goods, and the reduction of tax distortions in favor of non-tradable sectors, in the absence of any available instrument to directly control the real exchange rate.[46]

29. **In the next paragraphs, we tentatively try to assess the quantitative impact of such reforms on Lebanon's long-term growth potential.** In order to do so, we rely on a steady-state Computable General Equilibrium (CGE) model developed for that purpose, whose main features are detailed in Annex 1. In a nutshell, this model permits to capture the long term impact of changes in relative prices, the result of regulatory, investment or tax policies, on factor allocation and investment behaviors, and in turn capital accumulation, labor force participation and GDP growth. As such, it does not depart itself theoretically from the growth diagnosis framework which inspired the discussion in the previous section.[47] The model considers 15 sectors of activity and captures the major structural features of the Lebanese economy, in terms of production, trade and consumption patterns, as well as the major policy instruments which are altered in the following simulations.

30. **Beyond their macro-economic impact, structural fiscal reforms could have a substantial impact on long-term growth.** We simulate here the long term impact of two broad set of structural measures, whose primary objective is fiscal: investments (public and private, with increased competition) in the electricity sector to reduce illegal connections, convert the production system from oil to gas, and expand capacity to eliminate the need for generators [48] on the one hand, and pension and civil service reform, on the other hand, to restore the financial viability of public pension schemes and raise the productivity of the public labor force (World Bank 2005a).

Simulations results suggest that with the reform of the electricity sector, the growth potential of the economy could be improved by 0.2-0.3 percentage points every year. Effective electricity prices would only moderately decline, (as increased competition and conversion to gas would only offset the increase in effective tariffs due to the elimination of illegal connections), but the removal in price distortions would free some funds for additional investment and consumption, while greater quality of service delivery would reduce output losses.

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[45] Improved domestic competition could also increase the supply response of non-tradable goods and services, hence reducing the impact of capital inflows on the price of non tradable goods and services.

[46] An exchange rate policy might indeed not be effective to control the real exchange rate: Lebanon's high degree of dollarization induces a rapid and complete pass-through of exchange rate fluctuations into domestic prices, which neutralizes the impact of nominal exchange rate adjustment on the real exchange rate. Besides, an adjustment of the nominal exchange rate is associated with a number of risks and limitations: possible anticipations of further devaluation; lower capital inflows and balance of payments crisis (World Bank 2004); limited impact on public debt, since half of it is labeled in foreign currency.

[47] This is not to claim that CGE modeling is necessarily the most appropriate tool to calibrate empirically the HRV framework. Yet, in the absence of time series in Lebanon and given the nature of reforms we are interested in (low domestic competition, distortive tax and subsidies system, high cost of public service delivery) it is probably the best possible one. Indeed, the CGE model is able to plausibly quantify distortions and taxes, consumption vs. savings choices, labor participation decision or the impact of the supply of complementary factors on costs, which are at the core of HRV theoretical framework.

[48] The conversion of oil to gas is assumed to reduce production costs by 25 percent. The sum of investment required to undertake these various reforms is supposed to cost, on a permanent basis, 2 percent of GDP per year, 80 percent of it in the form of imported equipment goods.

Pension and civil service reform is simulated through a 20 percent increase in public labor force productivity.[49] The growth gain stemming from these reforms is estimated around 0.1-0.2 percentage point of additional real GDP growth per year, thanks to improved public sector efficiency. All in all, up to 0.3-0.4 percentage points of growth could be gained from the combination of these two sets of structural fiscal reforms.

31.   Higher domestic competition would have a very significant impact on investment. Impediments to doing business, from widespread corruption to administrative and other barriers to entry and exit into economic activity ultimately reduce markets' contestability and potential competition, with negative consequences on resource allocation, investment and incentives to contain production costs. Using the CGE model, we simulate a 33 percent reduction in markups[50] of all sectors of activity, which obviously imply greater liberalization efforts in the less contested sectors of energy, water, or transports and communication.[51] The long term impact on (higher) savings and (lower) investment costs is significant, as investment over GDP almost gains one percentage point. Exports as a percentage of GDP gain one percentage points as well, reflecting the greater ability of the economy to effectively allocate its resources. Accordingly, the long tem annual GDP growth potential is enhanced by 0.5-0.6 percentage points. The reform would be particularly beneficial to wage-earners, which could in turn encourage greater labor force participation and lower emigration.

32.   The elimination of anti-export biases would generate large investment opportunities. It is likely that the indirect tax structure has a significant impact on export performance. Indeed, in spite of recent trade liberalization efforts (tariff cuts), imports remain much more taxed than domestic goods and services.[52] Moreover, non-tradable sectors remain highly favored by the fiscal system, through a combination of VAT exemptions and limited taxation on non-tradable assets such as land and real estate. Both the protection of import-competing industries and the implicit subsidy of non-tradable sectors act as strong anti-export biases. Using the CGE model, we simulate a complete removal of tariffs (leaving unchanged excise taxes), to be compensated with the elimination of VAT exemptions[53], that we model by imposing a flat 7.0 percent effective tax on private consumption (up

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[49] World Bank (2005) suggests that civil service / pension reform could lead to downsize by 15 percent in the next ten years the public labor force (by replacing two third of those retiring and halving the number of contractual workers), while spending 35 percent more per worker in the form of training or wage increases. We calibrate labor productivity growth in such a way that real government spending remains the same while public labor force declines by 15 percent.

[50] Sectoral markups, which stem from imperfect competition, are calibrated using Herfindhal indexes reported in MOET (2003) and are comprised between 0.1 and 25 percent, see Dessus and Ghaleb (2006).

[51] Assuming that a given product market is equally shared between its various operators, reducing markups by a third basically means increasing by 50 percent the number of operators on this market, from two to three for instance in the case of cell phones. But as pointed out in the literature on competition, the simple threat of greater potential competition might suffice to reduce markups.

[52] Customs duties went down from 18 percent of the value of imports in 1998 to less than 4 percent in 2005. In compensation, the authorities introduced VAT on most tradable goods and increased excise taxes (on products imported and not produced domestically, such as petroleum and cars). Therefore, competition between imports and domestic products seemingly increased in the recent years. But at the same time imports got taxed overall more heavily (including excises and VAT), while VAT collected on domestic goods remained much lower, for several reasons (exemptions in services sectors, poor domestic tax collection efficiency). The extent to which these efforts brought more competition between imports and domestic goods hence needs to be confirmed. Indeed, indirect taxes (excise, tariffs, VAT) collected on imports added 18 percent to their prices at the border in 2003. In comparison, VAT collected on domestic goods and services added only 1 percent to their sales prices.

[53] A number of sectors are exempted (i.e., there is no tax imposed on the good/service when sold), while others benefit from the zero-rate scheme (i.e., not only goods/services are exempted, but can claim to be refunded for the VAT paid on inputs). In the first category one can find insurance and banking services, and real estate activities. In the second category one can find private education and heath, collective transportation, and manufacturing of books, newspapers, magazines and medicines. Threshold of eligibility (a turnover above US$100,000) and evasion complement the explanation for an effective rate below 10 percent, which is the VAT rate formally charged on goods. Private health and education expenditures alone represent 14.7 percent of GDP (World Bank, 2005a), and hence 17 percent of private consumption. Imposing them as any other sector would

from an average effective rate of 5.8 percent over the period 2003-2005). Results suggest that this reform would encourage a much greater participation of Lebanon into world markets, as the ratio of exports of goods and services over GDP would gain 4 percentage points, in spite of limited allocative efficiency (as competition patterns remain unchanged in this simulation). All in all, higher competitiveness of tradable sectors would increase investment opportunities, and the growth potential of the economy would be enhanced by another 0.4 percentage points. In the context of the envisaged fiscal stabilization program, these results would therefore rather argue for an enlargement of the VAT basis than for an increase in current rates which would leave untouched exemptions, as this second option would further raise distortions.

33. **The combination of these three sets of structural reforms could push up Lebanon's long-term growth potential by at least one and a half percentage point.** Each set of reforms would benefit from others, as evidenced by a last simulation that combines all three. Indeed, such a combination adds 0.3 percentage points to the sum of the three reforms implemented separately, (see Table 5 below). This is not surprising, as the various reforms envisaged are mutually reinforcing each other, to enhance the competitiveness of the Lebanese economy: the opportunities generated with trade liberalization would benefit from lower barriers to entry, and savings generated by fiscal reforms would have larger growth impact with new investment opportunities. All in all, results suggest that the growth potential of the Lebanese economy could be enhanced by 1.5 percentage points, from approximately 3 percent nowadays to 4-5 percent thereafter the reforms. The latter would be particularly beneficial to workers: with real wages 25 percent higher, the induced rise in labor force participation could basically eliminate net emigration flows and bring down the unemployment rate below 7 percent[54]. While relative growth in labor demand would be the largest in manufacturing sectors, job creation in private services would still constitute the bulk of job creation in absolute terms.

Table 5. Enhancing the Long Term Growth Potential of Lebanon

Public expenditure reforms : electricity, pension and civil service	+ 0.38%
Increased domestic competition and higher capital mobility	+0.56%
Trade liberalization and tax harmonization	+0.41%
All combined	**+1.65 %**

Source: Authors' calculations

These estimates can in turn be considered conservative, for two reasons. First, foreign direct investments, which are not considered in the analysis, could respond positively to new opportunities. Second, technological progress embodied in investments, especially in tradable sectors where constant modernization efforts are required (as opposed to investment aimed at expanding capacities, leaving unchanged the technology), are not considered in this analysis.

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hence grossly suffice to raise the effective rate from 5.8 to 7 percent. While basic health and education services are exempted in a number of countries, Australia is with Lebanon the only country to apply zero-rate to education.
[54] Under the assumption that foreign labor inflows get regulated, especially from Syria.

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Annex 1. The Computable General Equilibrium (CGE) Model

The CGE model developed for this study is a typical neoclassical model with endogenous prices, market clearing, and imperfect substitution between domestic and foreign goods, allowing for endogenous capital accumulation and labor force participation. CGE modeling has become a standard tool for integrated assessment of trade and fiscal policies especially for small economies, MENA countries notably. This type of modeling allows combining detailed databases with a sound micro-based theoretical framework capturing the interdependence and inter-linkages of markets. With such characteristics, CGE models are useful tools to assess the long term impact of structural reforms. The underlying assumption of market clearance and monetary neutrality renders, on the contrary, CGE models improper to address short-term impacts of macroeconomic policies.

The model is calibrated for the year 2005 with a Social Accounting Matrix (SAM) built for that purpose, based on the national accounts 1997-2002. The SAM and the model comprise 15 sectors of activity, one representative Lebanese household and one trading partner, the World.

As in any CGE prices are endogenous on each market (goods and factors) and equalize supplies (imports; Lebanese production for the domestic market; factors supply) and demands (final demand from households, the Government, investors and the rest of the world; intermediate demand from producers; factors demand), so as to obtain the equilibrium. The equilibrium is general in the sense that it concerns all the markets simultaneously.

Supply is modeled using nested constant elasticity of substitution (CES) functions, which describe the substitution and complement relations among the various inputs. Producers are cost-minimizers and constant return to scale is assumed. Output results from two composite goods: intermediate consumption and value added, combined in fixed proportions. The intermediate aggregate is obtained by combining all products in fixed proportions (Leontieff structure). The value-added is then decomposed in two substitutable parts: labor and capital, which are both fully employed. The former is assumed to be perfectly mobile across sectors, while the second is assumed to be sector-specific, to be consistent with the view that existing barriers to entry limit the reallocation of capital across sectors. This assumption is then partially relaxed with increased domestic competition.

Income from labor and capital accrue to the representative household. This income is allocated to consumption and savings using the Extended Linear Expenditure System (ELES) specification. Household demand is derived from maximizing the utility function, subject to the constraints of available income and consumer price vector. Household utility is a positive function of consumption of the various products and savings. Income elasticities are differentiated by product. The calibration of the model determines a per capita subsistence minimum for each product, which will be consumed whatever the price and the income of the households, while the remaining demand is derived through an optimization process. The subsistence share in the consumption of basic goods is higher than in the consumption of luxury goods. With lower disposable income, the households' savings rate declines to protect subsistence consumption. Government and investment demands are disaggregated in sectoral demands once their total value is determined according to fixed coefficient functions.

The model assumes imperfect substitution among goods originating from different geographical areas. Import demand results from a CES aggregation function of domestic and imported goods. Export supply is symmetrically modeled as a constant elasticity of transformation (CET) function. Producers decide to allocate their output to domestic or foreign markets responding to relative prices.

Several macro-economic constraints are introduced in this model. First, the small country assumption holds, the Lebanese economy being unable to change world prices; thus, its imports and exports prices on world markets are exogenous. Capital transfers are exogenous as well, and therefore the trade balance is fixed, so as to achieve the balance of payments equilibrium. Second, the model imposes fixed real public expenditures and savings, to reflect the Government's choice of delivering a given amount and quality of public services and ability to borrow. Public receipts thus adjust endogenously

to achieve the predetermined government net position, through a change in net transfer from households to Government.[55] Third, investment is determined by the availability of savings, the latter originating from households, Government and abroad.

Imperfect competition is modeled by imposing a markup[56] on marginal costs (for domestic products sold on the domestic market) or on the domestic price for imports.[57] The rents stemming from mark-ups accrue to the supplier of the good, be it domestic (the Lebanese representative household) or foreign (in the form of capital income transfers). The rent is distributed between foreign and local suppliers in proportion of their respective market shares on the domestic market.

Finally, the model capture the long term impact of policy reforms on capital accumulation and labor force participation. The model simply allows the total capital stock to evolve in proportion with real investment. In other words, we capture here the long term impact of policy-induced changes in households' saving rates and price of investment on the steady-state capital stock. Similarly, we assume that labor force participation responds to changes in real wages (nominal wages over consumer price index), with an elasticity of 0.5. The latter reflects the large reservoir of Lebanon's working-age population currently preferring to emigrate or stay out of the labor market in the face of a price structure unable to meet its reservation wage (Kasparian, 2003). In a typical conditional convergence framework, the change in the steady state per capital income would thus affect the transitional growth rate towards this new steady state. If such a growth rate x can be written as:

$$x = \lambda \ln(y*/y)$$

with λ the speed of convergence, y and $y*$ respectively the current and steady state capital incomes, then a change in $y*$ would entail a change in the transitional per capita income growth rate (expressed in percentage points) equal to the speed of convergence multiplied by the relative difference in steady states. In line with national accounts, estimates of population, capital stock depreciation and technological change growth rates as well as international evidence, the speed of convergence could approach 5 percent.

Three simulations are performed, corresponding to three different sets of reforms.

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[55] In real life, this offsetting mechanism does not exist, and other fiscal instruments must be used such as indirect or direct taxes. But this type of modeling is interesting from an analytical perspective as a net transfer to household is considered to be the less distortionary fiscal instrument. Hence the analysis of any given tax reform is not complicated by the effect of replacing it with another distortionary one.

[56] In the absence of any specific information on the source of imperfect competition, this modeling of imperfect competition *a la* Cournot is probably the appropriated one. It is a conservative assumption in the sense that it will underestimate the potential welfare gains stemming from output increases if economies of scale exist. At the same time, we are interested, from a policy perspective, to assess the impact of lifting anti-competitive regulation, and must therefore assume (which is plausible in Lebanon, see Section 1) that imperfect competition stems to some extent from regulatory barriers to entry.

[57] The Law of commercial representation in place since 1967 grants exclusive right of importing the following goods to a single import agency: clothes, shoes, electrical and electronic goods, cosmetics, jewelry, cars, furniture, fertilizers, construction materials, pharmaceutical products, oil products, machinery equipments, which constitute approximately one-third of imports and a major source of imperfect competition in Lebanon. Yet, we assume that, for a given group of product (10 different goods in the model, excluding services which are not imported), the markup applied on imports is similar to that applied on the comparable domestic goods. This assumption is consistent with the available information on concentration indexes, which lists the number of suppliers for each good - be it produced domestically or imported. This assumption is probably conservative in the sense that it potentially underestimates the welfare impact of reducing imperfect competition, for two reasons: first, because it underestimates the rent accruing to exporters to Lebanon (that would be eliminated with liberalization, hence relaxing the balance of payments constraints); second because the import supply response (assumed infinite) is larger than the domestic supply response, constrained by the availability of production factors.

A first simulation (SIM1), aimed at capturing the impact of structural fiscal reforms, assumes:

- An increase in government spending equivalent to 2 percent of GDP in 2005, to finance investments in the energy sector; 80 percent of this investment takes the form of imported capital goods;
- An exogenous reduction in the required intermediate consumption of energy to produce electricity allowing a 25 percent decrease in the producer price of electricity;
- The elimination of implicit consumer subsidies stemming from tariffs below marginal costs and illegal connections;
- Increased competition in the energy sector, with markups reduced by a third;
- A factor productivity gain equivalent to 1 percent of the output of manufacturing and private services sectors (resulting from improved electricity service);
- A 20 percent increase in government employees' productivity.

A second simulation (SIM2), aimed at capturing the impact of greater domestic competition, assumes:

- A 33 percent decline in all sectors markups;
- Increased capital mobility.[58]

A third simulation (SIM3), aimed at capturing the impact of tax harmonization, assumes:

- A removal of import tariffs, leaving untouched excise taxes;
- An effective ad valorem flat tax on final consumption of 7 percent.

A fourth simulation (SIM4) combines the elements of the three previous ones. The main results of these various simulations are reported in the next table, in comparison with the benchmark situation in 2005.

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Table 6. Simulations Results.

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	Benchmark	SIM1	SIM2	SIM3	SIM4
Long term growth (%)	**3.0**	**3.4**	**3.6**	**3.4**	**4.6**
Exports of goods and services (% of GDP)	20.8	22.2	22.0	24.7	28.2
Imports of goods and services (% of GDP)	41.7	40.4	41.9	44.0	44.0
Government consumption (% of GDP)	15.8	14.7	14.2	14.7	12.0
Private consumption (% of GDP)	85.1	83.0	84.7	83.6	80.9
Gross Domestic investment (% of GDP)	20.0	20.5	21.0	21.0	22.8
Real wages (index 2005=1.0)	1.00	1.03	1.13	1.06	1.25
Labor force participation (%)	45.4	46.0	48.1	46.8	50.8

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Source: Author's calculations

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[58] Worth noticing that in CGE modeling a variation in the degree of capital mobility has an impact on the equilibrium only if associated with another policy change. Indeed, in the absence of sector-specific information on capital stocks, we assume in the calibration process that the remuneration of capital is similar across sectors – hence that marginal productivities of capital are initially equalized across sectors. This explains in the simulations the little impact of modifying the degree of capital mobility. In simulation 2 for instance, reducing mark-ups without increasing capital mobility would reduce the long term GDP growth rate by no more than 0.1 percentage point. Though, mark-ups over marginal costs actually already capture to a large extent the difference in capital remuneration across sectors.

Annex 2. Estimated National Accounts Data, 1993-2005.

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
						LBP Billions, Current Prices							
Gross Domestic Product	13,829	16,127	19,001	21,513	24,008	25,638	25,647	25,143	25,726	27,832	30,126	32,963	33,622
Exports of goods and services	1,269	1,269	2,053	2,764	3,329	3,327	3,413	3,409	3,887	4,413	5,649	6,770	6,981
Imports of goods and services	9,290	10,064	11,843	11,886	11,533	10,699	9,617	9,323	10,554	10,053	11,138	14,518	14,019
Government consumption	1,840	2,467	2,765	3,344	3,958	4,026	4,337	4,428	4,536	4,805	4,571	4,935	5,309
Private consumption	16,419	17,361	20,000	20,666	21,169	21,558	21,584	21,521	21,934	23,549	24,924	28,769	28,614
Gross Domestic investment	3,592	5,095	6,026	6,625	7,085	7,426	5,930	5,108	5,923	5,118	6,122	7,008	6,737
						LBP Billions, Constant Prices							
Gross Domestic Product	20,503	22,157	23,605	24,541	25,203	25,958	25,761	25,986	27,118	27,832	29,199	31,045	31,356
Exports of goods and services	1,368	1,369	2,038	2,773	2,939	3,030	3,204	3,255	3,863	4,413	5,182	5,595	5,564
Imports of goods and services	10,002	10,835	11,746	12,091	9,366	9,487	8,891	8,444	10,218	10,053	10,218	11,683	10,879
Government consumption	2,454	3,130	3,199	3,696	3,942	4,023	4,344	4,434	4,558	4,805	4,400	4,540	4,816
Private consumption	21,894	22,029	23,141	22,841	21,509	21,949	21,849	21,906	22,965	23,549	23,995	26,464	25,959
Gross Domestic investment	4,790	6,464	6,972	7,322	6,180	6,444	5,255	4,835	5,950	5,118	5,775	6,121	5,773
Exchange rate LBP: US$	1741.4	1680.1	1621.4	1570.9	1539.2	1515.9	1507.8	1507.5	1507.5	1507.5	1507.5	1507.5	1507.5

Source: Authors' calculations.