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INDUSTRIAL JOB CREATION

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Office of the Minister of State for Administrative Reform
Center for Public Sector Projects and Studies
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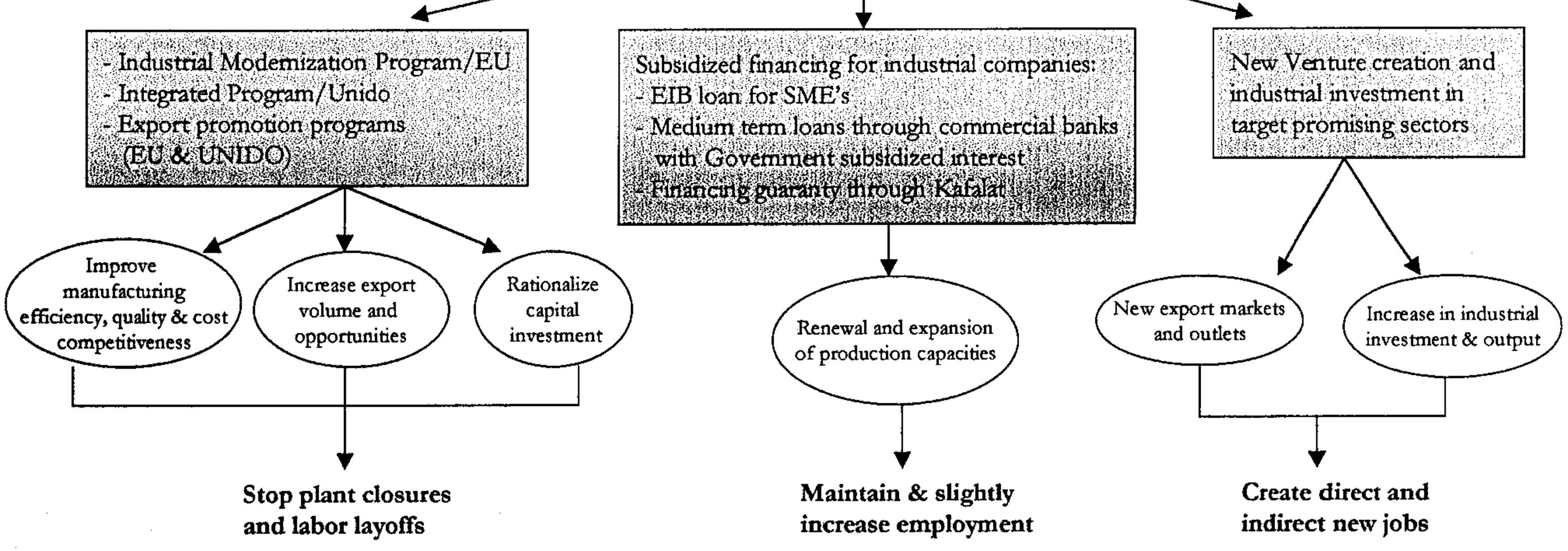
A. QUANTITATIVE ANALYSIS

1. GENERAL SYNOPSIS

Reminder:

Goals of the Ministry of Industry
1- Industrial output to rise 15% annually
2- Industry's share of GDP to exceed 20%
3- Double volume of industrial exports from $700 million to $1.4 billion
4- Addition of 50,000 new jobs in the initial phase

Master Plan includes three components that have direct impact on growth of industrial output
Time Span: 4 to 5 years starting 1/1/2001



2. ANALYSIS & COMPUTATION OF JOB CREATION OPPORTUNITIES

2.1 Approach 1: Dollar investment per job created

Year	Investment (in millions LL)	New Job Opportunities	Ratio Investment over Job Created
1994	78,721	3,526	22.33
1995	95,797	3,451	27.76
1996	99,969	3,414	29.28
1997	115,341	4,414	26.13
1998	192,908	3,654	52.79
1999	128,193	3,886	32.99
2000	104,796	3,762	27.86
2001*	98,008	4,044	24.23
TOTAL	**913,733**	**30,151**	**30.30**

* Annualized figures based on actual first six months of the year.

Analysis:

- Above table shows that for every 30.3 millions LL invested in a new industrial venture, there is one job created i.e. about $20,000/job.

- Per MOI's registered statistics of imported industrial equipment and machinery for the first 5 months of the year, the total amount of these imports reached $44.64. This represents an annualized figure of $107.14 million.

- According to the findings of the industrial survey done by GTZ and MOI, machinery represents 50.6% of total invested amount while land and buildings represent 23.8% with the balance going for vehicles, office equipment, furnitures and fixtures, other assets,.... Thus, an import of $107.14 million in machinery would typically reflect a total investment figure of about $212 million per year. While the average yearly investment for the period 1994 to 2001 (annualized first half) in new industrial ventures is $77 million, the balance of $135 million would be for modernization or expansion of existing plants.

- The $77 million investment in new industrial ventures will generate: (each $20,000 create 1 job)

  77,000,000 ÷ 20,000 = 3850 new jobs

  The $135 million investment for modernization and expansion of existing ventures will generate:

  135,000,000 ÷ 30,000[1] = 4500 incremental jobs

  Thus, total jobs created/year based on 2001 figures:

  3850 + 4500 = 8350

- Assuming a 7.5%[2] yearly growth in industrial output, the cumulative number of jobs created during the period 2001 to 2005 would amount to 48500 created jobs, not accounting for any extra jobs that would be created by new ventures in promising high growth, export oriented sectors.

Footnotes:

(1) The ratio of $30,000 per added job is higher than the one for new ventures because part of the capital investment in existing industrial companies goes for replacement of depreciated machinery and hence, does not have any impact on employment.

(2) The assumed 7.5% growth rate is reasonable and even conservative especially that it combines the GDP growth rate for the overall economy with the intrinsic growth rate of industrial output due to underway programs aimed at enhancing competitiveness, expansion and coverage of export markets.

2.2 Approach 2: Employment growth in existing and new ventures

	2001	2002	2003	2004	2005
Estimated GDP Growth	3.0%	3.5%	4.0%	4.5%	5.0%
Increase (decrease) in jobs generated by existing industrial companies[1]	3450	4146	4904	5737	6662
Jobs created by new industrial ventures[2]	4044	4186	4353	4549	4776
Total	**7494**	**8332**	**9257**	**10286**	**11438**
Cumulative Total	**-**	**15826**	**25083**	**35369**	**46807**

Footnotes:

(1) Assuming employment growth follows closely GDP growth and starting employment level at end 2000 is 115000.

(2) According to Ministry of Industry statistics for the first half of 2001, there would be 2022 jobs created by new industrial ventures as per applications filed with the Ministry. We assume same trend to continue for remainder of the year and then to grow at same rate of GDP's.

2.3 Comments

We believe that basic assumptions adopted in both approaches are conservative. Assuming the government's economic option for a sustained growth scenario is maintained for the next four years, we are confident that the stated goals for jobs' addition will be reached and most likely surpassed in light of following considerations:

1. The starting industrial employment figure of 115000 at end 2000 is low due to underreporting of the number of permanent employees in official surveys. Moreover, seasonal and part of foreign labor are not included in the total employment figure though they amount to 35% of it.

2. Industrial output was 12.9% of total GDP in 1992 and then it decreased to 9.5% in 2000. The two computation methods adopted do not account for the potential acceleration in industrial output to reach the 1992 percentage level (as % of GDP) or even exceed it. Factors that favor an acceleration scenario in industrial output:

   2.1 Substantial increase in long-term subsidized loans to industrial outfits.
   2.2 Implementation of different industrial modernization and competitive enhancement programs.
   2.3 Initiated momentum to create new ventures in targeted promising sectors.
   2.4 Drastic improvement in import of industrial machinery.

3. Likelihood of higher GDP growth rates than those considered in the study.

4. Capital formation of $212 million/year was identified as adequate to reach the job creation objective. This figure was derived from the official data on imported industrial machinery as reported to the customs' authorities. The actual total investment in industrial equipment is higher after adding local purchase of machinery and accounting for total real cost after installation. Hence, capital formation is greater than $212 million. The Industry survey issued by GTZ and MOI puts total industrial investment at $373.4 million in 1998.

5. With the reduction of 15% in Social Security dues, the shift from permanent national labor towards temporary labor will be halted or even reversed.

2.4 Conclusion

The stated goal of 50000 new jobs to be created during the next 4 to 5 years in the industrial sector is reasonable and attainable.

Finally, it is appropriate to quote a statement from the minutes of a French Senate session on May 28th, 1998:

Quote: *Les analyses économiques s'accordent pour affirmer que le secteur industriel est essentiel au maintien global de l'emploi: « **un emploi créé dans l'industrie, c'est au moins deux emplois créés dans les services** » dit-on et l'on ne peut raisonnablement espérer constituer une économie puissante sans qu'elle s'appuie sur un socle industriel fort.* Unquote

B. STRATEGIC APPROACH ON

JOB CREATION DYNAMICS

1. Main Assumptions and Data

Sources:

- Arthur D. Little report on Lebanese industrial potential and promising sectors (October 1996).
- GTZ/Ministry of Industry report on Industry in Lebanon (1998-1999).

1.1 The growth rate of the industrial sector is expected to be higher than GDP's over the next 10 years.

1.2 Consequently, the industrial sector's contribution to the GDP will increase slowly to reach 20% after 10 years.

1.3 Assuming a growth of 6 to 8% per year for the industrial sector, Arthur D. Little study estimates the additional labor requirements at an average of 14,000 new jobs per year.

1.4 Per Arthur D. Little study, it is assumed that an investment of $50,000 is required to create a growth related job in factories and $10,000 per job in workshops.

1.5 The average annual cost per employee is estimated at **$7,325**.

1.6 The ratio of value added to output was 43.2% in 1998.

1.7 Average value added per worker is estimated at **$14,960**.

1.8 Industrial investment is composed of 51% machinery and about 25% in land and buildings. The balance would be in vehicles, office equipment, EDP and other assets.

2. Strategic Analysis

2.1 Potential for growth related job creation would be 108,000 new jobs in 10 years i.e. an average of **10,800 new jobs per year**. The weighted average investment needed to create one of these jobs would be **$20,370**.
(yearly new investment $220 million ÷ 10,800 new jobs)

2.2 Additional job opportunities would arise from attrition which is assumed at 3% of total labor force. Consequently, about **4,500 new jobs** will be available to sustain existing level of operation. However, the maintenance of business activity assumes replacement of assets on a regular basis requiring thus, an investment of **$28,900** per additional worker.
(yearly new investment $130 million ÷ 4,500 new jobs)

2.3 Combining growth related with attrition related new jobs yields the following:

- Required total capital investment: **$350 million/year**.
- Potential for new employment: **15,300 new jobs**.
- Weighted average investment required per new job: **$21,570**.

2.4 If we assume conservatively that net profit in a typical average industry is about 5% of total cost and given a value added ratio of 43.2%, then net profit would stand at 11.6% of value added. As value added per worker is $14,960, one worker would generate **$1,735** of profit per year. The average total cost per worker, being $7,325, then the financial return from investing in one new job would be a **healthy 23.7%**. Consequently, the Lebanese labor market and the economics of industrial investment are still attractive assuming the value added per worker is around $14,960 and the total yearly cost per worker is around $7,325.

2.5 Any improvement in competitiveness implies an increase in productivity and hence an increase in the value added ratio. Assuming that total labor cost will increase less than the productivity gain, we can predict that industrial competitvity, while presently attractive, could be enhanced further.

3. STRATEGIC FINDINGS AND CONSIDERATIONS

3.1 INDUSTRIAL EMPLOYMENT FOLLOWS CLOSELY THE GDP GROWTH AND HAS POTENTIAL TO EXPAND FASTER THAN THE GDP PACE IN THE COMING 10 YEARS.

3.2 INVESTMENT IN CAPITAL OR FIXED ASSETS TO CREATE ONE NEW JOB IS MODERATE AND FINANCIALLY ATTRACTIVE. SUBSEQUENTLY, INDUSTRIAL DEVELOPMENT WOULD BE ONE OF THE MOST APPROPRIATE VEHICLES FOR JOB CREATION AND ACCELERATION OF GDP GROWTH.

3.3 MAINTAINING OR IMPROVING ON PRESENT PRODUCTIVITY LEVELS (AS EXPRESSED BY VALUE ADDED GENERATED PER WORKER AND IN RELATION WITH THE WORKER'S TOTAL COST) WOULD ENCOURAGE INVESTORS IN THE INDUSTRIAL SECTOR BECAUSE OF:

- POTENTIAL HEALTHY RETURNS
- EXISTENCE OF AMPLE ROOM FOR IMPROVEMENT PROVIDED INFLATION REMAINS TAMED.

C. Critique & Analysis of Capital Cost/ Job Ratio

Reference: UNIDO paper dated July 23,2001

1. Main Data

- In a typical manufacturing operation the average ratio of:

Net Fixed Assets/Employee is around **$34,004.**
However, this ratio varies considerably between industries.
In the leather & tanning industry it is $12,481 while in non-metallic industry it goes up to $56,277.

Additional fixed assets investment/Year/Employee is **$3,272.**
However it varies between $133 for wood products and $5,978 for non-metallic products.

2. General Findings

Assumption: new jobs require the same amount of capital as existing jobs.

Fixed Assets/Worker=$34,004 implying that on average one additional permanent manufacturing job requires an investment of $34,004 in fixed assets.

Comment: we question above assumption because we believe, from practical experience in the manufacturing sector, that the amount of incremental investment to create a new job is usually less than the total accumulated fixed assets per existing job.

3. Limitations

- There are many factors besides the size of fixed assets that affect hiring decisions in the short-run.
- This ratio has very different values for various sectors.
- The evaluation of incremental investment in fixed assets required to trigger employment is not accurate and its magnitude fluctuates depending on:
  - Nature of manufactured product
  - Product lifecycle
  - Degree of technology intensity
  - Type of distribution: automated Vs man-power based
  - Production cycle:
    - Integrated manufacturing process
    - Partial subcontracting
    - Outsourcing
  - Percentage of value-added in total cost

4. Indirect jobs created from incremental industrial investment

- New job creation in the industrial sector yields indirect increase in employment in other sectors.
- Effectively, an increase in industrial activity triggers business improvement and hence employment in the following sectors:
  - Packing & packaging
  - Promotion & distribution
  - Advertising
  - Transportation & shipment
  - Raw material & other materials' trading
  - Subcontracted or outsourced services:
    - Data processing
    - External auditing
    - Specialized maintenance works
    - Customs clearing services
    - Financial & banking services

5. Excerpts on Industry

- "A country cannot be separated from its industrial strength. There is no great nation without powerful industry".

  ■ **Jacques CHIRAC**

- **"A job created in industry creates at least two jobs in services".**
- "Improving industry implies economic growth and employment. Do not exchange industrial jobs with services jobs because there are no services without industry".

  ■ **Raymond LEVY** (former chairman of Renault)

-D-

واقـع البطـالــة وسبــل معـالجتهــا

المطلـوب:

- تحقيق نمو حقيقي في الناتج القومي بين ٢ و ٢،٥٪ لاستيعاب الداخلين إلى سوق العمل سنويا"، و٤٪ لاستيعاب وامتصاص الفائض المتراكم من العاطلين عن العمل.
- ترشيد استخدام العمالة الأجنبية.

واقـع البطـالــة وسبــل معـالجتهــا

- تختلف توقعات نسب البطالة بحسب مصادرها، بين ١٥٪ حدا" أدنى إلـى ٤٠٪ حـدا" أقصـى للعـام ٢٠٠٠، مـع العلـم بـأن وزيـر العمـل السابق الدكتور ميشـال موسـى، أعلن فـي العام نفسه أن النسبة بلغت ٢٥٪ في بعض الحالات.

- من الواضـح أن ارتفـاع النسبة وانخفاضها مرتبطان بنسبة نمو الناتج المحلي.

- عـام ٢٠٠٠، ونظـرا" إلـى الـركود الاقتصـادي خلال ١٩٩٨، ١٩٩٩ و ٢٠٠٠، **نقدر نسبة البطالة بمـا لا يقل عن ٢٠٪ فـي آخر العـام ٢٠٠٠**.

- باعتبار عـدد سـكان لبـنان مـن اللبنانييـن ٣,١ ملـيون نسـمة: **نسـبة الفاعلين اقتصـاديا" فـي سـوق العمـل نحـو ٣٢٪، أي نحـو ملـيون نسمة، فيكون عدد العاطلين عن العمل ٢٠٠ ألف لبنـاني مقيم.**

- **نسبة الزيادة الصافية للقوة العاملة خلال الأعوام العشرة المقبلة تقدر بنحو ٢٧ ألف عامل سنويا.** ولاستيعاب هذا العدد من الداخلين إلى سوق العمل، **ينبغي تحقيق نمو حقيقي في الناتج القومي** يتراوح **بين** ٢ و ٢,٥٪. وإذا أردنا **خفض نسبة البطالة السابقة المتراكمة، وامتصاص الفائض** في هذه النسبة لتصل إلى حدود ١٠٪ بعد عشرة أعوام، **ينبغي استحداث نحو ١٠ آلاف فرصة عمل جديدة سنويا"، فيكون مجموع العدد الإجمالي لفرص العمل المطلوب توفيرها سنويا" لاستيعاب الداخلين حديثا" إلى سوق العمل وامتصاص قسم من فائض العاطلين، هو ٣٧ ألف فرصة عمل، مما يستوجب نسبة نمو في الناتج القومي المحلي تتعدى الـ ٤٪ سنويا.**

- أما إذا فاقت نسبة النمو الـ٤٪ كما حدث في الأعوام ١٩٩٣ إلى ١٩٩٧، فيمكن استيعاب نسبة أكبر وبسرعة أكبر للفائض في العاطلين عن العمل. كما **يمكن استيعاب جزء من هذا الفائض، بترشيد استخدام العمالة الأجنبية** التي يتراوح حجمها بين ٣٠٠ ألف حدا" أدنى إلى ١,٢ مليون حدا" أقصى.
- نسبة البطالة لدى الجامعيين المتخرجين ٣٤٪.
- نسبة البطالة لدى المهندسين المنتسبين إلى النقابة ٢٣٪.
- هناك ٥٠ ألف طفل وولد بين ١٠ و ١٥ عاما" من العمر يعملون في لبنان.
- معدل نمو السكان الصافي في لبنان هو ١,٥٪ بينما معدل نمو القوى العاملة سيبلغ ٢,٣٪ سنويا"، بسبب بلوغ نسبة أكبر من السكان سن العمل (Baby Boom)، وزيادة أكبر في نسبة عمل النساء.

-E-

نزف الهجرة من العام ١٩٧٥ إلى العام ٢٠٠٠

الواقـــع:

- حجم الهجرة مرتبط بالوضع الاقتصادي، ويبلغ أعلى معدلاته اليوم.

- أكثرية المهاجرين من الطاقات الفتية والمنتجة.

الجمهورية اللبنانية
مكتب وزير الدولة لشؤون التنمية الإدارية
مركز مشاريع ودراسات القطاع العام

نزف الهجرة من العام ١٩٧٥ إلى العام ٢٠٠٠

- تتباين المعلومات عن تفاقم الهجرة بحسب مصادرها. إنما بعد مراجعة المصادر المختلفة، يتبين لنا أن الهجرة المتراكمة **من العام ١٩٩١ إلى العام ٢٠٠٠** ضمنا" بلغت نحو ١,٤ مليون لبناني بموجب تحليل حركة دخول اللبنانيين وخروجهم، وان **المعدل السنوي للهجرة هو في حدود ١٤٠ ألف مهاجر**. وهذا العدد ينقص ويزيد تبعا" للوضع الاقتصادي للسنة المعنية. والإحصاءات واضحة هنا بربط حجم الهجرة بالوضع الاقتصادي.

- أما خلال الحرب **(١٩٧٥ إلى ١٩٩٠)** واستنادا" إلى المصادر وطريقة التحليل نفسها، فقد **هاجر** نحو ٩٠٠ ألف لبناني، أي **نحو ٥٦ ألفا" سنويا**.

- في الفترة **بين ١٩٩٠ و ١٩٩٤**، تراجعت نسبة الهجرة السنوية إلى **٤٨ ألف شخص متوسطا" سنويا"**، بفعل التفاؤل بنهاية الحرب ونمو الوضع الاقتصادي.

- لكن، عندما تباطأ هذا النمو **بعد العام ١٩٩٦**، ارتفعت وتيرة **الهجرة** إلى مستوى يتراوح **بين ١٥٠ و ٢٧٠ ألف شخص سنويا**. وهو مستوى لم يعرفه لبنان في أحلك أيام الحرب.

- من الملاحظ أن ٥٥٪ من المهاجرين ذكور مقابل ٤٥٪ من الإناث، مما يؤدي إلى اختلال في توازن الجنسين.

- تبلغ نسبة المهاجرين بين ٢٠ و ٤٠ عاما" نحو ٤٤٪ من إجمالي المهاجرين. وهذا نزف خطير في القدرات الإنتاجية. والنسبة بين ١٠ و ٥٠ عاما" نحو ٧٤٪، أي أن **المهاجرين هم بأكثريتهم من الطاقات الفتية والمنتجة**.

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