February 2004
IMF Country Report No. 04/31

Algeria: Selected Issues and Statistical Appendix

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Washington, D.C.

INTERNATIONAL MONETARY FUND

ALGERIA

Selected Issues and Statistical Appendix

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Approved by the Middle East and Central Asia Department

December 16, 2003

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I. Overview

1. **Algeria is still on the way to complete its transition to a diversified market economy driven by private sector-led growth.** The country's main challenges are to shift the economy to a higher sustainable growth path, to maintain macroeconomic stability in the context of a volatile market environment, and to reduce unemployment and poverty.

2. **The country remains heavily dependent on the hydrocarbon sector and still maintains a sizable and inefficient state-owned enterprise sector.** Neither of these sectors offers significant opportunities for future employment growth. Furthermore, both sectors can be sources of fiscal vulnerabilities and potential macroeconomic instability, albeit in different ways: The reliance on the hydrocarbon industry leads to volatile government revenues stocks as a result of large swings in oil prices and complicates liquidity management, while the continued financial support to large loss-making state-owned enterprises through public banks leads to the build-up of sizable quasi-fiscal deficits and has been a major factor of the fragility and underdevelopment of the Algerian banking system.

3. **Against this background, the following chapters address two different issues with important implications for macroeconomic stability in Algeria:** (a) the substitution of explicit budgetary support for directed credit to large loss-making public enterprises as a precondition for banking sector reform; and (b) the explanation of price movements in the context of the volatile behavior of money supply.

4. **Chapter II proposes the replacement of directed credit to large loss-making public enterprises with temporary and explicit budget subsidies in the context of a well-defined restructuring program.** Removing from public banks the burden of being the financier of last resort for large loss-making enterprises would facilitate banking reform, increase transparency of fiscal policy, improve governance, and provide an incentive for subsequent public enterprise restructuring.

5. **Chapter III identifies both monetary and real factors as determinants of inflation in Algeria.** It also sheds light on the recent phenomenon of continued price stability in the context of excess liquidity in the Algerian banking system and strong money growth fueled by high hydrocarbon revenues. The analysis stresses the need to conduct a prudent monetary policy on a sustained basis in order to avoid a future pickup in inflation, and recommends close monitoring of currency in circulation and M1 as the most important policy variables. It also points to the importance of returning to a less expansionary fiscal policy stance and the usefulness of policies improving total factor productivity as supporting measures to maintain price stability.

II. Replacing Bank Credit to Loss-Making Public Enterprises with Temporary Budget Subsidies in the Context of a Restructuring Program[1]

The main objective of this proposal is to remove from public banks the burden of being the financier of last resort for some large loss-making enterprises in order to facilitate the privatization of public banks and the implementation of banking reform. Freeing public banks from their quasi-fiscal activities will at the same time increase transparency of fiscal policy, improve governance, and provide an incentive for subsequent public enterprise restructuring).[2]

A. Overview

6. **After more than ten years into the economic transition process to a market economy, Algeria still maintains a sizable and inefficient state-owned enterprise sector. Continued financial support to public enterprises through directed credit has been the main factor of the fragility of the Algerian banking system.**[3] Large loss-making public enterprises have been resistant to productivity enhancing reforms. Furthermore, the needs of state-owned enterprises for credit have reduced, everything being the same, limited financial resources available for private sector development. Repeated attempts at public enterprise restructuring as well as several bailouts and recapitalizations of public banks posed a growing financial burden on government finances. The fiscal costs of the current system are disguised by the implicit nature of public enterprise support through the quasi-fiscal activities of public banks. This lack of transparency obstructs an accurate evaluation of the problem's magnitude, perpetuates soft budget constraints facing public enterprises, impedes effective public enterprise reform, and, more importantly, hinders the development of a sound, growth-enhancing financial system.

7. **Reforms at the enterprise level have proved to be inherently more difficult than macroeconomic reforms**, such as price and trade liberalization. This is particularly the case given that numerous state-owned enterprises may not be viable under internationally competitive conditions.[4] Restructuring takes time, so that the option of temporary financial support to these enterprises should not be outright rejected. To reduce the political and social costs of adjustment, the budget constraints facing public enterprises should be hardened gradually.[5]

8. **Removing from public banks the burden of being the financier of last resort for some large loss making-enterprises would be a crucial step to facilitate the implementation of banking reform and free financial resources for allocation to the**

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[1] Prepared by Holger Flörkemeier (ext. 38322), who is available to answer questions.
[2] Public enterprise restructuring per se is not discussed in this note.
[3] Smaller public enterprises generally face a harder budget constraint than the large loss-making companies.
[4] Dhar, S., 1992; Algeria FSAP Main Report, 2003..
[5] Kornai, J., 1998; Battacharya, R. 1999.

emerging private sector.[6] In order to also increase transparency, and provide time to absorb the social costs of adjustment, IMF staff proposes the replacement of directed bank credit to loss-making public enterprises with temporary and explicit budget subsidies in the context of a restructuring program. This process must be transparent, credible, and follow a pre-announced action plan for phasing out subsidies over time. During the transition phase, commercial bank lending to public enterprises, as well as inter-enterprise credit, should be strictly controlled. Fiscal transparency would make a major contribution to the cause of good governance. It would increase the pressure on firms to improve efficiency, foster closer government supervision of the firm's activities, and lead to a better-informed public debate about the need of reforms, as well as to enhanced public acceptance of such reform.

B. The Development of the Current System

9. **During the first decades following independence, Algeria pursued a socialist growth model based on centralized planning and reliance on state-owned enterprises** (SOE) to deal with externalities, natural monopolies, regional development, and vulnerability of the economy to external shocks. This model, in the context of abundant hydrocarbon revenues accruing to the state, initially generated a rapid rise in production and employment. However, by the late 1980s, this policy stance showed its limitations. Most public companies were then heavily undercapitalized and incurred continuing and increasing losses. They suffered from inefficient resource and capacity utilization, excessive capital intensity, increasingly obsolete technologies, inadequate management, and lack of ownership and governance. The state-owned enterprises' losses imposed a growing burden on public finances.

10. **Several attempts were made in the 1990s to restructure the public enterprise sector in the context of Algeria's transition to a market-oriented private sector-led economy.**[7] The initial strategy of comprehensive restructuring and financial rehabilitation of public enterprises, combined with partial market liberalization, proved to be costly and ineffective. In the mid-1990s, the Algerian authorities then embarked on a new strategy that was geared toward privatization and financial sector development. While considerable advancement was reached with regard to the group of small local public enterprises (EPLs), success has been limited until now, in terms of confronting the restructuring needs of, or privatizing, the large public companies (EPEs), with the exception of the construction and steel sectors. While some initial progress had been achieved with the grouping of EPEs in sectoral holdings and the introduction of the bank-enterprise mechanism in 1996, restructuring and privatization efforts slowed down considerably after the end of the Fund-supported program in spring 1998.

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[6] IMF 2001; Tanzi, V., 1992; Dhar, S. 1992; Battacharya, R., 1999.
[7] Nashashibi, K. et al., 1998.

11. **Algerian public banks continue to finance the deficits of inefficient and loss-making state-owned enterprises by providing credit under noncommercial conditions.** Some public enterprises appear being considered "too big to fail" and have more or less unlimited access to loans to cover operating losses. When public banks lend money to persistently loss-making enterprises which are unlikely to pay back, they are performing essentially a fiscal function.[8] Consequently, nonperforming claims of public banks have been repeatedly assumed by the treasury to preserve public banks' solvability. IMF staff estimates that quasi-fiscal expenditures of that nature amount on average to a minimum of US$500 million (1 percent of GDP) each year.

C. Effects of the Current System

12. **The current practice has severe effects on the management of public enterprises, undermining their financial discipline.** Soft bank credits create soft budget constraints which negatively affect state-owned firms' allocative and operational efficiency as well as their dynamic adjustment capabilities. Incentive forces are disabled, inefficiencies conserved, painful restructuring measures postponed. Enterprises are insufficiently motivated to avoid losses by raising efficiency. Management resources are being distracted from enterprise restructuring to lobbying and rent-seeking activities.[9]

13. **Directed bank credit serves as a transparency-reducing quasi-fiscal instrument.** Loans from public banks to loss-making state-owned enterprises frequently become nonperforming, and are later taken over by the treasury. Technically, these loans are fiscal subsidies. By being made through the banking system, they do not directly affect the fiscal deficit and, thus, distort the fiscal accounts and disguise the actual fiscal policy stance. The quasi-fiscal activities of the state banks also create increasing contingent liabilities. The size and timing of their impact on the cash income position of the treasury is highly uncertain, which makes them especially difficult to monitor and control. The macroeconomic effects of directed bank credits (higher public expenditure in the medium term, negative implications on inflation and interest rates) are thus both hidden and delayed.[10] Hence, it is important to note that even in the current situation (with directed credit), the government is, in principal, footing the cost of financing the loss-making public enterprises.

14. **The continued financial support to loss-making public enterprises has been the main factor of banking system fragility in Algeria.** The accumulation of bad loans implies that it is difficult to assess the real value of the banks' capital assets, as well as their profitability and basic soundness.[11] Among other things, this has a negative effect on the privatization prospects of public banks.

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[8] Tanzi, V., 1992.
[9] Kornai, J. 1986, 1998, 2001.
[10] Tanzi, V., 1992; Polackova, H., 1999; Mackenzie, G. and P. Stella, 1996.
[11] Tanzi, V., 1992.

15. **To the extent that lending to public enterprises absorbs much of the financial funds available, new private enterprises face greater difficulties and higher costs in getting credit.**[12] Entry of new firms and the development of a dynamic private sector is impeded by the disproportionate share of bank credit being allocated as refinancing to the state-owned incumbents. Commercial banks behave generally passively with regard to changing the persisting loan allocation. This lender passivity can be due to lack of experience in risk management as well as insufficient information about the quality of new investment projects, or it can be explained by lack of financial resources (undercapitalization). As a consequence, refinancing of old loans crowds out new finance, giving rise to credit crunches on new loans.[13]

D. Changing the Incentive System

16. **Implementing successful and sustainable reforms in the Algerian banking and state-owned enterprise sectors requires changing the incentives of all economic agents involved.** The government has to commit credibly to impose hard budget constraints on public enterprises. Public banks must be encouraged to enforce existing debt contracts as well as to discontinue refinancing unprofitable investments of state-owned enterprises and instead allocate credit resources to promising projects initiated by the private sector. Managers of loss-making public companies, finally, must be persuaded to tackle in depth enterprise restructuring instead of lobbying for a continuation of subsidies and speculating for bailouts by commercial banks or the government.

17. **Strong political will in favor of change is a precondition for successful banking and state-owned enterprise sector reform.**[14] The government faces a trade-off between long-run efficiency gains and immediate adjustment costs in terms of production, job and security losses, as well as political resistance. In addition, the state has to deal with the legacy of central planning: Because the state was responsible for past decisions and failures, public enterprises can now bargain for compensation in form of continued financial support.[15] Furthermore, close relationships between commercial banks and the government may also cause soft budget constraints, when banks exploit the 'softness' of the 'paternalistic' government, refinancing unprofitable or high risk loans in a gamble for a collective bailout.[16] This problem is not restricted to lending to state-owned enterprises, and emphasizes the great importance of well-designed banking sector reform.

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[12] Although there is currently excess systemic liquidity, in a situation of exceptionally high oil prices, it is concentrated in the public bank that holds the account of the state oil and gas company. See Algeria FSAP Main Report 2003. Due to the high volatility of hydrocarbon export earnings and the expectation of lower oil prices in the medium term, the possibility of private sector crowding out can, however, not be ruled out.

[13] Berglöf, E. and G. Roland, 1997; Bregg, D. and R. Portes, 1993; Tanzi, V. 1992; Lizal, L. and J. Svejnar, 2002.

[14] Kornai, J. 1996; Maskin, E. and C. Xu, 2001.

[15] Lin, J. and G. Tan, 1999; Bai, C. and Y. Wang, 1997.

[16] Berglöf, E. and G. Roland, 1998; Schaffer, M., 1998; Stiglitz, J., 1994.

18. **To commit credibly to hardening public enterprises' budget constraints, the government needs to build a reputation for toughness by sticking to preannounced support limits and ensuring transparency by full publicity and public scrutiny.** Privatization of state-owned enterprises is the most powerful commitment device by government to cut back financial support.[17] As a first step, the greater transparency of explicit budget subsidies, and the need to consider all subsidy claims simultaneously in framing budget projections, is likely to stiffen fiscal resistance compared with a situation in which individual credit deals can be done with public banks in circumstances which are much harder to monitor.[18]

19. **Commercial banks may have strong incentives not to enforce debt contracts.** The costs of enforcing bankruptcy can be high, or there may be some option value in waiting, which would justify rescheduling of nonperforming loans. Also, taking action against debtors may signal solvency problems due to high bad loan exposure. Furthermore, the higher the share of nonperforming loans in the banking system, the higher is the temptation to gamble for a general government bailout.[19] Finally, because of the existence of sunken costs, projects that turn out to have been ex ante unprofitable, may still be refinanced and completed because they are ex post profitable.[20] In the latter case, a decentralization of credit (multi-party financing) can discourage refinancing of credit. Promoting investment by banks in screening and monitoring technology is a promising instrument to curb creditor passivity, since banks can improve the relative profitability of potential new lending by screening and monitoring firms. Alternatively, increasing capital requirements raises the cost of funds to banks, making it less attractive for them to refinance bad loans. The authorities can also increase the costs of passivity by engaging in closer monitoring of bank behavior. Finally, if the lack of a functioning market for liquidated assets limits financing based on collateral, the government could replicate collateral by providing partial loan guarantees—which would increase liquidation values and thus the credibility of the creditor's threat to foreclose.[21]

20. **Public enterprises usually have multiple principals, multiple objectives, and operate under a number of variable constraints. This regularly causes distorted incentives for managers due to information asymmetries, moral hazard, and significant benefits associated with managerial control rights**. Corrective measures should aim at

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[17] Maskin, E. and C. Xu, 2001; Kornai, J., 2001. The devolution of fiscal authority from central to local government (fiscal federalism), as well as the upward devolution of domestic economic policies to supranational authorities (e.g. WTO or EU association agreement) have been discussed as other possible instruments to harden budget constraints. Maskin, E., 1999; Bertero, E. and L. Rondi, 2002.

[18] Bregg, D. and R. Portes, 1993.

[19] Schaffer, M. 1998; Kornai, J., 1996; Bregg, D. and R. Portes, 1993. This includes non-performing loans both to public and private enterprises.

[20] It may be ex post optimal for the bank to refinance a loan instead of liquidating the borrower's activity since any prior funds invested in the enterprise are sunk costs, and hence irrelevant for any further profitability considerations; Dewatripont, M. and E. Maskin, 1995.

[21] Berglöf, E. and G. Roland, 1997; Berglöf, E. and G. Roland, 1998; Maskin, E., 1999.

(a) reducing managers' information advantages, (b) improving incentives by specifying and enforcing rewards and penalties, and (c) proving commitment on the part of the government to public enterprise reform. The problem of information asymmetries can be best tackled by introducing competition and improving transparency (e.g., making explicit subsidies or monitoring firm behavior). Rewards and penalties include bonus schemes, contracting fees, price adjustments, conditional transfers etc. To ensure commitment, performance goals, rewards, penalties, and government actions should be stated clearly in contracts between the government and the management of public enterprises.[22]

E. Implementing Reform

21. **Replacing the current practice of directed bank credit to loss-making public enterprises with explicit budget subsidies requires a careful case-by-case approach.** With the bulk of nonperforming loans being concentrated within a small group of problem cases, the program should focus on the large loss-making public enterprises.[23] In the view of limited administrative capacities, smaller beneficiaries are not addressed in this framework. Public banks could deal with these debtors themselves. Therefore, program implementation should start with the identification of the public enterprises which take the greatest share of credit. This could be accomplished by an auditing of public bank loan portfolios, preferably by independent auditors.

22. **Public enterprise accounts and operations should be analyzed to take stock of the extent of their current implicit subsidization.** The authorities might want to consider technical assistance needs in this regard. Independent auditing of public enterprises should be ensured. When estimating the amount of implicit subsidies comprised in nonperforming bank loans, both market interest rates and the value of retrievable collateral have to be considered.[24]

23. **Differentiation of objectives in financial support should be made early on in the process.** To the extent that the state decides to assign social responsibilities to public enterprises, this puts constraints on profit-maximization and necessitates financial compensation. Official support as compensation for such purposes (such as price controls, supply of merit goods, and other public service requirements) will still be needed after public enterprise restructuring, and is, therefore, not addressed in the current subsidization scheme.

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[22] World Bank, 1995; Bertero, E. and L. Rondi, 2002; Li, D., 1998; Li, D. and M. Liang, 1998; Lin, Y. and G. Tan, 1999.

[23] The recent FSAP report indicates that 22 of the 38 largest state-owned enterprises (SOEs) are loss-making (there are twelve very large SOEs). Relatively viable SOEs are found in the chemicals and plastics, construction materials, and food processing sectors, while many SOEs in the metallurgy and machinery, textiles, leather and footwear industries are distressed. According to the Ministry of Industry, 380 out of a total of 1120 SOEs are salvageable, of which 320 will be privatized within the next three years.

[24] Mackenzie, G. and P. Stella, 1996.

Financial support for public enterprises deriving from these objectives should, therefore, be separated from the purely loss-financing transfers considered here.[25]

24. **The government has to project the amount of direct government financial aid that is likely to be needed and, equally important, available in exchange for the elimination of credit by public banks.** Financing needs have to be specified case-by-case, taking into account the potential long-term viability of the company subunits, in addition to the consolidated balance sheets. Nonviable operations can be characterized by negative value added at world market prices, or more generally by the relation between costs of restructuring and its expected benefits. The medium-term financing needs of the loss-making public enterprises can be quantified using balance sheet projections and profit simulations.[26]

25. **The subsidization scheme has to specify the amount of individual transfers, the conditions for granting financial support, routines for monitoring, and corrective measures.** The size of the subsidy follows from the identified financing needs for maintaining operations of the enterprise in question. Subsidies should be fixed annually in advance, fully budgeted, and subject to strict conditionality and full accountability. Since any subsidization scheme is vulnerable to rent-seeking and makes heavy demands on the government and public officials, full transparency and publicity are of the highest importance.[27] Conditions for granting subsidies, as well as corrective measures in case of noncompliance, should be specified in explicit agreements between the government and the management of public enterprises. Contracts should specify clear performance criteria, benchmarks, managerial incentives, automatic trigger mechanisms for sanctions, as well as corresponding rewards and penalties linked to performance.[28] The program should ensure close monitoring of public enterprises, including strengthened accounting and reporting regulations, independent auditing, and an annual reassessment of performance agreements.

26. **The financial support granted to public enterprises has to avoid any open-ended character.** Only temporary financial assistance that follows a clear, pre-announced and credible action plan for gradually ending loss-financing subsidies is acceptable. To guarantee that the granting of budgetary subsidies does not degenerate into permanent financial support, the subsidization scheme has to be credibly coupled with a rigorous restructuring and privatization of public enterprises. Depending on viability, measures can be introduced in combination with the subsidization program to prepare enterprises for privatization, restructuring, or liquidation. In order to contain the fiscal costs of the support program, some unviable lines of production might need to be closed at an early stage of the program. Maintaining and restructuring production units with negative value added at world prices will, in general, not be worthwhile. In these cases, it will be preferable to end production and

[25] Schaffer, M., 1998; Kornai, J., 1986.
[26] Stone, M., 2000; Dhar, S., 1992; Gray, D. 1999; Lin, Y. and G. Tan, 1999.
[27] Bregg, D. and R. Portes, 1993; Kornai, J., 1996; World Bank, 1995.
[28] World Bank, 1995.

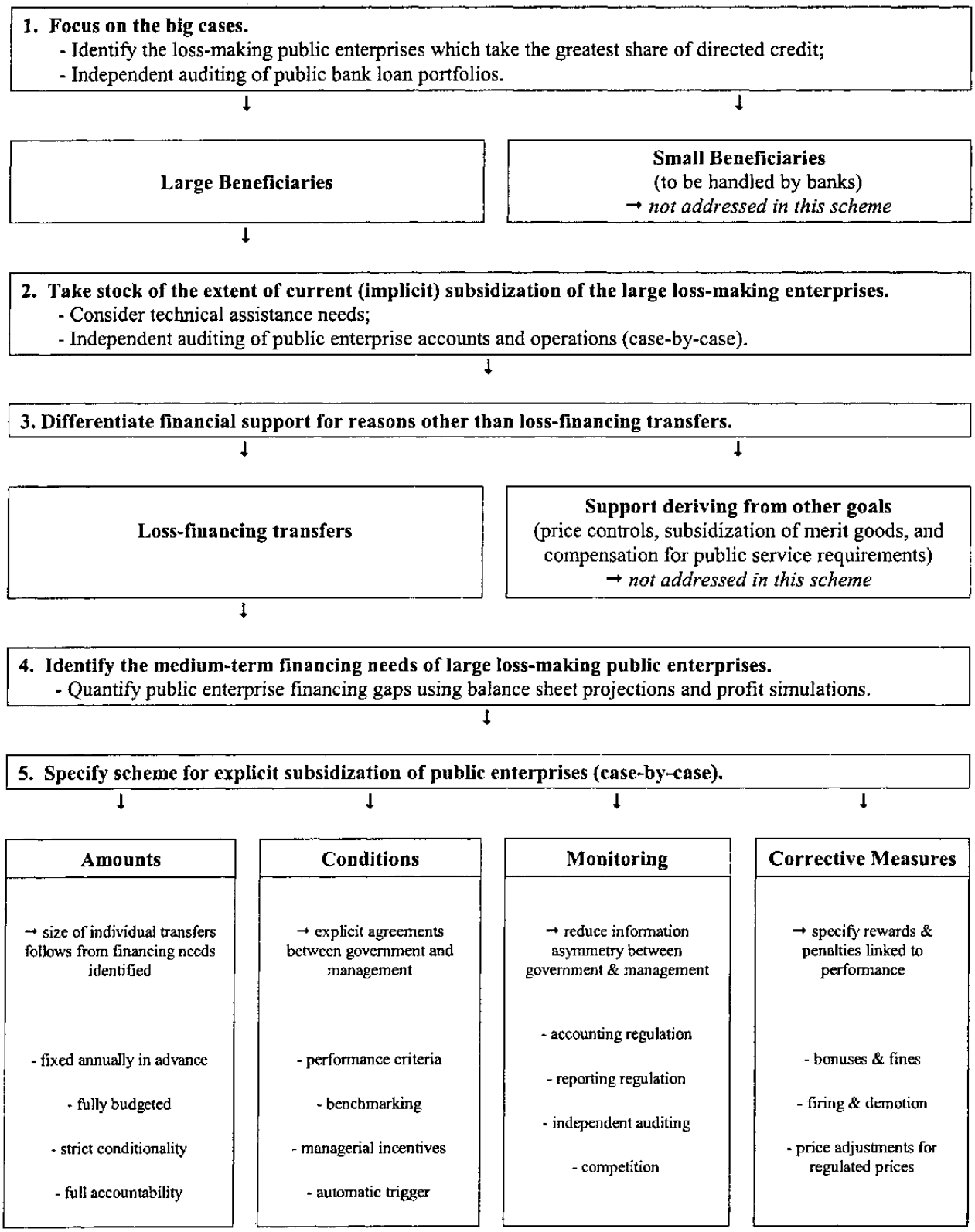
instead use budget transfers to compensate employees in full.[29] Generally, private investors have a comparative advantage in restructuring loss-making enterprises. Therefore, potentially viable public companies should be privatized as soon as possible to relieve the government from the fiscal burden of the enterprises' losses, as in the case of the steel sector (ISPAT). However, the public companies with the greatest need for financial support are presumably those which cannot quickly be privatized. For these cases, cash limiting and transparent subsidization with a view to eventual liquidation remains the best policy option in the short run.[30]

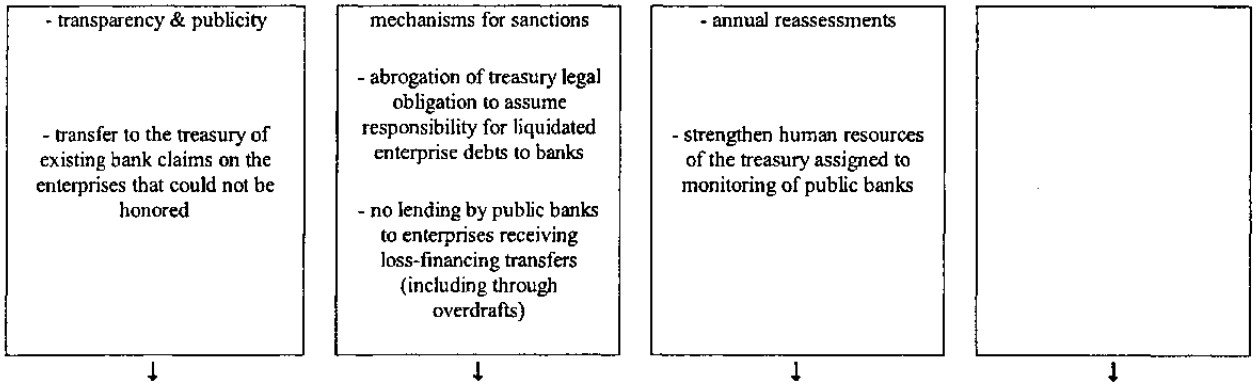
27. **The authorities should concomitantly move ahead with gradually privatizing and steadfastly restructuring public banks.** Pending successful implementation of financial sector reforms, the authorities should rule out new lending to loss-making public enterprises receiving loss-financing transfers (all new credit, including overdrafts, should be ruled out). This will ensure that the gradual hardening of public enterprise budget constraints is not undermined by the granting of additional soft credits. In view of the current situation of abundant liquidity, however, crowding out of credit to the private sector seems not to be a major risk at the moment. Therefore, credit ceilings on bank lending to public enterprises, in general, are not needed under the present circumstances. However, the authorities should ensure an early strengthening of bank monitoring and supervision in order to minimize imprudent lending by public banks. As long as public ownership remains dominant in the banking sector, public banks will not operate under fully commercial conditions, and a moral hazard problem in the form of general bailout expectations will prevail.

[29] Dhar, S., 1992; Tanzi, V., 1992.

[30] Kornai, J., 1996; World Bank, 1995; Bregg, D. and R. Portes, 1993; Dhar, S. 1992.

Implementation of Reforms





6. Gradual phasing out of subsidies.

- Couple gradual phasing-out of subsidies to rigorous restructuring program;
- Preannounced, clear and credible action plan for ending subsidies;
- Privatization, restructuring, or eventual liquidation (partial or total) of public enterprises;
- If necessary, providing a social safety net to dismissed employees.

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III. Determinants of Inflation in Algeria[31]

A. Introduction

28. **Algeria has achieved price stability since the completion of the Fund-supported stabilization program** (1994–1998). Macroeconomic stability has been restored, the external position has been strengthened and prices remain stable except for 2001, where inflation increased marginally, though remaining below 5 percent.

29. **However, a study on money demand shows that the current macroeconomic environment carries inflationary risks.** The study confirms the stability of money demand in Algeria and shows that strong money growth fueled by high hydrocarbon revenues and high government spending ignites inflation. Thus the 2002 excess monetary balances could put pressure on prices.[32]

30. **In 2002, the traditional close relationship between inflation and monetary growth broke down, as velocity declined.** Increased political and social tensions in a context of high oil revenues have led the authorities to adopt an expansionary fiscal policy since 2001, in order to create jobs and improve the living conditions of the population. As a result, and despite some tightening of the monetary stance, excess reserves of banks increased considerably due to the nonsterilization of the government share of net foreign assets. So far, however, the acceleration of M2 growth has not translated into higher inflation as the growth of the Consumer Price Index (CPI)—following a slight increase in 2001— decelerated in 2002.[33]

31. **Inflationary pressures from looser financial policies may have dampened by offsetting nonmonetary factors.** The 2002 behavior of prices did not follow the money market equilibrium, indicating that nonmonetary factors could have offset the effects of the increase in the money supply. For example, high agricultural output and reduction in trade barriers may potentially explain low inflation.

32. **Against this background, this paper examines the characteristics of the inflation process in Algeria and its main determinants using three different approaches.** The objective is to find out what factors influence price movements and to assess the extent to which a sharp increase in prices should in retrospect be viewed as a monetary phenomenon.

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[31] Prepared by Taline Koranchelian (ext. 38592).

[32] See IMF 2003b.

[33] Against a background of strong growth of 22 percent in money supply, inflation picked up from 0.3 percent in 2000 to 4.2 percent in 2001. However, despite the continuation of high money growth in 2002 (18 percent), inflation remained subdued (1.4 percent).

After presenting the structure and composition of the CPI, and the evolution of inflation in Algeria, the paper uses the following three approaches to define the characteristics of inflation and explore gradually its determination:

- **A *univariate* decomposition approach to shed more light on the characteristics of the CPI movements**, by decomposing inflation into three unobserved components: seasonal, trend, and irregular.

- **A *bivariate* approach to reveal the leading indicators of inflation,** by running Granger causality tests and examining the information content of each of the traditional cost-push and demand pull factors in association with inflation in Algeria: money and credit, volume of imports, foreign prices, and the exchange rate.

- **A *multivariate* approach to derive a theoretical model to determine inflation,** by using co-integration and error-correction techniques.

33. **The analysis indicates that both monetary and real factors affect inflation in Algeria.**[34] The first approach shows that inflation is on a downward trend since Algeria's economic liberalization. In addition, given the weight of food prices in the CPI basket, factors affecting food price movements, such as a good harvest, or a fall in international food prices, influence price movements in Algeria. The second approach indicates that each of the traditional cost-push and demand pull factors (M1, the volume of imports, and foreign prices) has separately predictive information for CPI movements. The third approach confirms that inflation is positively related to both money supply and the exchange rate, and negatively related to income in the long run. In the short run, exchange rate movements do not seem to affect price changes (based on the empirical model), while movements in M1 and output seem to predict well CPI changes, thus confirming the quantity theory of money.

34. **The study shows that the coexistence of high liquidity and low inflation in 2002 can be attributed to both monetary and real factors.** This is partly explained by the deceleration of the narrow money M1 growth in 2002, as the acceleration of M2 growth is mainly due to the automatic sterilization of the state-owned hydrocarbon company's deposits given their "inactive" nature. It also results from higher agricultural output, associated with the implementation of the National Program for the Development of Agriculture.[35] It could be as well due to the reduction in trade barriers. Although there is no available data to empirically confirm the relation between easing trade barriers and the fall in inflation, the

[34] The lack of sufficient data on real wages, budget deficits, parallel market exchange rates, agricultural output, and customs revenues have, nevertheless, limited the scope of empirical tests.

[35] The noncereal agricultural output increased in 2002. The unfavorable weather conditions damaged cereal crops and total agricultural output fell slightly.

declining trend in price movements since the beginning of trade liberalization in 1996 supports this argument.[36] Policy implications are summarized in the conclusion.

B. Background

Composition and Structure of the CPI

35. **The CPI for the capital Algiers is the most accurate price index in Algeria.**[37] The index is compiled monthly by the National Board of Statistics and composed of 260 goods and services. Weights are based on the 1988 National Household Consumption Survey, and the reference year is 1989. The CPI is calculated according to the Laspeyres formula.

Table 1. Algeria: Consumer Price Index Basket and Volatilty

	Weights	Coefficient of Variation 1990.02-2003.09	Coefficient of Variation 1997.01-2003.09
Food and beverages	44.0	3.5	10.8
Clothing and footwear	11.6	1.6	5.7
Rent, water, fuel, power	5.6	2.2	2.9
Household goods	6.8	3.0	2.7
Medical care	3.4	2.7	1.7
Transportation and communication	11.5	2.2	3.2
Recreation, education, and culture	6.5	3.6	-7.5
Other	10.6	2.0	4.7
Total	100.0	1.9	5.6

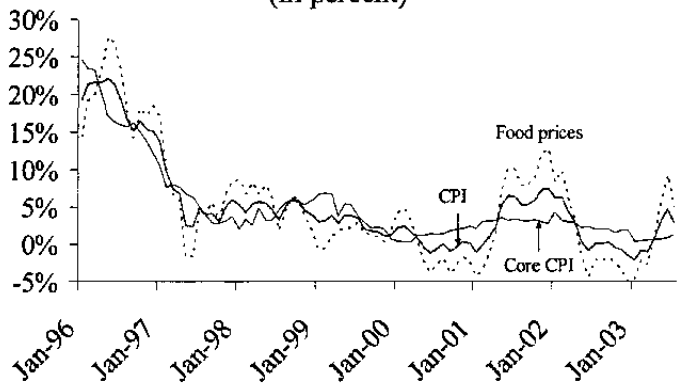
Source: Algerian National Board of Statistics

Note: Coefficient of Variation is defined as the ratio of standard deviation of the monthly inflation of each item to its respective mean.

[36] The abolition of minimum duty values and their replacement by a Temporary Additional Duty (TAD) in mid-2001—followed by a reduction of this levy in January 2002 and January 2003—as well as the implementation of a streamlined tariff limited to four rates as of January 2002 have reduced import prices.

[37] The national index is not representative of inflation as it suffers from statistical and compilation weaknesses.

Figure 1. CPI 12-month changes, 1996-2003
(in percent)



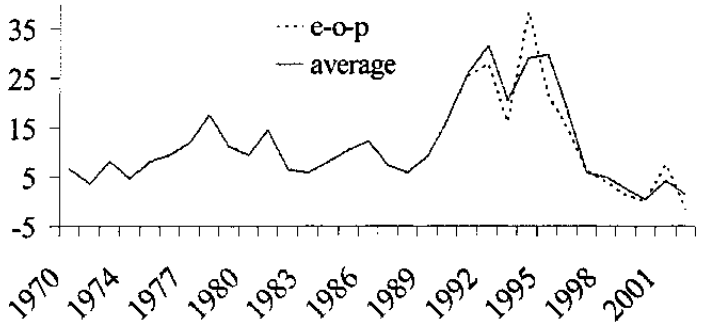
36. **Movements in food prices dominate movements in the CPI.** Table 1 shows that food and beverages account for 44 percent of the consumption basket. Consequently, factors affecting food prices dominate movements in the CPI (Figure 1 and Appendix II). These factors include weather conditions, wages, import prices, and exchange rate movements (owing to the high import content of foodstuffs).

37. **Due to price liberalization, the coefficient of variation of the CPI is high during 1997–2003.** Food and beverages have the most volatile prices throughout the entire sample period due mainly to liberalization of many administered prices starting in 1994. The volatility of prices of clothing and footwear, which are subject to foreign competition. also increased during 1996–2003 due to Algeria's increased international economic integration (Table 1).

Evolution of Inflation during 1970–2002

38. **In the 20 years up to 1990, when price liberalization started, annual inflation in Algeria averaged about 9 percent** (Figure 2). Inflation surged only once, after the first oil shock in the mid 1970s, reflecting higher import prices and strong demand pressures in the nontradables sector owing to the oil windfall. However, price stability was only apparent: large budget deficits were being monetized, causing a monetary overhang. Inflationary pressures were repressed by pervasive price controls—in 1990, more than 50 percent of the items in the consumer price index were subject to either price ceilings or margin limits. This resulted in widespread supply shortages.[38]

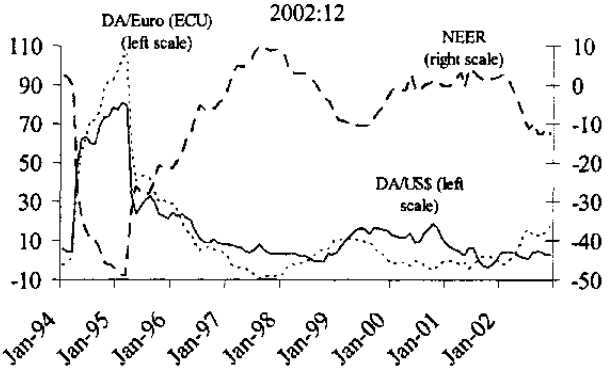
Figure 2. Inflation Rate, 1970-2002
(in percent)



[38] See IMF, 1998.

39. **In 1990–91, realignments of the exchange rate coupled with price liberalization and the monetization of large fiscal deficits led to price increases** (Table 2). The episodes of large exchange rate devaluations resulted not only in inflation, but also in growing import and external debt servicing costs, and revealed the hidden losses of public enterprise. Moreover, in 1992–93, the authorities' expansionary fiscal policy to support economic activity resulted in higher budget deficits. These imbalances continued to be financed through money creation, and, by the end of 1992, the 12-month inflation rate was 28 percent.

Figure 3: Variation of the Exchange Rate: 1994:01-2002:12



40. **The 1994 stabilization program had a long lasting impact on inflation.** The program included a large up-front devaluation (50 percent) geared to improving competitiveness and restoring external viability over the medium term.[39] The devaluation contributed to an initial increase in inflation, which reached 39 percent at end-1994 (Figure 2). However, a restrictive fiscal 'stance coupled with tight income monetary policies led to a sharp and durable decline in inflation. By end-1996, the 12-month rate of inflation was down to 15 percent, and to 6 percent by end-1997. This successful disinflation policy was accompanied by a comprehensive price liberalization: administered prices more than doubled over 1994–96, and by early 1996, only less than 15 percent of the items in the CPI were regulated.[40] While price liberalization allowed for the realignment of relative prices, its impact on CPI changes was offset by the decline in prices of imported products stemming from the appreciation of the dinar vis-à-vis European currencies (Figure 3), and by a prudent monetary stance as well as wage restraint, which made room for those adjustments without feeding inflationary pressures.

41. **Disinflation has continued over the past five years.** This period was marked by low inflation. The continued decline in inflation, except for a temporary rebound in 2001, was in large part attributable to food and beverages prices, the movements of which mirrored the fall in international prices of basic foodstuffs. In 2001, expansionary domestic policies—a large increase in public salaries, an easing of the fiscal stance and an accommodating monetary policy—coupled with increasing food prices resulted in a pickup in inflation to an annual average of 4.2 percent and to 7.5 percent by end-year. By contrast, in 2002, despite the

[39] The parallel exchange market shrunk when the convertibility of the dinar for current account transactions was introduced.

[40] Some prices are still administered, mainly in the transportation and energy sectors; their weight in the CPI is less than 13 percent (see Staff Report for the 2001 Article IV Consultation and Post-Program Monitoring Discussion IMF Staff Country Report 01/162).

continuous expansionary fiscal policy, and the resulting M2 growth, inflation rate declined to less than 2 percent.[41]

C. Determining Inflation

Interpreting Unobserved Components

42. **Seasonality, economic policies, and exogenous factors characterize the inflation process in Algeria.** The previous analysis of the evolution and possible causes of inflation during 1990–2002 shows that the evolution of prices in Algeria is likely to be a combination of the effects of food prices, with their marked seasonality, economic policies, and external factors affecting the two former factors. A tentative interpretation of these factors could be that economic policies determine the evolution of "underlying inflation", which would be represented by the statistical trend of the series. Along this trend, the seasonal behavior would be determined by factors affecting agriculture or timing of holidays, while exogenous events would influence the series on an irregular basis. A way of exploring this interpretation is to perform a univariate decomposition of the series into these three elements, trend, seasonal and irregular. A univariate decomposition of the series into their unobserved components can be done in many ways. Hence, an ARIMA-model-based method was used to decompose the price series into its different unobserved components (see Appendix III for a brief description of the methodology).

43. **The univariate approach confirms that inflation in Algeria is on a declining path and is highly affected by agricultural production.** Figure 4 presents the decomposition of the monthly inflation rate. Trend inflation has decreased steadily over time, as a result of the stabilization policies implemented in Algeria. The slight increase of the trend in 2001 reflects the combination of the 2000 expansionary fiscal policy combined with the increase in money supply. Inflation in Algeria shows a very stable and sizable seasonal pattern, peaking in May, August, December, and January and with troughs in February, April, and July. This seasonality can be associated with agricultural production, which reaches its peak in the summer and its trough afterwards.[42] The irregular component of inflation is important over the entire sample. It captures quite well the period preceding the adoption of a new constitution in 1996, the political tensions and government reshuffling in spring 2001, and the May 2003 earthquake.

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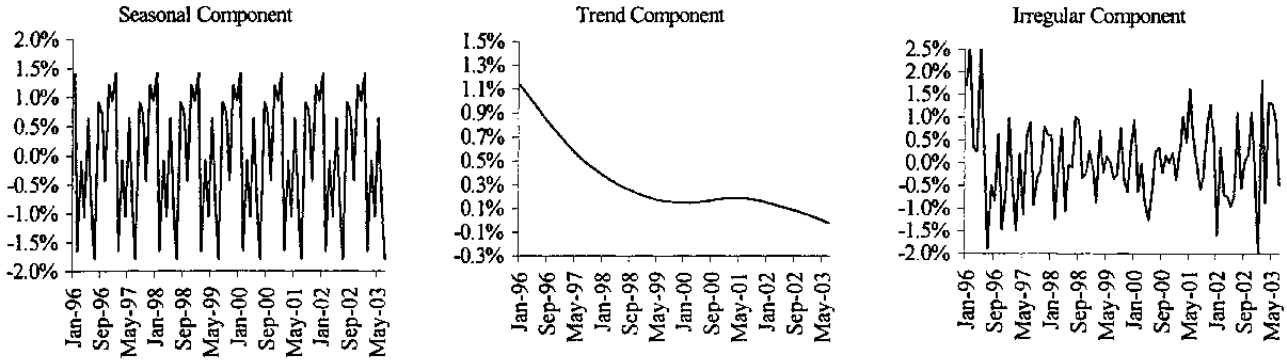
[41] Following the removal of the minimum duty values in August 2001, the size of the informal sector expanded for tax evasion purposes.

[42] Given the lack of data on monthly agricultural production, it is not possible to test the similarity between the seasonality of agricultural production and inflation.

Figure 4. Algeria: Decomposition of CPI Monthly Changes, 1996:01-2003:07 (in percent)



Leading Indicators of Inflation

44. **Following the approach employed by Friedman and Kuttner (1992), this section examines the information content of each of the traditional cost-push and demand pull factors in explaining price movements, by using Granger causality tests.** This technique helps identify the variables that provide significant information for predicting the future course of inflation in Algeria, which, in turn, could be used in the theoretical model of inflation determination and constitute a valuable input for policy makers in designing economic policies. The technique investigates the directional relationship between inflation and the various proxy variables for cost-push and demand pull factors.[43] More specifically, inflation is regressed on both its past values as well as on the past values of each of the potentially explanatory variables.[44] If these explanatory variables are statistically significant in the regression, then they provide information about inflation over and above that provided by past values of inflation.[45]

45. **All variables are expressed in first differences since they have unit roots.** Monthly data for the period 1997–2002 are used.[46] The variables are expressed in logarithmic terms. An investigation of the time series properties of all variables using both the Dickey-Fuller

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[43] These variables are derived based on the description of the evolution of inflation in Algeria.

[44] The equations estimated in the bivariate Granger causality tests are in the following form:

$$X_t = \eta + \sum_{i=1}^{m} X_{t-i} + \sum_{i=1}^{m} Y_{t-i} + v_t$$

where X represents the CPI. Y is an element in the set of indicator variables, which includes currency in circulation, M1, M2, domestic credit, credit to the economy, credit to the government, NEER, REER, the dinar/US$ exchange rate, the dinar/Euro exchange rate, foreign prices, volumes of imports, volumes of cement imports, electricity production, (the last three are used as proxies for output).

[45] See Toda and Phillips (1994).

[46] Data is taken from Algerian authorities, the International Finance Statistics, and IMF staff estimates.

(DF) and the Augmented Dickey-Fuller (ADF) tests shows that all variables except have unit roots (Appendix IV). This implies that the variables are non-stationary and hence may exhibit some spurious correlations.

46. **The overall results underscore that currency in circulation, M1, credit to the economy, foreign prices, and volume of imports constitute each a good leading indicator for prices movements.** Appendix V presents the overall results of this exercise. The results of the tests including M1 and volume of imports (proxied for output) confirm the quantity theory of money. There is also strong evidence that causality runs from foreign prices to local prices, showing the pass-through effect in an open economy. The graphical representation of inflation and the variation in each of the above-mentioned variables (Appendix VI) also shows the existence of a relation between these variables and price movements.

Empirical Model of Inflation

47. **This section empirically estimates a simple theoretical model of inflation determination,** which will help policy makers in understanding the structural determination of inflation. Equation 6 represents the theoretical model of inflation (see Appendix VII). It predicts that an increase in money supply, in foreign prices, in real wages, in interest rates, and in the exchange rate will all drive prices up, while an increase in real income will lead to a decline in the inflation rate.

$$\log P_t = \alpha \log \underset{+}{M_t} + \varphi \log \underset{-}{y_t} + \sigma \log \underset{+}{w_t} + \mu \underset{+}{r_t} + \delta \Delta \log \underset{+}{P_{t-1}} + \upsilon \log \underset{+}{e_t} + \gamma \log \underset{+}{P^f_t} + u_t \quad (6)$$

48. The empirical testing of the model is constrained by the limited availability of data. Volume of imports is used as a proxy for output.[47] Real wages are excluded from the equation. Interest rates are also omitted from the model, because of the relatively underdeveloped nature of financial markets in Algeria. The model becomes as follows:

$$\log P_t = \alpha \log M_t + \varphi \log y_t + \upsilon \log e_t + u_t \quad (6')$$

49. The empirical approach is divided into two parts. First, Engle and Granger (1987) and Johansen and Julelius (1990) co-integration tests are run to determine the existence of a long-run relationship between P, e, Y, M.[48] Both procedures indicate that there is a long-run equilibrium relationship between P and e, y, and M. The long-run equilibrium estimated for the period 1997:01–2003:03 takes the following form (figures in parentheses represent standard errors; figures in square brackets represent t-statistics):

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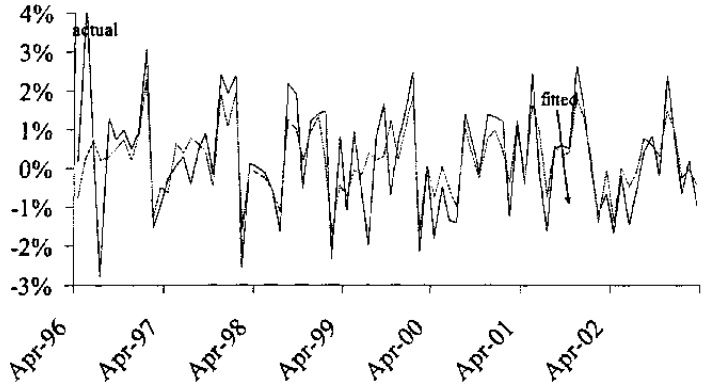
[47] Although volume of imports is mainly a demand indicator, it is also linked to economic activity and output. This analysis uses import volume as an indicator for output, given the lack of frequent data on output.

[48] A dummy variable is used to capture the supply shock of a good harvest on domestic output and price movements.

$$\log CPI = \underset{(0.02)\ [2.29]}{0.42 \log M1} - \underset{(0.05)\ [-2.03]}{0.07 \log IMP} - \underset{(0.08)\ [-2.01]}{0.17 \log NEER} \qquad (6'')$$

Figure 5. Actual and Fitted Changes in the CPI



50. **All the coefficients of the equation have the theoretically expected sign.**[49] In the long run, inflation in Algeria is positively related to money supply and the exchange rate, while it is negatively related to real activity (import volumes). More specifically, in the long run a 1 percent increase in M1 will raise inflation by 0.42 percent, while a 1 percent depreciation of the dinar/dollar exchange rate will increase inflation by 0.17 percent.[50] Finally, a 1 percent increase in the proxy for real output will reduce inflation only by 0.07 percent confirming the quantity theory of money. The model tracks inflation well, and deviations are generally of a small magnitude (Appendix VIII). Figure 5 plots the actual and the fitted values of inflation.

51. **The results suggest that in the long run monetary factors have a bigger impact on price changes in Algeria than exchange rate movements or output changes.** This finding supports the monetarist argument on the power of monetary factors in the long run inflationary process.

52. To capture the short run dynamics of inflation, a "general-to-specific" modeling approach is followed and a general dynamic error-correction model is estimated.[51] The general specification that is considered takes the form of an autoregressive distributed-lag model of the type:

$$\Delta P_t = \varphi_0 + EC_{t-1} + \sum^{n} (\varphi_{ij}\, \Delta x_{t-j}) + \varepsilon_t \qquad (7)$$

[49] A decline in NEER means depreciation of the dinar. Therefore, NEER has a negative sign in the equation.

[50] M1 is used for money supply because of its better explanation of price movements than M2, as M2 includes the "inactive" deposits of the state-owned hydrocarbon company Sonatrach. It would have been preferable to use an adjusted M2 (excluding the deposits of Sonatrach, to remove the automatic sterilization resulting from an increase in the deposits of Sonatrach from the empirical analysis). However, given the lack of data on the deposits of Sonatrach, it is not possible to calculate an adjusted M2.

[51] Different parameterizations and lag lengths are considered during the process, and model reduction with the final objective of a parsimonious model is the guideline used to reach the final specification.

$j=0$

where x_t is the vector of regressors, EC is the error-correction component, and ε_t is a serially uncorrelated error term.

53. The error correction model utilizes information in the error correction term of the long-run model to approximate deviations from the equilibrium and represent the short-run response necessary to move the system back toward its equilibrium. The error correction term is calculated as:

$$EC_t = P_t - \underline{P}_t \qquad (8)$$

where P_t is the actual value of P in the period t and $\underline{P}_t$ is the fitted value of P_t estimated in equation (7).

54. The most parsimonious formulation of the equation (7), estimated for the period 1999:01–2003:03, is presented below (figures in parentheses represent standard errors; figures in square brackets represent t-statistics).

$$\Delta\log CPI = -0.003 - 0.73\,EC + 0.65\,\Delta\log CPI_{(t-1)} + 0.58\,\Delta\log CPI_{(t-2)} + 0.64\,\Delta\log CPI_{(t-3)}$$
(0.24) (0.20) (0.19) (0.17)
[-6.27] [3.23] [3.07] [3.58]

$$+ 0.55\,\Delta\log CPI_{(t-4)} + 0.44\,\Delta\log CPI_{(t-5)} + 0.26\,\Delta\log CPI_{(t-6)} + 0.60\Delta\log M1_{(t-1)}$$
(0.15) (0.13) (0.11) (0.12)
[3.43] [2.29] [4.91] [3.74]

$$+ 0.51\Delta\log M_{1(t-2)} + 0.45\Delta\log M1_{(t-3)} + 0.37\Delta\log M1_{(t-4)} + 0.21\Delta\log M1_{(t-5)} - 0.06\Delta\log IMP_{(t-1)}$$
(0.13) (0.13) (0.11) (0.07) (0.01)
[3.35] [3.35] [3.25] [2.95] [-3.84]

$$- 0.03\Delta\log IMP_{(t-2)} - 0.02\Delta\log IMP_{(t-4)} + 0.01\,harvest$$
(0.01) (0.01) (0.002)
[-3.34] [-2.71] [2.21]

$R^2 = 0.78$ $DW = 2.22$

55. **The results indicate that the parsimonious model has good statistical properties.** The error correction term EC is significant at 1 percent level, confirming that the variables are co-integrated. It also shows the rapid adjustment of inflation toward its equilibrium value. That is, there is 73 percent feedback from the previous period into the short run dynamic process. The presence of serial correlation, or more general forms of autocorrelation, was rejected based on the Breutsch-Godfrey and Box-Pierce Q statistic. The Jarque-Bera test statistic confirmed normality, and the ARCH test rejected up to fourth-order heteroscedasticity in the disturbance term. Finally, the cumulative impulse responses to a one standard deviation in the variables of the equation confirm that prices respond highly to M1 movements and less to economic activity (see Appendix VIII).

56. **The results show that money, volume of imports and weather conditions have a strong impact on price movements in the short run, whereas the exchange rate has none.** The empirical evidence using the available data confirms the theory that excess money supply puts pressure on prices in Algeria. Changes in output and weather conditions have a less important impact on prices in the short term. The most striking result is the absence of short-term relation between the exchange rate and inflation. Theoretically it would be expected to see some pass-through effect from exchange rate movements to price movements, and this is confirmed if we use the subcomponent food prices instead of total CPI. However, the empirical absence of the exchange rate effect on price movements could be due to the existence of a parallel market that might contribute to the explanation of the relation between exchange rate and price movements, as well as to some statistical weaknesses such as the absence of data on tariff reduction, which could have offset the effect of exchange rate movements on inflation. The relation between the parallel market rate and inflation could however not be confirmed (or infirmed) given the lack of data.[52]

D. Conclusion

57. **This paper emerged from the question "why inflation is not picking up in Algeria's environment of high monetary growth".** It took a broad approach toward assessing the evolution of prices in Algeria, focusing especially on the period of moderate-to-low inflation in 1997–2002. The main conclusions are summarized as follows:[53]

58. **Inflation is on a declining path since 1996.** Economic liberalization, including price and exchange rate liberalization have had a positive impact on reducing inflation over the medium term.

59. **Factors affecting food prices, such as weather conditions, influence price movements.** The graphical analysis of price behavior shows that CPI movements reflect mainly movements in food prices, given the weight of food prices in total CPI.

60. **The empirical analysis highlights that the increase in M2 does not necessary create inflationary pressures, and movements in narrow money M1 explain better price movements in Algeria than those of M2.** Despite the acceleration of the broad money M2 growth during 2002, prices remained stable, along with a decline in currency in circulation and M1 growth. This result suggests that movements in M1 are better indicators than those in M2 to determine price changes, as M2 increase could be due to an automatic sterilization of the deposits of the state-owned oil company in the event of high oil prices given their "inactive" nature. Thus, such an increase would not put pressure on prices.

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[52] See IMF (2003a) for further details on the parallel exchange market.

[53] Given the lack of sufficient data on real wages and the parallel exchange market, results should be interpreted with caution.

61. **Nonmonetary factors have also an impact on price movements.** Price movements are also affected, by a number of nonmonetary causes, the most fundamental of which being economic activity and weather conditions. The empirical test shows that economic activity and agricultural output influence price movements, although to a lesser extent than money supply.

62. **The exchange rate is not a good predictor of short-term price changes in Algeria.** The empirical work shows that, although the exchange rate has a long-term relation with inflation, it does not affect price changes in the short run. This could due to the combination of two factors: (a) the existence of a parallel market that might contribute to the explanation of the pass-through effect in the short term, although the lack of data prevents from confirming or infirming the existence of such relation, and (b) statistical weaknesses including the absence of data on tariff reduction that could have offset somehow the exchange rate effect.

63. **Against this background, the 2002 price stability could be due to the combination of**: (a) the deceleration of the currency in circulation and narrow money growths; and (b) the pick-up in the agricultural sector and the increase in output. The removal of trade barriers should have had an impact on the decline in inflation, however it has not been tested empirically due to data constraints.

64. **Looking forward, Algeria's experience highlights the need to conduct a prudent monetary policy** on a sustained basis in order to avoid inflation, with currency in circulation and M1 being the variables that need closest attention. In this respect, a nonexpansionary fiscal policy constitutes an essential element in keeping inflation low.

65. **These findings also shed some light on Algeria's exchange rate policy.** The fact that exchange rate movements have a mild impact on price changes in the short term may facilitate the move toward a more market-based determination of the exchange rate.

66. **Finally, policies in favor of increasing total factor productivity would also help maintain price stability.** The negative impact of economic growth and agricultural output on inflation suggests that structural and institutional reforms as well as infrastructural improvements to increase Algeria's productive capacity will help maintain price stability.

Definition of Variables

P = CPI= consumer price index

P^f = CPI^f = CPI of main trading partners (euro area)

CCL= currency in circulation

M = money supply

M1= narrow money (currency in circulation + demand deposits)

M2= broad money (M1 + term deposits)

DC = domestic credit

CG = credit to the government

CE = credit to the economy

NEER= nominal effective exchange rate (a decline in NEER is equivalent to a depreciation)

REER = real effective exchange rate (a decline in REER is equivalent to a depreciation)

e = exchange rate (a decline in e is equivalent to an appreciation)

$e_\$$ = dinar/dollar exchange rate (a decline in $e_\$$ is equivalent to an appreciation)

$e_€$ = dinar/euro exchange rate (a decline in $e_€$ is equivalent to an appreciation)

Y= output

IMP = volume of imports expressed (used as a proxy for output)

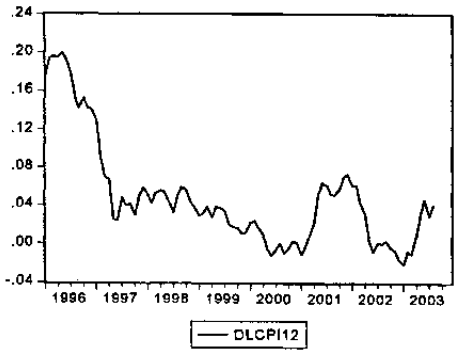
CIMP = volume of cement imports

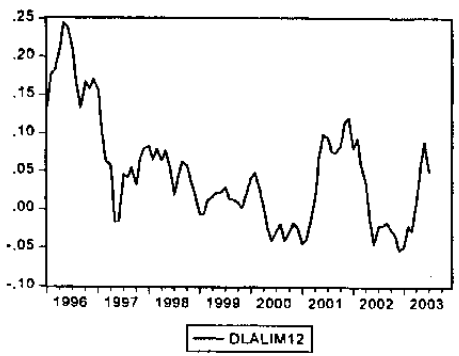
EPROD = electricity production

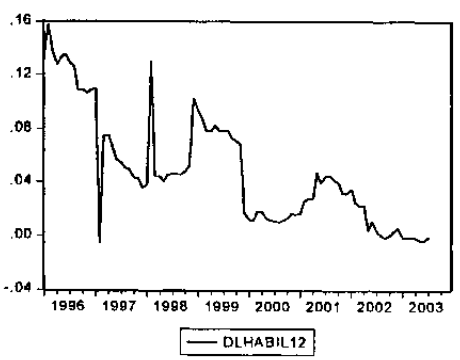
OILP = international oil prices

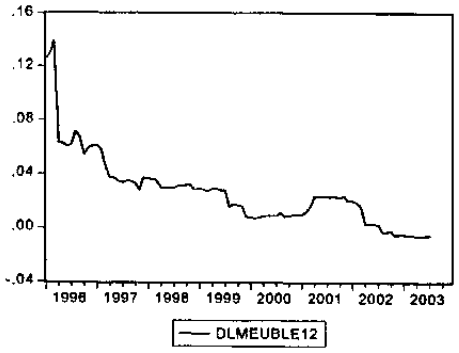
w = real wages

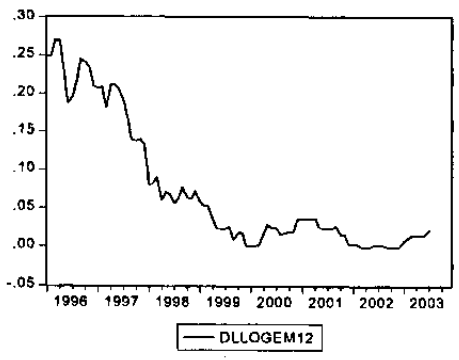
Components of CPI Changes

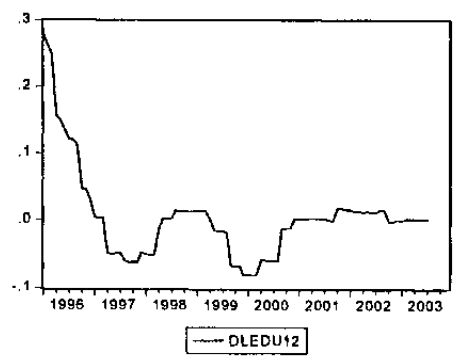


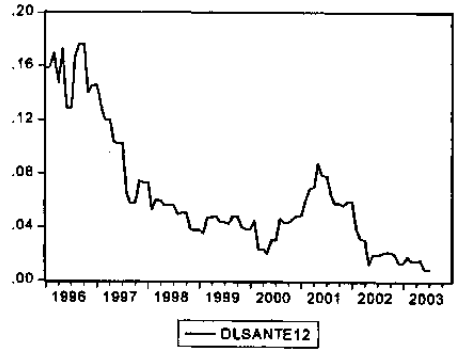


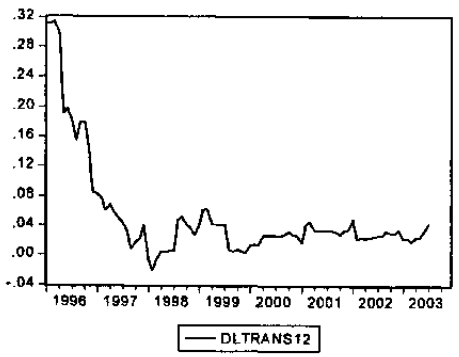


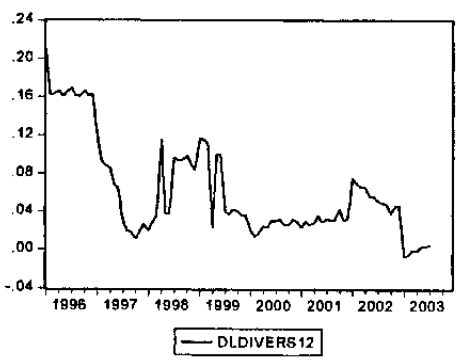












A Model-Based Unobserved Components Decomposition

This appendix describes the methodology used to decompose a series into its unobserved components. Briefly, the procedure is as follows: Let x_t denote the original series and let

$$z_t = \delta(B)\, x_t$$

represent the "differenced" series, where B stands for the lag operator, and $\delta(B)$ denotes the differences being taken on x_t in order to achieve stationarity. We consider the case

$$\delta(B) = \Delta^d \Delta_s^D$$

where $\Delta^d = 1 - B$ and $\Delta_s^D = (1-Bs)^D$ represents the seasonal differencing of period s. The model for the differenced series z_t can be expressed as:

$$\Phi(B)\,(z_t - \bar{z}) = \theta(B)\, a_t$$

where z is the mean of z_t, a_t is a white noise series of innovations, $\Phi(B)$ and $\theta(B)$ are autoregressive (AR) and moving average (MA) polynomials in B, respectively. This relationship can be expressed in a multiplicative form as the product of a regular polynomial in B and a seasonal polynomial in B_s, as in:

$$\Phi(B) = \Phi_r(B)\, \Phi_s(B_s)$$
$$\Phi(B) = \theta_r(B)\, \theta_s(B_s)$$

Substituting and rearranging, the complete model can be written in a detailed form as"

$$\Phi_r(B)\, \Phi_s(B_s)\, \Delta^d \Delta_s^D\, x_t = \theta_r(B)\, \theta_s(B_s)\, a_t + c$$

and in a concise form as:

$$\phi(B)\, x_t = \theta(B)\, a_t + c$$

Where $\phi(B) = \Phi(B)\, \delta(B)$ represents the complete autoregressive polynomial, including all unit roots. If p denotes the order of $\Phi(B)$ and q denotes the order of $\theta(B)$, then the order of $\phi(B)$ is $P = p + q + Dxs$.

The decomposition into several components is done as follows: $x_t = \sum_i x_{it}$

where x_{it} are the trend x_{pt}, seasonal x_{st}, and irregular x_{ut} components. Broadly, the trend represents the long-term evolution of the series and displays a spectral peak at zero frequency; the seasonal component, in turn, captures the spectral peaks at seasonal frequencies. The irregular component captures erratic, white-noise behavior and hence, has a flat spectrum.

Statistics for ADF(2) Unit Root Tests

Variables	Level		First Difference	
	Lag	t-ADF	Lag	t-ADF
CPI	12	0.31	12	-2.96 **
CPI_f	12	-2.37	12	-6.10 **
CCL	12	5.67	12	-3.20 **
M_1	12	6.56	12	-3.47 **
M_2	12	1.45	12	-8.30 **
DC	12	2.01	12	-7.27 **
CG	12	0.30	12	-7.51 **
CE	12	2.13	12	-7.62 **
NEER	12	-1.52	12	-6.63 **
REER	12	2.18	12	-6.20 **
e_S	12	1.12	12	-5.09 **
e_ϵ	12	2.09	12	-2.26 **
IMP	12	0.64	12	-3.71 **
CIMP	12	0.02	12	-15.06 **
EPROD	12	0.04	12	-8.29 **
OILP	12	0.24	12	-7.37 **

Notes: Variables are as defined in Appendix 1. For each variable expressed in level (first difference), the Augmented Dickey-Fuller (1979) ADF(2) statistics tests a null hypothesis of a unit root in that variable expressed in level (first difference) against an alternative, of a stationary root. The criterion for lag selection is based on the Akaike information criterion, as described by Pantula et. Al. (1994). The critical values are taken from MacKinnon (1991). *, and ** denote rejection at 5 percent and 1 percent critical values.

Bivariate Granger Causality Tests

Bivariate Granger Causality Tests (CPI)[1]

Number of Lags

	1		2		3		4		5		6	
	F-Stat.	Prob.	F-Stat	Prob.	F-Stat	Prob.	F-Stat	Prob.	F-Stat	Prob.	F-Stat	Prob.
Curency in Circulation	**3.58**	**0.06**	**3.58**	**0.03**	**2.29**	**0.08**	**2.22**	**0.07**	1.70	0.14	1.46	0.20
Credit to the Economy	**5.83**	**0.02**	**3.49**	**0.03**	**3.96**	**0.01**	**2.62**	**0.04**	**2.11**	**0.07**	1.58	0.16
Credit to the Government	1.44	0.23	1.04	0.36	1.27	0.29	1.32	0.27	1.25	0.29	1.71	0.13
Cement Imports	0.17	0.68	0.21	0.81	0.72	0.54	0.61	0.66	0.76	0.58	1.06	0.39
Domestic Credit	0.13	0.72	0.06	0.94	0.02	1.00	0.37	0.83	0.37	0.86	1.07	0.39
Electricity Production	0.11	0.75	**3.23**	**0.04**	**2.10**	**0.11**	**2.40**	**0.06**	1.69	0.15	1.34	0.25
Volume of Imports	0.33	0.57	0.24	0.79	**2.31**	**0.08**	**6.19**	**0.00**	**4.94**	**0.00**	**3.98**	**0.00**
M1	0.43	0.51	0.58	0.56	0.43	0.73	1.10	0.36	1.09	0.37	**2.30**	**0.04**
M2	0.00	0.95	0.00	1.00	0.73	0.54	1.43	0.23	1.88	0.11	**2.53**	**0.03**
NEER	0.07	0.79	**2.72**	**0.07**	1.74	0.16	1.61	0.18	1.31	0.27	1.06	0.39
REER	0.38	0.54	1.16	0.32	0.75	0.52	1.38	0.25	1.04	0.40	1.32	0.26
DA/US$ Exchange Rate	0.32	0.57	1.20	0.31	0.82	0.49	0.66	0.62	0.49	0.78	1.15	0.34
DA/Euro Exchange Rate	0.03	0.86	**3.40**	**0.04**	**2.15**	**0.10**	1.77	0.14	1.37	0.24	1.21	0.31
Foreign CPI	1.36	0.25	0.89	0.41	0.70	0.56	**4.37**	**0.00**	**3.36**	**0.01**	**3.96**	**0.00**
Oil Prices	0.86	0.35	0.60	0.55	0.37	0.78	1.44	0.23	1.29	0.28	1.27	0.28

Bivariate Granger Causality Tests (CPI)[1]

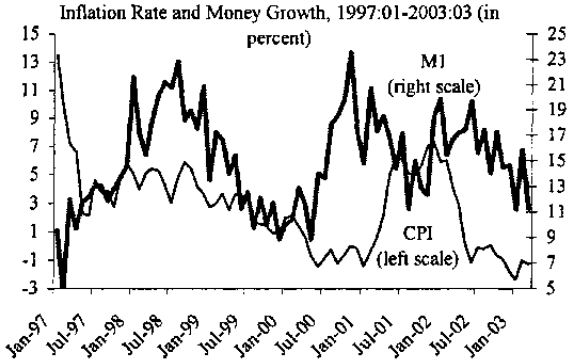
Number of Lags

	7		8		9		10		11		12	
	F-Stat	Prob.	F-Stat	Prob.	F-Stat	Prob.	F-Stat	Prob.	F-Stat	Prob.	F-Stat	Prob.
Curency in Circulation	2.00	0.07	1.84	0.08	1.90	0.06	1.53	0.15	1.57	0.13	1.01	0.45
Credit to the Economy	1.12	0.36	0.94	0.49	0.98	0.46	1.10	0.37	0.99	0.47	0.77	0.68
Credit to the Government	1.44	0.20	1.28	0.27	1.09	0.38	1.50	0.16	1.32	0.24	1.01	0.45
Cement Imports	1.04	0.41	1.70	0.11	1.66	0.12	1.39	0.21	1.48	0.16	**2.19**	**0.02**
Domestic Credit	0.94	0.48	1.26	0.28	1.13	0.36	**2.22**	**0.03**	**2.00**	**0.04**	0.93	0.52
Electricity Production	1.15	0.34	1.10	0.37	0.95	0.49	0.80	0.63	0.68	0.75	0.49	0.91
Volume of Imports	**4.01**	**0.00**	**3.47**	**0.00**	**3.67**	**0.00**	**3.03**	**0.00**	**2.58**	**0.01**	1.08	0.39
M1	**2.18**	**0.05**	**2.29**	**0.03**	**2.08**	**0.05**	**2.37**	**0.02**	**2.19**	**0.03**	1.96	0.04
M2	**2.12**	**0.05**	**2.03**	**0.05**	1.55	0.15	1.94	0.05	1.81	0.07	1.08	0.39
NEER	0.99	0.45	0.75	0.64	0.65	0.75	0.51	0.88	1.40	0.19	1.84	0.06
REER	1.02	0.43	0.93	0.49	0.79	0.63	0.84	0.59	1.56	0.13	**3.22**	**0.00**
DA/US$ Exchange Rate	1.57	0.16	1.84	0.08	**2.29**	**0.03**	**2.06**	**0.04**	**2.01**	**0.05**	1.34	0.22
DA/Euro Exchange Rate	1.10	0.37	0.90	0.52	0.79	0.63	1.03	0.43	1.73	0.09	**2.04**	**0.03**
Foreign CPI	**3.07**	**0.01**	**3.04**	**0.01**	**3.04**	**0.00**	**2.59**	**0.01**	**2.19**	**0.03**	0.89	0.56
Oil Prices	1.28	0.27	1.29	0.26	1.50	0.16	1.39	0.20	1.64	0.11	1.13	0.35

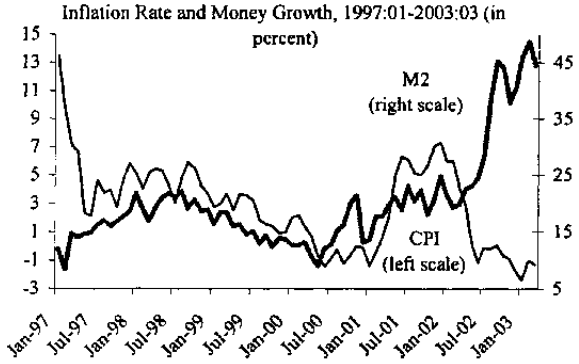
[1] P-values for the F-test of the null hypothesis that the indicator variable does not granger cause inflation beyond inflation itself.

Factors Influencing Inflation

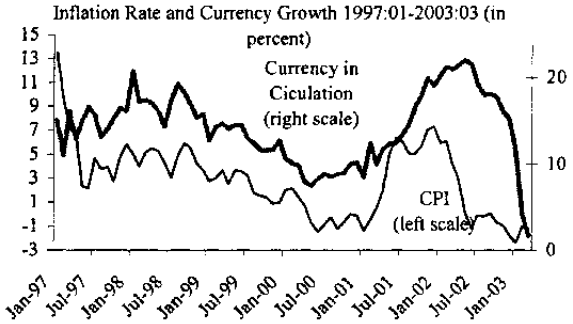
Inflation Rate and Money Growth, 1997:01-2003:03 (in percent)



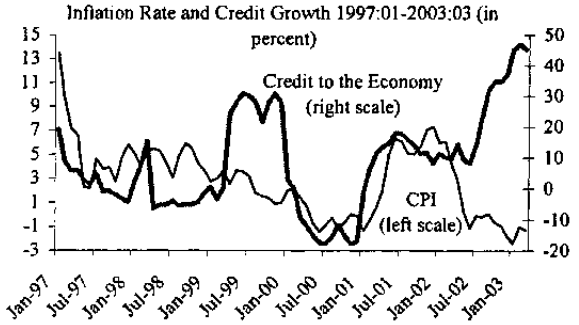
Inflation Rate and Money Growth, 1997:01-2003:03 (in percent)



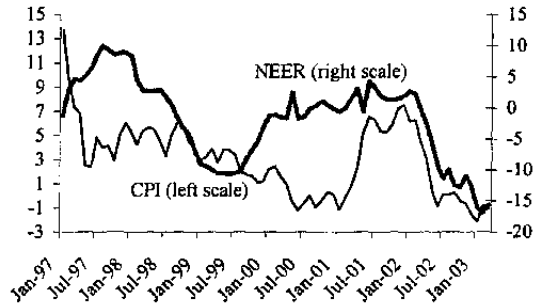
Inflation Rate and Currency Growth 1997:01-2003:03 (in percent)



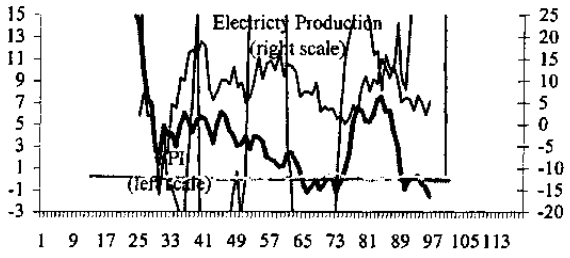
Inflation Rate and Credit Growth 1997:01-2003:03 (in percent)



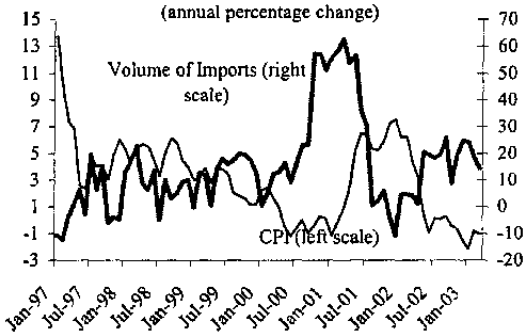
Inflation rate and Exchange rate movements, 1997:01-2003:03 (annual percentage change)



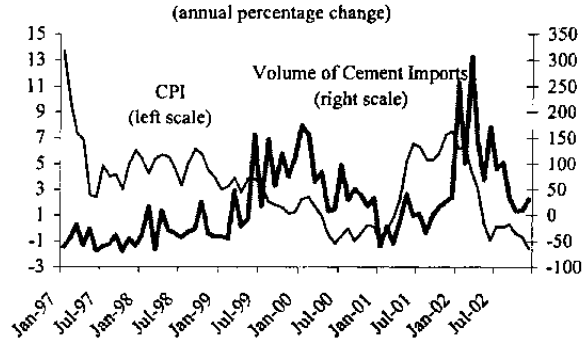
Electricity production and Inflation, 1997:01-2002:12 (annual percentage change)



Inflation rate and Growth of Import, 1997:01-2003:03 (annual percentage change)



Variations of Cement Imports and CPI, 1997:01-2002-12 (annual percentage change)



Theoretical Model of Inflation

The following theoretical model provides the background to the empirical analysis on which variables should be used in determining inflation.

The general price level can be expressed as a weighted average of the price of tradable goods (P^T) and nontradable goods (P^N):

$$\log P_t = \theta(\log P^N_t) + (1-\theta)(\log P^T_t) \qquad \text{where } 0 < \theta < 1 \qquad (1)$$

The price of tradable goods is determined in the world market and depends on foreign price P^f and on the exchange rate (e). Assuming that purchasing power parity holds, P^T can be depicted by the following expression:

$$\log P^T_t = \log e_t + \log P^f_t \qquad (2)$$

As can be seen from (2), both an increase in the exchange rate and a rise in foreign prices will lead to an increase in domestic prices.

The price of nontradable goods is assumed to be determined in the domestic money market, where the demand for nontradable goods is assumed, for simplicity, to move in line with the overall demand in the economy. Accordingly, the price of nontradable goods is determined by the money market equilibrium condition, where real money supply m_s (M^s_t/P_t) equals real money demand m_d (M^d_t/P^N_t):

$$\text{Log } P^N_t = \beta(\log M^s_t - \log m^d_t) \qquad (3)$$

where β is a scale factor representing the relationship between economy wide demand and demand for nontradable goods. It is assumed that the demand for real balances is a function of real income, wages, interest rates, and inflationary expectations.

$$m^d_t = f(y_t, w_t, r_t, E(\pi_t)) \qquad (4)$$

Expected inflation can be modeled in several ways. For simplicity, it is assumed to be determined by the inflation in the previous period:

$$E(\pi_t) = \Delta \log P_{t-1} \qquad (5)$$

The theory predicts that an increase in real income will lead to an increase in money demand, while an increase in interest rates or expected inflation will lead to a decrease in money demand. Substituting and rearranging results in the following estimable equation:

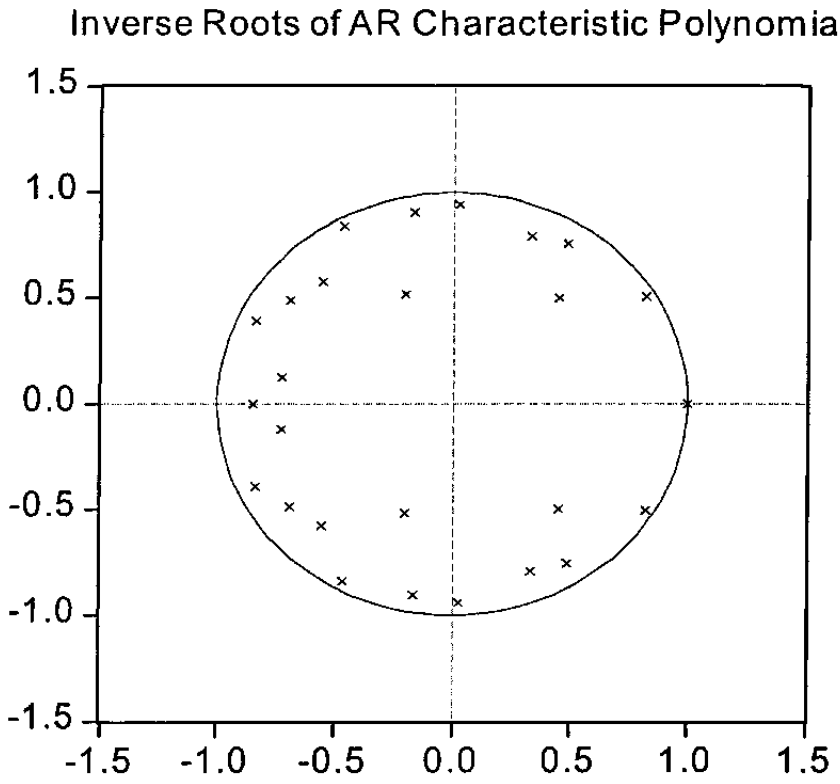
$$\log P_t = \underset{+}{\alpha} \log M_t + \underset{-}{\varphi} \log y_t + \underset{+}{\sigma} \log w_t + \underset{+}{\mu} r_t + \underset{+}{\delta} \Delta \log P_{t-1} + \underset{+}{\upsilon} \log e_t + \underset{+}{\gamma} \log P^f_t + u_t \quad (6)$$

where u_t is an error term, which is assumed to be normally distributed and of mean zero. Theory predicts that an increase in money supply, expected inflation, real wages, interest rates, the exchange rate and foreign prices will all drive prices up, while an increase in real income will lead to a decline in the inflation rate. The effect of sluggish adjustment due to rigidities and inertia can be captured by adding the effect of lagged prices to the equation.

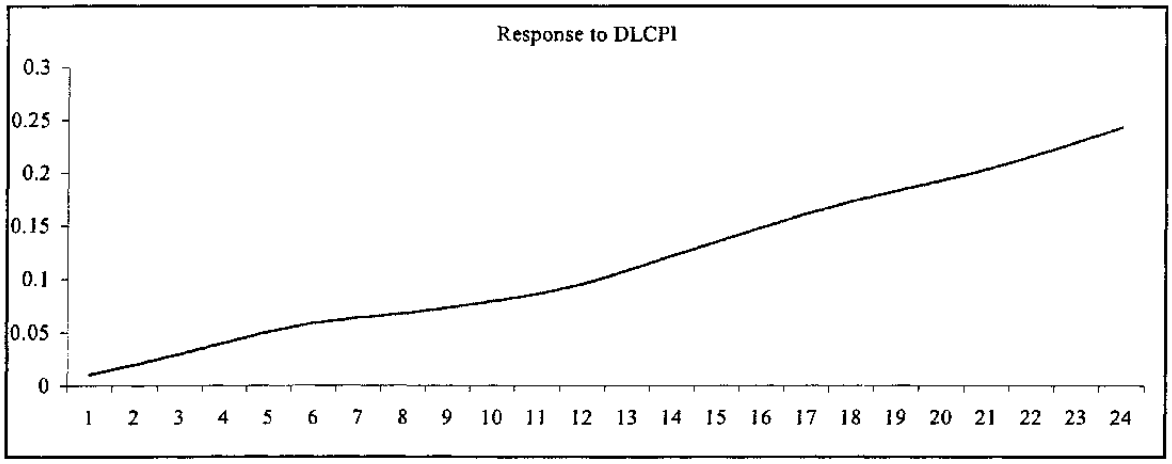
Results of Co-integration Test

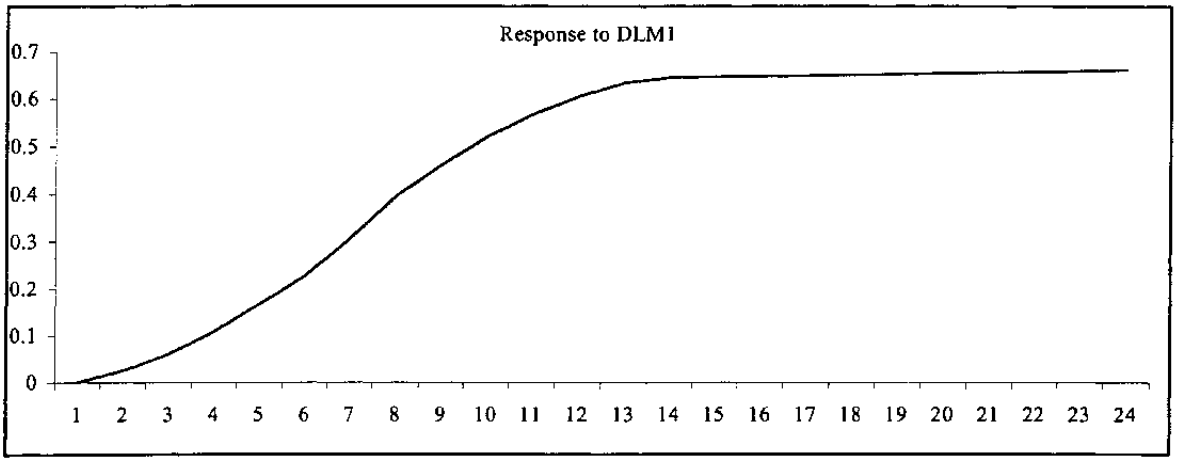
Chi-squared test statistics for lag exclusion:
Numbers in [ ] are p-values

	D(DLCPI)	D(DLM1)	D(DLNEER)	D(DLIMP)	Joint
DLag 1	25.74995 [3.55E-05]	66.36303 [1.33E-13]	27.03353 [1.96E-05]	168.1727 [0.000000]	302.6180 [0.000000]
DLag 2	21.12573 [0.000299]	39.45970 [5.60E-08]	11.41066 [0.022317]	101.4134 [0.000000]	176.1864 [0.000000]
DLag 3	23.17533 [0.000117]	21.83441 [0.000216]	4.511480 [0.341188]	62.93103 [7.02E-13]	115.1344 [0.000000]
DLag 4	29.59590 [5.91E-06]	12.92308 [0.011658]	0.953476 [0.916767]	72.82179 [5.77E-15]	121.5757 [0.000000]
DLag 5	23.69992 [9.17E-05]	11.19248 [0.024484]	0.926501 [0.920728]	81.99842 [1.11E-16]	118.7820 [0.000000]
DLag 6	11.97240 [0.017558]	6.934553 [0.139388]	0.936073 [0.919329]	36.45155 [2.34E-07]	57.29477 [1.48E-06]
df	4	4	4	4	16



Cumulative Impulse Response to a One-Standard Deviation Shock





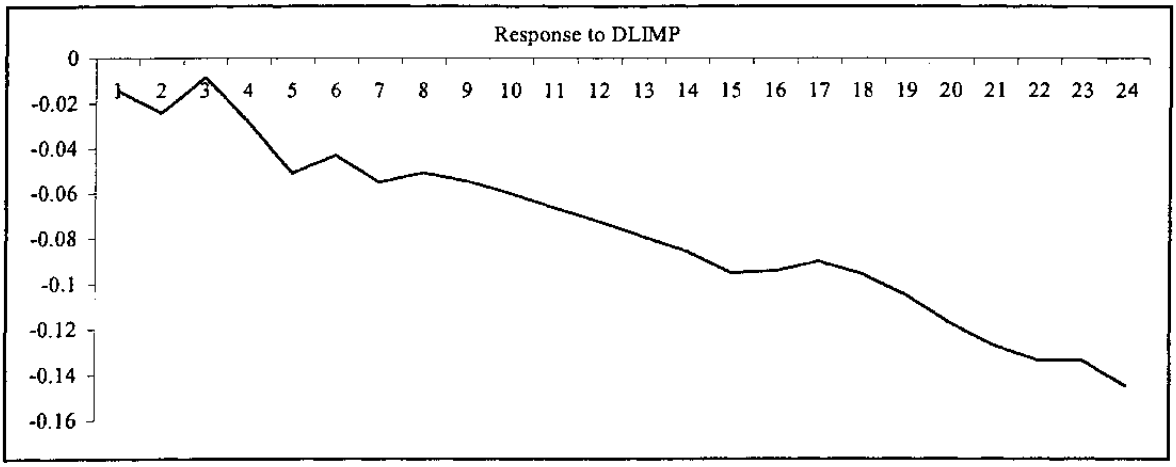


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Table 1. Algeria: Supply and Use of Resources at Current Prices, 1998–2002

	1998	1999	2000	2001	2002
	(In billions of dinars)				
Gross domestic product	2,830	3,248	4,099	4,242	4,455
Resource gap	-4	174	906	620	445
Exports of goods and nonfactor services	652	912	1,735	1,551	1,588
Imports of goods and nonfactor services	656	738	829	931	1,142
Gross domestic spending	2,834	3,074	3,193	3,622	4,010
Consumption	2,060	2,214	2,274	2,472	2,655
Government	504	544	560	625	683
Nongovernment	1,557	1,671	1,714	1,848	1,972
Gross investment	774	860	918	1,149	1,355
Gross fixed capital formation	729	790	853	966	1,102
Change in inventories	45	70	66	184	253
Gross domestic savings	770	1,034	1,824	1,770	1,801
Net factor income from abroad	-115	-148	-175	-123	-178
Net current transfers	94	94	72	105	85
National savings	749	980	1,722	1,752	1,708
Gross national product	2,716	3,101	3,924	4,119	4,278
	(In percent of GDP)				
Gross domestic product	100.0	100.0	100.0	100.0	100.0
Resource gap	-0.1	5.4	22.1	14.6	10.0
Exports of goods and nonfactor services	23.0	28.1	42.3	36.6	35.6
Imports of goods and nonfactor services	23.2	22.7	20.2	21.9	25.6
Gross domestic spending	100.1	94.6	77.9	85.4	90.0
Consumption	72.8	68.2	55.5	58.3	59.6
Government	17.8	16.7	13.7	14.7	15.3
Nongovernment	55.0	51.4	41.8	43.6	44.3
Gross investment	27.3	26.5	22.4	27.1	30.4
Gross fixed capital formation	25.7	24.3	20.8	22.8	24.7
Change in inventories	1.6	2.2	1.6	4.3	5.7
Gross domestic savings	27.2	31.8	44.5	41.7	40.4
Net factor income from abroad	-4.1	-4.5	-4.3	-2.9	-4.0
Net current transfers	3.3	2.9	1.8	2.5	1.9
National savings	26.5	30.2	42.0	41.3	38.3
Gross national product	95.9	95.5	95.7	97.1	96.0

Source: Algerian authorities.

Table 2. Algeria: Sectoral Distribution of GDP at Current Prices, 1998–2002

	1998	1999	2000	2001	2002
	(In billions of dinars)				
Hydrocarbons	638	891	1,616	1,444	1,461
Other sectors	1,965	2,131	2,232	2,507	2,704
Agriculture	325	360	346	412	415
Industry	301	308	335	314	408
Construction and public works	697	770	832	957	1,034
Nongovernment services	386	413	424	472	520
Government services	227	226	250	284	290
Imports taxes and duties	227	226	250	284	290
Gross domestic product	2,830	3,248	4,099	4,242	4,455
	(In percent of GDP)				
Hydrocarbons	22.5	27.4	39.4	34.0	32.8
Other sectors	69.4	65.6	54.5	59.1	60.7
Of which:					
Agriculture	11.5	11.1	8.4	9.7	9.3
Industry	10.6	9.5	8.2	7.4	9.2
Government services	8.0	7.0	6.1	6.7	6.5
	(Annual percentage change)				
Hydrocarbons	-12.9	39.6	81.4	-10.7	1.2
Other sectors	21.4	8.4	4.8	12.3	7.8
Of which:					
Agriculture	16.9	10.7	-3.8	18.9	0.9
Industry	35.4	2.3	8.9	-6.3	30.0
Government services	-27.6	-0.3	10.5	13.7	2.1
Gross domestic product	10.4	14.8	26.2	3.5	5.0

Source: Algerian authorities.

Table 3. Algeria: Sectoral Distribution of Real GDP Growth, 1998–2002

(In percent)

	1998	1999	2000	2001	2002
Hydrocarbons	4.0	6.2	4.9	-1.6	3.7
Other sectors					
Agriculture	11.4	2.7	-5.0	13.2	-1.3
Mining	5.5	-3.0	15.9	-2.8	6.1
Energy (nonhydroelectric) and water	8.7	7.0	2.4	5.0	4.3
Public industry	9.2	-0.8	-1.9	-1.3	-1
Food processing	14.2	-1.1	-8.9	-12.5	-19
Steel, mechanical and electrical construction	11.8	8.5	2.2	10.4	7.4
Chemical industry	16.3	-2.2	6.2	-3.1	-5.8
Textiles	0.6	-17.4	-14.4	-14.7	3.5
Leather products	-3.4	-28.9	-6.0	-0.5	-18.6
Building materials	5.3	-3.1	6.4	0.3	7.3
Wood and paper	-8.5	-16.5	-8.2	-13.1	7.7
Other	-1.9	-6.9	38.2	2.0	1.2
Private industry	5.0	8.0	5.3	3.0	6.6
Construction and public works	2.4	1.4	5.1	2.8	8.0
Nongovernment services	5.4	3.5	2.1	6.0	5.3
Government services	2.5	3.0	2.1	2.5	3.0
Import taxes and duties	5.4	-0.5	0.9	4.8	6.9
Gross domestic product	5.1	3.2	2.2	2.6	4.1
Gross domestic absorption	6.2	2.7	1.3	5.8	7.4
Consumption	2.8	1.8	2.1	2.6	3.3
Government	2.8	2.8	2.2	2.5	2.9
Nongovernment	2.9	1.5	2.1	2.7	3.2
Gross investment	3.3	2.7	3.9	2.5	7.6
Exports of goods and nonfactor services	4.7	6.4	5.8	-2.7	4.7
Imports of goods and nonfactor services	7.0	4.1	2.9	3.8	17.8
Memorandum item:					
Real per capita GDP	3.5	1.6	0.7	1.1	2.5

Source: Algerian authorities.

Table 4. Algeria: Production, Exports, and Consumption of Petroleum Products, 1998–2002

(In millions of tons)

	1998	1999	2000	2001	2002
Crude petroleum and substitutes					
Production	62.3	63.6	66.8	66.0	70.2
Crude petroleum and substitutes	38.4	39.9	41.5	40.6	45.6
Condensate 1/	16.6	16.4	17.1	16.5	15.9
Liquefied petroleum gas (LPG)	7.4	7.4	8.2	8.8	8.7
Imports	0.2	0.3	0.3	0.3	0.4
Refinery input	20.2	21.9	21.3	22.2	20.6
Direct exports	40.7	41.4	44.7	44.1	48.3
Crude	19.3	19.3	21.4	20.4	25.4
Condensate	15.5	15.3	15.9	15.6	14.8
Liquefied petroleum gas (LPG)	5.9	6.8	7.4	8.1	8.1
LPG consumption	1.5	1.5	1.6	1.7	1.7
Discrepancy 2/	0.1	-0.9	-0.5	-1.7	-0.1
Refined products					
Production	19.2	20.2	19.6	21.0	20.4
Exports	12.8	13.5	13.6	14.2	12.5
Domestic consumption	6.0	6.1	6.6	6.8	7.5
Discrepancy 2/	0.4	0.6	-0.5	0.0	0.5
Memorandum item:					
Total exports	53.5	54.9	58.3	58.3	60.8

Source: Algerian authorities.

1/ By-product of gas production.
2/ Reflects change in inventories and errors of measurement.

Table 5. Algeria: Production, Exports, and Consumption of Gas Products, 1998–2002

	1998	1999	2000	2001	2002
	(In billions of cubic meters)				
Gross production	151.7	155.8	170.2	169.6	175.2
Input into oil production	63.9	58.2	69.1	78.2	77.6
Net production 1/	87.8	97.6	101.1	91.4	97.6
Volume transported 2/	72.2	81.4	83.2	78.2	81.5
Domestic consumption	11.4	10.8	11.8	12.144	13
Sales to liquefaction plants	33.1	35.1	34.6	33.44	34.8
LNG production	24.7	25.8	26.4	25.8	26.9
Of which:					
LNG exports	24.7	25.7	26.3	25.8	26.8
Exports by pipeline	27.9	34.0	34.9	31.14	31.07
Discrepancy 3/	-0.2	1.5	1.9	1.5	2.6
	(Annual percentage change)				
Gross production	6.5	2.7	9.2	-0.4	3.3
Input into oil production	-10.0	-8.9	18.7	13.2	-0.8
Net production 1/	23.0	11.2	3.6	-9.6	6.8
Volume transported 2/	23.0	12.7	2.2	-6.0	4.2
Domestic consumption	14.0	-5.3	9.3	2.9	7.0
Sales to liquefaction plants	20.3	6.1	-1.4	-3.4	4.1
LNG production	24.7	4.5	2.3	-2.3	4.3
Of which:					
LNG exports	24.7	4.0	2.3	-1.9	3.9
Exports by pipeline	31.6	21.9	2.6	-10.8	-0.2
	(In billions of cubic meters; unless specified otherwise)				
Memorandum item:					
Total exports	52.6	59.7	61.1	56.9	57.9
Of which:					
LNG exports (in percent)	47.0	43.1	43.0	45.3	46.3
Piped exports (in percent)	53.0	56.9	57.0	54.7	53.7

Source: Algerian authorities.

1/ Net of gas reinjected into producing oil wells.
2/ Equal to net production minus gas flared, gas used for lifting and for fuel gas, and other losses in the fields.
3/ Reflects errors in measurement.

Table 6. Algeria: Domestic Prices of Major Energy Products, 1998–2002

(In dinars per liter; unless otherwise indicated)

	1998	1999	2000	2001	2002
Butane (13 kg/bottle)	157.0	157.0	157.0	157.0	157.0
Propane (35 kg/bottle)	278.0	278.0	278.0	278.0	278.0
LPG fuel (kg)	4.3	4.3	4.3	4.3	4.3
LPG carb.	7.2	7.2	7.2	7.2	7.2
Super gasoline	20.5	20.5	21.3	21.5	22.25
Regular gasoline	18.4	18.4	19.2	19.2	20.2
Gas oil	11.5	11.5	11.8	11.8	11.8
Fuel oil	9.9	9.9	9.9	9.9	9.9

Source: Algerian authorities.

Table 7. Algeria: Land Use Patterns, 1998–2002

(In thousands of hectares)

	1998	1999	2000	2001	2002
Cereals	3,575	1,887	1,057	2,402	2,402
Durum wheat	1,707	889	545	1,112	1,351
Bread wheat	870	483	282	724	814
Barley	939	468	216	516	895
Other	59	47	15	10	72
Pulses	78	72	63	60	62
Fodder crops	488	461	458	244	396
Industrial crops 1/	43	48	40	29	30
Vegetables 2/	267	275	262	114	158
Grapes	52	51	51	52	82
Fruit trees	432	462	470	466	577
Natural prairies	42	35	35	35	24
Others	3,240	4,935	5,791	4,787	3,769
Total cultivated land	8,216	8,226	8,227	8,188	8,229
Fallow	3,202	3,641	3,521	...	3,734

Source: Algerian authorities.

1/ Industrial tomatoes and tobacco.

2/ Potatoes, tomatoes, garlic and onions, and watermelons.

Table 8. Algeria: Crop Yields, 1998–2002

(In kilograms per hectare)

	1998	1999	2000	2001	2002
Cereals					
Hard wheat	878	1,010	890	1,114	1,168
Soft wheat	896	1,180	970	1,105	940
Barley	745	1,090	760	1,114	1,036
Potatoes	16,025	15,350	16,610	14,782	18,356
Pulses					
Fava beans	582	620	380	646	680
Chickpeas	614	470	340	638	774

Source: Algerian authorities.

Table 9. Algeria: Livestock, 1998–2002

(In thousands of heads)

	1998	1999	2000	2001	2002
Bovine	1,317	1,650	1,364	1,613	1,540
Ovine	17,949	18,200	17,616	17,298	17,535
Caprine	3,257	3,400	3,027	3,129	3,310
Cameline	150	220	234	245	245

Source: Algerian authorities.

Table 10. Algeria: Index of Industrial Production in Public Enterprises, 1998–2002

	Weights (In percent)	1998	1999	2000	2001	2002
			(1989 = 100)			
Water and energy	6.9	156.3	167.3	171.3	179.8	187.7
Hydrocarbons	17.8	119.2	121.5	129.3	128.5	133.8
Mining and quarrying	2.7	70.8	68.7	79.6	77.3	82.0
Mechanical and electrical	26.3	53.1	55.4	56.7	62.8	67.2
Construction materials	8.8	93.4	91.2	97.1	98.6	106.9
Chemicals	7.0	93.2	91.6	97.2	94.3	88.8
Food processing	14.5	95.4	93.9	85.5	74.9	60.5
Textiles	9.2	48.1	39.0	33.4	28.6	29.6
Leather and hides	2.2	22.4	16.5	15.5	16.1	13.0
Woods and paper	4.6	45.3	38.8	35.6	31.0	31.4
General index	100.0	83.8	83.8	85.2	85.0	86.2
General index (excluding hydrocarbons)	n.a.	75.6	75.1	75	74.6	75.1
General index of manufactured commodities	n.a.	69.0	67.7	66.8	66.2	65.4
			(Annual percentage change)			
Water and energy	n.a.	3.9	7.0	2.4	5.0	4.4
Hydrocarbons	n.a.	4.4	1.9	6.4	-0.6	4.1
Mining and quarrying	n.a.	-13.5	-3.0	15.9	-2.9	6.1
Mechanical and electrical	n.a.	-21.1	4.3	2.3	10.8	7.0
Construction materials	n.a.	-5.1	-2.4	6.5	1.5	8.4
Chemicals	n.a.	6.5	-1.7	6.1	-3.0	-5.8
Food processing	n.a.	-2.4	-1.6	-8.9	-12.4	-19.2
Textiles	n.a.	43.8	-18.9	-14.4	-14.4	3.5
Leather and hides	n.a.	49.1	-26.3	-6.1	3.9	-19.3
Woods and paper	n.a.	35.1	-14.3	-8.2	-12.9	1.3
General index	n.a.	7.2	0.0	1.7	-0.2	1.4
General index (excluding hydrocarbons)	n.a.	9.7	-0.7	-0.5	-0.5	0.7
General index of manufactured commodities	n.a.	9.4	-1.9	-1.3	-0.9	-1.2

Source: Algerian authorities.

Table 11. Algeria: Production of Minerals, 1998–2002 1/

	1998	1999	2000	2001	2002
	(In thousands of tons; unless otherwise indicated)				
Iron ore	1,783	1,337	1,609	1,271	962
Phosphates	1,155	1,097	796	901	740
Zinc and lead	10	10	11	11	9
Mercury 2/	7	7	6	9	9
	(Annual percentage change)				
Iron ore	-28.1	-25.0	20.3	-21.0	-24.3
Phosphates	1.1	-5.0	-27.4	13.2	-17.9
Zinc and lead	17.4	0.0	10.8	-0.9	-19.6
Mercury 2/	27.9	7.7	-11.4	50.0	-4.3

Source: Algerian authorities.

1/ Excluding hydrocarbons.
2/ In thousands of containers, each weighing 34 kilograms.

Table 12. Algeria: Consumer Price Index, 1998–2002 1/

	Weights (In percent)	1998	1999	2000	2001	2002
			(1989 = 100)			
Foodstuffs, beverages, and tobacco	44.1	570.5	577.2	572.8	604.4	606.0
Clothing and shoes	11.6	388.5	418.3	424.0	439.1	443.9
Housing costs	5.6	580.6	597.1	607.2	622.4	622.5
Furniture	6.8	354.7	362.8	365.9	373.4	374.8
Health and medical care	3.4	556.7	581.4	603.1	644.0	660.5
Transportation and communications	11.5	459.5	473.1	484.2	500.1	514.4
Education and entertainment	6.5	496.8	484.6	461.7	464.6	469.2
Other services	10.5	590.9	631.4	647.8	668.5	707.0
General index	100.0	519.4	533.2	535.0	557.6	565.5
			(Annual percentage change)			
Foodstuffs, beverages, and tobacco	n.a.	5.7	1.2	-0.8	5.5	0.3
Clothing and shoes	n.a.	6.3	7.6	1.4	3.6	1.1
Housing costs	n.a.	19.3	2.8	1.7	2.5	0.0
Furniture	n.a.	4.1	2.3	0.9	2.0	0.4
Health and medical care	n.a.	10.0	4.4	3.7	6.8	2.6
Transportation and communications	n.a.	4.8	3.0	2.3	3.3	2.9
Education and entertainment	n.a.	-3.8	-2.5	-4.7	0.6	1.0
Other services	n.a.	5.5	6.9	2.6	3.2	5.8
General index	n.a.	5.7	2.6	0.3	4.2	1.4

Source: Algerian authorities.

1/ Includes 256 items and covers households in the area of Algiers.

Table 13. Algeria: Income of Households, 1998–2002

(In billions of dinars)

	1998	1999	2000	2001	2002
Wages and salaries 1/	781.2	826.5	866.1	957.0	1,030.3
Agriculture	37.4	39.3	39.2	42.4	43.3
Central government	365.8	394.0	410.4	464.3	500.3
Other sectors	378.0	393.2	416.5	450.3	486.7
Self-employed	723.3	792.9	825.4	938.2	1,006.3
Transfers	344.2	402.7	431.3	501.4	546.0
Gross income	1,848.7	2,022.1	2,122.8	2,396.6	2,582.6
Disposable income	1,663.6	1,838.2	1,901.9	2,141.5	2,301.9

Source: Algerian authorities.

1/ Includes social security contributions paid by employees.

Table 14. Algeria: Labor Force, Employment, and Unemployment, 1998–2002 1/

(In thousands; unless otherwise indicated)

	1998	1999	2000	2001	2002
Labor force	8,326	8,583	8,850	9,074	9,303
Agriculture	1,180	1,185	1,185	1,328	1,438
Other sectors	7,146	7,398	7,665	7,746	7,865
Employment	4,858	4,898	4,977	5,198	5,435
Agriculture	1,180	1,185	1,185	1,328	1,438
Other sectors	3,678	3,713	3,792	3,870	3,997
Industry	493	493	497	502	504
Construction and public works	740	743	781	803	860
Government	1,415	1,420	1,440	1,456	1,476
Other	1,030	1,057	1,074	1,109	1,157
Work at home 2/	1,135	1,175	1,263	1,398	1,455
Unemployed	2,333	2,510	2,610	2,478	2,413
(in percent of labor force)	28.0	29.2	29.5	27.3	25.9

Source: Algerian authorities.

1/ Data are not strictly comparable over time, as surveys are conducted in different months and use different classifications.

2/ Including military draft and irregular employment.

Table 15. Algeria: Summary of Central Government Operations, 1998–2002

(In billions of dinars)

	1998	1999	2000	2001	2002
Total budget revenue and grants	774.6	972.8	1,578.1	1,479.0	1,603.2
Hydrocarbon revenue 1/	425.9	588.3	1,213.2	1,001.4	1,007.9
Nonhydrocarbon revenue 2/	348.7	380.6	364.9	462.0	595.1
Tax revenue	329.8	338.9	349.5	398.2	482.9
Taxes on income and profits	88.1	79.4	82.0	98.5	112.2
Taxes on goods and services	154.9	163.5	165.0	179.2	223.4
Customs duties	75.5	82.4	86.3	103.7	128.4
Registration and stamps	11.3	13.6	16.2	16.8	18.9
Nontax revenues	18.9	41.7	15.4	63.8	112.2
Fees	14.7	14.6	15.4	16.7	74.6
Bank of Algeria dividends	4.2	27.1	0.0	46.5	37.6
Dividends from Holdings	0.0	0.0	0.0	0.6	0.0
Grants	0.0	3.9	0.0	15.6	0.2
Total budget expenditure	875.8	1,034.4	1,178.1	1,321.0	1,550.5
Current expenditure	663.9	768.6	856.2	963.6	1,097.6
Personnel expenditure	268.6	283.5	289.6	324.0	346.2
Mudjahidins' pensions	37.9	61.7	57.7	54.4	73.8
Material and supplies	47.5	53.6	54.6	46.3	68.5
Current transfers 3/	199.1	245.8	292.0	391.4	471.9
Interest payments	110.8	123.9	162.3	147.5	137.2
Capital expenditure	211.9	265.8	321.9	357.4	452.9
Budget balance	-101.2	-61.5	400.0	158.0	52.7
Special accounts balance	-6.9	-3.0	-0.7	-20.0	-11.2
Net lending by the treasury	0.1	0.0	0.5	-6.5	30.9
Primary balance 4/	2.7	59.0	561.1	292.0	147.7
Overall balance 4/	-108.1	-64.5	398.8	144.5	10.5
Financing	108.1	64.5	-398.8	-144.5	-10.4
Bank 5/	95.9	64.4	-407.4	-145.9	15.5
Nonbank	20.2	72.7	105.7	112.1	48.9
Foreign 6/	-8.0	-72.6	-97.1	-110.7	-74.9

Source: Algerian authorities.

1/ Including dividends on current profits paid by Sonatrach.
2/ Excluding privatization receipts, which are reclassified under nonbank financing.
3/ Covers expenditures for food subsidies, agricultural price support, and cash transfers for the poor.
4/ Including special accounts, net lending and operations of the Rehabilitation Fund.
5/ Including debt rescheduling proceeds blocked on account at the Bank of Algeria.
6/ Includes external debt rescheduling proceeds.

Table 16. Algeria: Composition of Central Government Revenue, 1998–2002

	1998	1999	2000	2001	2002
	(In billions of dinars)				
Total budget revenue and grants	774.6	972.8	1,578.1	1,479.0	1,603.2
Hydrocarbon revenue	425.9	588.3	1,213.2	1,001.4	1,007.9
Of which:					
Sonatrach Dividends	47.3	28.1	40.0	45.0	65.0
Nonhydrocarbon revenue	348.7	380.7	364.9	462.0	595.1
Tax revenue	329.8	338.9	349.5	398.2	482.9
Taxes on income and profits	88.1	79.4	82.0	98.5	112.2
Wage income taxes	42.5	35.5	34.9	45.5	52.7
Other	45.6	44.0	47.1	53.0	59.6
Taxes on goods and services	154.9	163.5	165.0	179.2	223.4
VAT and excises on imports	51.5	57.0	54.5	60.8	79.2
VAT and excises on domestic activities	70.7	71.9	72.1	80.1	101.1
TVA-TC-TSA domestic transactions	49.1	47.9	47.8	55.0	70.9
Tobacco excises (TIC)	21.6	24.1	24.3	25.2	30.2
VAT on petroleum products/levy	9.8	10.4	11.2	10.5	9.9
Excises on petroleum products	21.6	20.8	25.7	27.3	32.5
Other indirect taxes	1.4	0.7	1.5	0.5	0.8
Customs duties	75.5	82.4	86.3	103.7	128.4
Registration and stamps	11.3	13.6	16.2	16.8	18.9
Nontax revenue	18.9	41.7	15.4	63.8	112.2
Fees 1/	14.7	14.6	15.4	16.7	74.6
Bank of Algeria dividends	4.2	27.1	0.0	46.5	37.6
Dividends from holdings	0.0	0.0	0.0	0.6	0.0
Grants	0.0	3.9	0.0	15.6	0.2
	(In percent of total budget revenue and grants)				
Total budget revenue and grants	100.0	100.0	100.0	100.0	100.0
Hydrocarbon revenue	55.0	60.5	76.9	67.7	62.9
Nonhydrocarbon revenue	45.0	39.1	23.1	31.2	37.1
Tax revenue	42.6	34.8	22.1	26.9	30.1
Taxes on income and profits	11.4	8.2	5.2	6.7	7.0
Taxes on goods and services	20.0	16.8	10.5	12.1	13.9
Customs duties	9.7	8.5	5.5	7.0	8.0
Registration and stamps	1.5	1.4	1.0	1.1	1.2
Nontax revenue	2.4	4.3	1.0	4.3	7.0
Grants	0.0	0.4	0.0	1.1	0.0

Source: Algerian authorities.

1/ For 2001, privatization receipts of DA 27.1 billion were reclassified in financing.

Table 17. Algeria: Central Government Revenue, 1998–2002

(In percent of GDP)

	1998	1999	2000	2001	2002
Total budget revenue	27.4	29.9	38.5	34.9	36.0
Hydrocarbon revenue	15.0	18.1	29.6	23.6	22.6
Of which:					
Sonatrach dividends	1.7	0.9	1.0	1.4	1.5
Nonhydrocarbon revenue	12.3	11.7	8.9	10.9	13.4
Tax revenue	11.7	10.4	8.5	9.4	10.8
Taxes on income and profits	3.1	2.4	2.0	2.3	2.5
Wage income taxes	1.5	1.1	0.9	1.1	1.2
Other	1.6	1.4	1.1	1.3	1.3
Taxes on goods and services	5.5	5.0	4.0	4.2	5.0
VAT and excises on imports	1.8	1.8	1.3	1.4	1.8
VAT and excise on domestic transactions	2.5	2.2	1.8	1.9	2.3
TVA-TC-TSA domestic transactions	1.7	1.5	1.2	1.3	1.6
Tobacco excises (TIC)	0.8	0.7	0.6	0.6	0.7
VAT on petroleum products/levy	0.3	0.3	0.3	0.2	0.2
Excises on petroleum products	0.8	0.6	0.6	0.6	0.7
Other indirect taxes	0.0	0.0	0.0	0.0	0.0
Customs duties	2.7	2.5	2.1	2.4	2.9
Registration and stamps	0.4	0.4	0.4	0.4	0.4
Nontax revenue	0.7	1.3	0.4	2.1	2.5
Fees	0.5	0.5	0.4	0.4	1.7
Bank of Algeria dividends	0.1	0.8	0.0	1.1	0.8
Dividends from holdings	0.0	0.0	0.0	0.0	0.0

Source: Algerian authorities.

Table 18. Algeria: Composition of Central Government Expenditure, 1998–2002

	1998	1999	2000	2001	2002
			(In billions of dinars)		
Total budget expenditure	875.8	1,034.4	1,178.1	1,321.0	1,550.5
Current expenditure	663.9	768.6	856.2	963.6	1,097.6
Personnel expenditure	268.6	283.6	289.6	324.0	346.2
Wages and salaries	258.2	275.6	281.1	315.4	339.9
Other	10.4	8.0	8.5	8.6	6.3
Mudjahidins' pensions	37.9	61.7	57.7	54.4	73.8
Material and supplies	47.5	53.6	54.6	46.3	68.5
Public services	75.2	81.9	92.0	114.6	137.6
Hospitals	28.8	31.2	33.0	41.4	49.2
Other	46.4	50.6	59.0	73.2	88.4
Current transfers	123.9	163.9	200.0	276.8	334.3
Family allowances	42.5	36.2	29.0	25.9	38.1
Public works and social assistance	13.6	14.0	16.1	1.2	2.4
Food subsidies	0.2	0.2	0.5	0.2	0.5
Agricultural price support	5.3	6.0	5.8	23.5	37.4
Housing	19.0	16.0	8.6	26.4	14.5
Youth Employment Support Fund	5.3	5.3	6.2	7.4	4.9
Other transfers	38.0	86.2	133.8	192.1	236.5
Interest on debt	110.8	123.9	162.3	147.5	137.2
Capital expenditure	211.9	265.8	321.9	357.4	452.9
Special accounts balance	-6.9	-3.0	-0.7	-20.0	-11.2
Net lending by the treasury	0.1	0.0	0.5	-6.5	30.9
Allocation to the Rehabilitation Fund 1/	0.0	0.0	0.0	0.0	0.0
Total expenditure 2/	882.8	1,037.4	1,179.3	1,334.5	1,592.6
			(In percent of total expenditure)		
Total expenditure	100.0	100.0	100.0	100.0	100.0
Total budget expenditure	99.2	99.7	99.9	99.0	97.4
Current expenditure	75.2	74.1	72.6	72.2	68.9
Personnel expenditure	30.4	27.3	24.6	24.3	21.7
Wages and salaries	29.2	26.6	23.8	23.6	21.3
Mudjahidins' pensions	4.3	5.9	4.9	4.1	4.6
Material and supplies	5.0	5.2	4.6	3.5	4.3
Public services	8.5	7.9	7.8	8.6	8.6
Current transfers	14.0	15.8	17.0	20.7	21.0
Food subsidies	0.0	0.0	0.0	0.0	0.0
Other trasfers	4.3	8.3	11.3	14.4	14.8
Interest payments	12.6	11.9	13.8	11.1	8.6
Capital expenditure	24.0	25.6	27.3	26.8	28.4
Special accounts balance	-0.8	-0.3	-0.1	-1.5	-0.7
Net lending by the treasury	0.0	0.0	0.0	-0.5	1.9
Allocation to the Rehabilitation Fund	0.0	0.0	0.0	0.0	0.0

Source: Algerian authorities.

1/ Excluding the compensation for commercial banks' foreign exchange losses on principal payments of external debt contracted on behalf of the treasury.
2/ Including net lending and allocations to the Rehabilitation Fund.

Table 19. Algeria: Central Government Expenditure, 1998–2002

(In percent of GDP)

	1998	1999	2000	2001	2002
Total expenditure 1/	30.9	31.8	28.7	31.1	34.8
Current expenditure	23.5	23.7	20.9	22.7	24.6
Personnel	9.5	8.7	7.1	7.6	7.8
Wages and salaries	9.1	8.6	6.9	7.4	7.6
Other	0.4	0.1	0.2	0.2	0.1
Mudjahidins' pensions	1.3	1.9	1.4	1.3	1.7
Material and supplies	1.7	1.6	1.3	1.1	1.5
Public services	2.7	2.5	2.2	2.7	3.1
Hospitals	1.0	1.0	0.8	1.0	1.1
Others (government entities)	1.6	1.6	1.4	1.7	2.0
Current transfers	4.4	5.1	4.9	6.5	7.5
Family allowances	1.5	1.1	0.7	0.6	0.9
Public works and social assistance	0.5	0.4	0.4	0.0	0.1
Agricultural price support	0.2	0.2	0.1	0.6	0.8
Housing	0.7	0.5	0.2	0.6	0.3
Youth Employment Support Fund	0.2	0.2	0.2	0.2	0.1
Other transfers	1.3	2.7	3.3	4.5	5.3
Interests on debt	3.9	3.8	4.0	3.5	3.1
Capital expenditure	7.5	8.2	7.9	8.4	10.2
Special accounts balance	-0.2	-0.1	0.0	-0.5	-0.3
Net lending by the treasury	0.0	0.0	0.0	-0.2	0.7
Allocation to the Rehabilitation & Recapitalization Fund 2/	0.0	0.0	0.0	0.0	0.0

Source: Algerian authorities.

1/ Including net lending and operations of the Rehabilitation Fund.
2/ Excluding the compensation for commercial bank's foreign exchange losses on principal payments of external debt contracted on behalf of the treasury.

Table 20. Algeria: Sectoral Allocation of Budgetary Capital Expenditure, 1997–2001 1/

	1997	1998	1999	2000	2001
			(In millions of dinars)		
Agriculture and fishery	5,878	7,469	6,562	8,595	20,339
Irrigation and waterworks	23,120	29,804	31,649	34,462	38,127
Industry and energy	6,810	8,620	8,553	7,278	6,448
Tourism	13	11	13	9	126
Economic infrastructure	27,037	23,262	30,068	34,501	53,903
Housing	9,848	52,693	60,709	69,511	78,248
Education and professional training	28,811	33,527	35,177	38,819	53,762
Social infrastructure	7,298	8,857	9,187	12,298	17,499
Administrative infrastructure	14,164	23,295	22,905	29,341	31,125
Urban development	20,388	20,789	23,056	30,948	36,067
Not allocated	50,327	21,373	21,683	24,470	35,437
Total	237,194	229,700	249,562	290,232	371,081
			(Annual percentage change)		
Agriculture and fishery	-18.6	27.1	-12.1	31.0	136.6
Irrigation and waterworks	35.3	28.9	6.2	8.9	10.6
Industry and energy	17.5	26.6	-0.8	-14.9	-11.4
Tourism	62.5	-15.4	18.2	-30.8	1,300.0
Economic infrastructure	21.9	-14.0	29.3	14.7	56.2
Housing	11.4	435.1	15.2	14.5	12.6
Education and professional training	18.2	16.4	4.9	10.4	38.5
Social infrastructure	-10.7	21.4	3.7	33.9	42.3
Administrative infrastructure	15.2	64.5	-1.7	28.1	6.1
Urban development	-1.8	2.0	10.9	34.2	16.5
Not allocated	11.4	-57.5	1.5	12.9	44.8
Total	12.7	-3.2	8.6	16.3	27.9
			(In percent of total)		
Agriculture and fishery	2.5	3.3	2.6	3.0	5.5
Irrigation and waterworks	9.7	13.0	12.7	11.9	10.3
Industry and energy	2.9	3.8	3.4	2.5	1.7
Tourism	0.0	0.0	0.0	0.0	0.0
Economic infrastructure	11.4	10.1	12.0	11.9	14.5
Housing	4.2	22.9	24.3	24.0	21.1
Education and professional training	12.1	14.6	14.1	13.4	14.5
Social infrastructure	3.1	3.9	3.7	4.2	4.7
Administrative infrastructure	6.0	10.1	9.2	10.1	8.4
Urban development	8.6	9.1	9.2	10.7	9.7
Not allocated	21.2	9.3	8.7	8.4	9.5
Total	100.0	100.0	100.0	100.0	100.0

Source: Algerian authorities.

1/ Data are on a commitment basis.

Table 21. Algeria: Central Government Domestic Debt, 1998–2002

(In billions of dinars; end of period)

	1998	1999	2000	2001	2002
Total domestic debt 1/	616.2	1,059.4	1,022.9	999.4	980.5
Treasury, equipment and C/C bills	80.0	114.9	80.5	83.4	107.7
Central bank overdrafts	164.4	152.4	146.4	139.1	131.8
Refinancing bonds	371.8	728.9	735.1	718.2	684.4
Public enterprises, EPIC, agroindustries	227.7	236.5	224.6	212.7	200.8
Supplementary restructuring debt	0.0	332.1	346.2	311.6	297.2
OPGI (real estate companies)	106.3	124.6	161.0	161.0	144.9
Farmers' debt	0.0	0.0	0.0	15.0	14.2
Banks	35.8	35.7	0.0	15.2	25.2
Solidarity bonds	2.0	0.0	0.0	0.0	0.0
Obligations of CNAC	0.0	0.0	3.3	2.7	2.1
Bonds (CNR)	0.0	46.3	43.2	40.1	37.0
Bonds (CNAS)	0.0	16.9	17.7	18.6	19.6
Memorandum items:					
Domestic debt as percent of GDP	21.8	32.6	25.0	23.6	22.0
GDP (In billions of dinars)	2,830	3,248	4,099	4,242	4,455

Source: Algerian authorities.

1/ Excluding the blocked account at the Bank of Algeria and other deposits.

Table 22. Algeria: Housing Supply, 1998–2002

	1998	1999	2000	2001	2002
	(In thousands of dwellings delivered)				
Formal	121.4	124.2	130.1	102.0	104.3
Social	112.1	116.8	120.5	96.0	95.7
Rental	51.6	42.0	60.5	45.8	50.9
Owner occupied	60.5	74.8	60.0	50.2	44.8
Other formal	9.3	7.4	9.6	6.0	8.6
Public	8.3	6.6	7.4	4.8	6.4
Private	1.0	0.8	2.2	1.1	2.2
Autoconstruction	30.0	30.0	32.0	30.0	29.6
Total	151.4	154.2	162.1	132.0	133.9
	(In percent of total)				
Formal	80.2	80.5	80.3	77.3	77.9
Social	74.0	75.8	74.4	72.7	71.5
Rental	34.1	27.2	37.3	34.7	38.0
Owner occupied	40.0	48.5	37.0	38.0	33.4
Other formal	6.1	4.8	5.9	4.5	6.4
Public	5.5	4.3	4.6	3.7	4.8
Private	0.7	0.5	1.3	0.9	1.6
Autoconstruction	19.8	19.5	19.7	22.7	22.1
Total	100.0	100.0	100.0	100.0	100.0

Source: Algerian authorities.

Table 23. Algeria: Monetary Survey, 1998–2002 1/

	1998	1999	2000	2001	2002
			(In billions of dinars)		
Foreign assets (net)	280.7	169.6	775.9	1,310.8	1,755.7
Central bank	278.7	172.6	774.3	1,313.6	1,742.7
Commercial banks	2.0	-3.0	1.6	-2.8	13.0
Net domestic assets	1,315.4	1,619.7	1,249.3	1,164.5	1,150.1
Domestic credit	1,629.4	1,998.6	1,671.1	1,647.8	1,845.5
Credit to government (net)	723.2	847.9	677.4	569.7	578.7
Central bank 2/	99.3	159.0	-156.4	-276.3	-304.8
Commercial banks 3/	535.5	592.1	737.7	739.6	774.0
CCP and treasury deposits	88.4	96.8	96.1	106.4	109.5
Credit to the nongovernment 3/	906.2	1,150.7	993.7	1,078.1	1,266.8
Government lending funds	-15.2	-14.5	-22.3	-12.7	-36.2
Medium- and long-term foreign liabilities	-39.0	-39.5	-27.6	-24.5	-36.6
Other items (net)	-259.8	-324.9	-372.1	-446.1	-622.6
Money plus quasi-money	1,596.1	1,789.4	2,025.2	2,475.2	2,905.8
Money	826.4	905.2	1,048.1	1,238.5	1,416.3
Currency outside banks	390.4	440.0	484.5	577.2	664.7
Demand deposits	347.6	368.4	467.5	554.9	642.2
Deposits with the treasury and the postal checking system	88.4	96.8	96.1	106.4	109.5
Quasi-money	769.7	884.2	977.0	1,236.7	1,489.5
			(Annual percentage change)		
Money and quasi-money	18.2	12.1	13.2	22.2	17.4
Money	14.0	9.5	15.8	18.2	14.4
Quasi-money	25.8	15.4	10.5	26.6	20.4
Net domestic assets	-6.4	23.5	-22.9	-6.8	-1.2
Domestic credit	10.2	22.7	-16.4	-1.4	12.0
Credit to government 3/	51.0	17.2	-20.1	-15.9	1.6
Credit to nongovernment 3/	-4.6	27.0	-13.6	8.5	17.5
			(In percent)		
Memorandum items:					
Total liquidity/GDP	56.4	55.1	49.4	58.4	65.2
Money/GDP	29.2	27.9	25.6	29.2	31.8
Currency outside banks/GDP	13.8	13.5	11.8	13.6	14.9
Domestic credit/GDP	57.6	61.5	40.8	38.8	41.4
Money/M2	51.8	50.6	51.8	50.0	48.7
Currency outside banks/M2	24.5	24.6	23.9	23.3	22.9
Money multiplier	3.9	4.0	3.7	3.2	3.4
Nominal GDP (in billions of dinars)	2,830	3,248	4,099	4,242	4,455

Source: Bank of Algeria and IMF staff estimates.

1/ Including savings banks. Money and quasi-money include deposits of financial institutions in the banking system

2/ Includes, as a net item, deposits of the BAD and ministries with the central bank.

3/ This includes the impact of banks' restructuring packages. The conversion of banks' claims on public enterprises in banks' claims on the government results, other things being equal, in a decrease in credit to the economy and an equal increase in credit to the government.

Table 24. Algeria: Balance Sheet of the Bank of Algeria, 1998–2002

	1998	1999	2000	2001	2002
	(In billions of dinars)				
Net foreign assets	278.7	172.6	774.3	1,313.6	1,742.0
Net domestic assets	124.8	276.9	-224.1	-535.8	-896.1
Credit to government	99.3	159.0	-156.4	-276.3	-304.8
Credit to banks	226.3	310.8	170.5	0.0	0.0
Other credit	0.3	0.6	0.7	0.7	0.8
Other items net	-201.1	-193.5	-238.9	-260.2	-592.1
Reserve money	403.5	449.5	550.2	777.8	846.6
Currency in circulation	396.4	444.9	491.5	584.5	673.7
Bankers deposits	7.1	4.6	58.7	193.3	172.9
	(Annual change; in billions of dinars)				
Net foreign assets	-64.2	-106.1	601.7	539.3	428.4
Net domestic assets	-58.7	152.1	-501.0	-311.7	-360.3
Credit to government	-73.1	59.7	-315.4	-119.9	-28.5
Credit to banks	-32.8	84.5	-140.3	-170.5	0.0
Other credit	0.3	0.3	0.1	0.0	0.1
Other items net	47.0	7.6	-45.4	-21.3	-331.9
Reserve money	97.6	46.0	100.7	227.6	68.8
Currency in circulation	102.9	48.5	46.6	93.0	89.2
Bankers deposits	-5.3	-2.5	54.1	134.6	-20.4
	(Annual percentage change)				
Net foreign assets	180.1	-38.1	348.6	69.7	32.6
Net domestic assets	-92.5	121.9	-180.9	139.1	67.2
Credit to government	-9.7	60.1	-198.4	76.7	10.3
Credit to banks	-15.5	37.3	-45.1	-100.0	...
Reserve money	16.6	11.4	22.4	41.4	8.8
Currency in circulation	16.4	12.2	10.5	18.9	15.3
Bankers deposits	20.2	-35.2	1,176.1	229.3	-10.6

Source: Bank of Algeria.

Table 25. Algeria: Distribution of Credit to the Economy by Maturity, 1998–2002 1/

	1998	1999	2000	2001	2002
		(In billions of dinars; end of period)			
Short-term	405.8	552.1	467.0	513.3	628.0
Medium-term	458.2	565.0	492.9	529.5	602.8
Long-term	42.2	33.6	33.8	35.6	36.0
Total	906.2	1150.7	993.7	1078.4	1266.8
		(Annual percentage change)			
Short-term	...	36.1	-15.4	9.9	22.3
Medium-term	...	23.3	-12.8	7.4	13.8
Long-term	...	-20.4	0.6	5.3	1.1
Total	...	27.0	-13.6	8.5	17.5
		(In percent of total credit)			
Short-term	44.8	48.0	47.0	47.6	49.6
Medium-term	50.6	49.1	49.6	49.1	47.6
Long-term	4.7	2.9	3.4	3.3	2.8
Total	100.0	100.0	100.0	100.0	100.0

Source: Bank of Algeria.

1/ Credit to the economy has been affected by banks restructuring packages. The conversion of banks' claims on public enterprises in banks' claims on the government results, other things being equal, in a decrease in credit to the economy.

Table 26. Algeria: Distribution of Credit to the Economy by Sector, 1998–2002 1/

	1998	1999	2000	2001	2002
		(In billions of dinars; end of period)			
Public sector	733.7	929.6	701.8	740.3	715.5
Private sector	172.4	221.0	291.7	337.9	551.0
Local administration	0.1	0.1	0.2	0.2	0.3
Total	906.2	1,150.7	993.7	1,078.4	1,266.8
		(Annual percentage change)			
Public sector	...	26.7	-24.5	5.5	-3.3
Private sector	...	28.2	32.0	15.8	63.1
Local administration	...	0.0	100.0	0.0	50.0
Total	...	27.0	-13.6	8.5	17.5
		(In percent of total credits)			
Public sector	81.0	80.8	70.6	68.6	56.5
Private sector	19.0	19.2	29.4	31.3	43.5
Local administration	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0

Source: Bank of Algeria.

1/ Credit to the economy has been affected by banks restructuring packages. The conversion of banks' claims on public enterprises in banks' claims on the government results, other things being equal, in a decrease in credit to the economy.

Table 27. Algeria: Structure of Interest Rates, 1998–2002

(In percent per annum)

	As of Dec. 1998	As of Dec. 1999	As of Dec. 2000	As of Dec. 2001	As of Dec. 2002
Central bank rediscount	9.5	8.5	6.0	6.0	5.5
Central bank overdraft	19.0	19.0	19.0	19.0	19.0
Money market					
Repurchase agreements 1/	13.00	12.00	10.75	...	...
Auctions	11.82	11.10	8.29	...	...
Commercial banks' deposit rate 2/	8.5-12.0	8.5-10.0	7.0-8.5	5.50-6.75	4.50-9.00
Commercial banks' lending rate	8.5-12.5	8.5-11.3	8.5-11.2	8.0-11.0	8.00-9.75
Foreign currency deposits					
Denominated in U.S. dollars 3/	5.35	5.20	...	...	...
CNEP (savings and housing)	...	...	...	...	...
Deposit rate	...	...	...	...	...
Savings	12.0	7.5-9.0	6.5-7.0	5.0-6.0	5.0-6.0
Housing	10.0	7.0-9.0	6.0-6.5	5.50	5.50
Lending rate (housing)					
Individuals	8.5-10.0	8.5-10.25	10.5-10.25	8.00-9.75	7.5-8.0
Developers	8.5-10.0	8.5-10.25	10.5-10.25	8.0	7.5
Treasury bonds					
Negotiable					
13 weeks	10.00	9.80	5.90	5.30	1.65
26 weeks	10.04	9.90	6.20	5.69	1.80
52 weeks	9.96	10.00	7.50	6.20	...
2 years	8.00	8.00	6.00	...	...
Nonnegotiable	...	...	8.0	...	...
6 months	...	...	...	...	...
12 months	...	...	...	...	...
24 months	...	...	...	...	...
36 months	...	...	...	...	...
Equipment bonds					
1 year	...	...	...	...	...
2 years	...	...	...	...	...
3-20 years	...	...	...	...	...
Negotiable	...	...	...	...	...
Memorandum item:					
Consumer price index					
(12-months increase)	5.0	2.6	0.3	4.2	1.4

Source: Algerian authorities.

1/ Central bank overnight rate.
2/ No interest is paid on sight deposits; interest on term deposits is subject to a 15 percent securities revenue tax, whereas government bond yields are tax exempt.
3/ Free for banks to determine on the basis of Libor plus 150 basis points.

Table 28. Algeria: Expansion of Banks' Network, 1998–2002

	1998	1999	2000	2001	2002
	(Number of branches)				
Bank of Algeria	49	49	49	49	49
Banque de l'Agriculture et du Dévelopement Rural (BADR)	307	305	310	315	317
Banque de Dévelopement Local (BDL)	164	170	152	170	170
Banque Extérieure d'Algérie (BEA)	74	74	76	76	76
Banque Nationale d'Algérie (BNA)	187	181	182	189	190
Crédit Populaire d'Algérie (CPA)	134	135	119	135	135
Caisse Nationale d'Epargne et de Prévoyance (CNEP)	180	185	185	185	187
Bank El Baraka	5	5	5	8	8
Union Bank	1	1	1	1	1
El-Khalifa Bank	5	5	24	24	60
Mouna Bank	1	1	1	1	1
Société de Refinancement Hypothécaire (SRH)	1	1	1	1	1
Banque Commerciale et Industrielle d'Algérie (BCIA)	1	1	12	12	24
Citibank	1	1	1	1	4
Compagnie Algérienne de Banque (CAB)	0	1	4	4	9
Arab Banking Corporation (ABC Algeria)	0	0	1	1	4
Société Générale	0	0	1	2	4
Natexis El Amana Bank	0	0	1	1	1
Algerian International Bank	0	0	1	1	1
Al Rayan Algerian Bank	0	0	1	1	1
Arab Bank	0	0	1	1	1
BNP Paribas El-Djazair	0	0	0	1	1
Banque Générale Méditérranéenne	0	0	0	1	1
Total	1,110	1,115	1,128	1,180	1,246

Source: Bank of Algeria

Table 29. Algeria: Balance of Payments, 1998–2002

(In billions of U.S. dollars; unless otherwise indicated)

	1998	1999	2000	2001	2002
Current account	-0.91	0.02	9.14	7.06	4.36
Trade balance	1.51	3.36	12.30	9.61	6.70
Exports, f.o.b.	10.14	12.32	21.65	19.09	18.71
Hydrocarbons	9.77	11.91	21.06	18.53	18.11
Other exports	0.37	0.41	0.59	0.56	0.60
Imports, f.o.b.	-8.63	-8.96	-9.35	-9.48	-12.01
Services account (net)	-3.48	-4.13	-3.95	-3.22	-3.41
Nonfactor services (net)	-1.48	-1.84	-1.45	-1.53	-1.18
Credit	0.74	0.72	0.91	0.91	1.30
Debit	-2.22	-2.56	-2.36	-2.44	-2.48
Factor services (net)	-2.00	-2.29	-2.50	-1.69	-2.23
Credit	0.37	0.22	0.38	0.85	0.68
Debit	-2.37	-2.51	-2.88	-2.54	-2.91
Interest payments	-1.95	-1.85	-1.72	-1.52	-1.31
Other	-0.42	-0.66	-1.16	-1.02	-1.60
Transfers (net)	1.06	0.79	0.79	0.67	1.07
Capital account	-0.83	-2.40	-1.57	-0.87	-0.71
Medium- and long-term capital	-0.83	-1.51	-1.54	-0.81	-0.35
Direct investment, net	0.50	0.46	0.42	1.18	0.97
Official capital, net	-1.33	-1.97	-1.96	-1.99	-1.32
Drawings	1.83	1.08	0.80	0.91	1.60
Total amortization	-3.16	-3.04	-2.76	-2.90	-2.92
Short-term capital and errors and omissions	0.00	-0.89	-0.03	-0.06	-0.36
Overall balance	-1.74	-2.38	7.57	6.19	3.65
Financing	1.74	2.38	-7.57	-6.19	-3.65
Change in gross official reserves (increases -)	1.20	2.40	-7.51	-6.05	-3.39
Fund repurchases	-0.45	-0.36	-0.10	-0.14	-0.30
Increase in other liabilities of Bank of Algeria(+)	0.00	-0.05	0.00	0.00	0.00
Exceptional financing	0.99	0.39	0.04	0.00	0.04
Rescheduling	0.52	0.00	0.00	0.00	0.00
Multilateral balance of payments support	0.13	0.08	0.04	0.00	0.04
Fund purchases	0.34	0.31	0.00	0.00	0.00
Memorandum items:					
Gross official reserves (in billions of US$) 1/	6.84	4.40	11.90	17.96	23.11
In months of total imports	7.57	4.58	12.19	18.08	19.14
Algerian crude oil price (US$/barrel)	12.94	17.91	28.50	24.85	25.20
Gross external debt (in billions of US$) 2/	30.47	28.32	25.26	22.57	22.64
Debt service (in billions of US$)	5.56	5.25	4.58	4.56	4.53
Debt service/exports (in percent)	46.32	40.26	20.30	22.80	22.64
External debt to exports ratio (in percent)	280.06	217.14	111.97	112.86	113.16
Debt/GDP (in percent)	63.23	57.97	46.42	41.15	40.50
Current account (in percent of GDP)	-1.92	0.04	16.80	12.92	7.80
GDP (in billions of US$)	48.19	48.85	54.42	54.85	55.90
Exchange rate (DA/US$, average)	58.74	66.57	75.26	77.22	79.70

Source: Bank of Algeria.

1/ According to the information provided by the Bank of Algeria all official reserves are liquid.
2/ According to the Bank of Algeria, its actual data include short-term debt, use of Fund resources, and debt to Russia.

Table 30. Algeria: Breakdown of Imports and Exports, 1998–2002

	1998	1999	2000	2001	2002
			(In millions of U.S. dollars)		
Imports					
Food	2,325	2,438	2,356	2,346	2,572
Energy	116	119	106	97	132
Raw materials	496	492	495	445	490
Semi finished	1,581	1,556	1,690	1,747	2,186
Agricultural equipment	39	76	84	154	139
Industrial equipment	2,864	2,949	2,773	3,293	4,146
Consumer goods	1,211	1,329	1,841	1,400	1,649
Direct investment "en nature"	0	0	0	0	696
Total	8,632	8,960	9,345	9,482	12,010
Exports					
Food	33	22	30	30	35
Energy	9,774	11,902	21,061	18,531	18,109
Raw materials	46	44	42	39	56
Semi finished	255	272	447	413	403
Agricultural equipment	4	24	12	22	20
Industrial equipment	14	36	44	42	50
Consumer goods	18	18	15	14	27
Total	10,144	12,318	21,651	19,091	18,700
Of which:					
Nonhydrocarbon	370	416	590	560	591
			(In percent)		
As share of total imports					
Food as share of imports	26.9	27.2	25.2	24.7	21.4
Industrial goods	33.2	32.9	29.7	34.7	34.5
Consumer goods	14.0	14.8	19.7	14.8	13.7
As share of total exports					
Nonhydrocarbons	3.6	3.4	2.7	2.9	3.2

Source: Algerian authorities.

Table 31. Algeria: Volume of Hydrocarbon Exports, 1998–2002

	1998	1999	2000	2001	2002
	(In billions of BTUs)				
Petroleum and petroleum products					
Crude petroleum	819	768	850	826	1,029
Condensate	767	677	704	698	659
Refined petroleum products	549	593	594	622	549
Liquefied petroleum gas (LPG)	392	309	339	394	395
Total	2,526	2,347	2,487	2,539	2,631
Natural gas and liquefied natural gas					
Liquefied natural gas (LNG)	955	1,032	1,054	1,017	1,052
Natural gas	1,027	1,205	1,286	1,174	1,173
Total	1,982	2,237	2,340	2,191	2,224
Total hydrocarbon trade	4,508	4,584	4,827	4,730	4,855
	(In percent of total hydrocarbon volumes)				
Petroleum and petroleum products					
Crude petroleum	18.2	16.8	17.6	17.5	21.2
Condensate	17.0	14.8	14.6	14.7	13.6
Refined petroleum products	12.2	12.9	12.3	13.1	11.3
Liquefied petroleum gas (LPG)	8.7	6.8	7.0	8.3	8.1
Total	56.0	51.2	51.5	53.7	54.2
Natural gas and liquefied natural gas					
Liquefied natural gas (LNG)	21.2	22.5	21.8	21.5	21.7
Natural gas	22.8	26.3	26.6	24.8	24.2
Total	44.0	48.8	48.5	46.3	45.8

Source: Algerian authorities.

Table 32. Algeria: Exports of Hydrocarbons, 1998–2002

	1998	1999	2000	2001	2002
Crude petroleum					
Value (in millions of US$)	1,942.9	2,724.3	4,815.1	3,994.4	5,056.1
Of which: Profit repatriation	358.2	550.4	852.1	728.4	1,298.8
Volume (in millions of barrels)	150.2	151.5	169.1	164.4	200.5
Volume (in millions of metric tons)	19.0	19.2	21.4	20.8	25.4
Unit price (in US$ per barrel)	12.9	17.8	28.5	24.3	25.2
Condensate					
Value (in millions of US$)	1,952.9	2,432.3	3,999.6	3,170.2	3,055.3
Of which: Profit repatriation	43.4	57.8	178.0	153.8	158.6
Volume (in millions of barrels)	140.5	134.8	140.2	138.9	131.2
Volume (in millions of metric tons)	15.9	15.3	15.9	15.6	14.8
Unit price (in US$ per barrel)	13.9	18.1	28.5	22.8	23.2
Refined petroleum products					
Value (in millions of US$)	1,486.7	1,996.0	3,282.4	2,736.6	2,493.8
Volume (in millions of barrels)	99.3	106.8	107.0	112.0	98.8
Volume (in millions of metric tons)	12.7	13.5	13.6	14.2	12.5
Unit price (in US$ per barrel)	15.0	18.7	30.7	24.4	25.2
Liquified petroleum gas (LPG)					
Value (in millions of US$)	766.6	1,152.0	2,118.6	1,848.5	1,754.9
Of which: Profit repatriation	22.4	51.9	139.2	141.0	137.3
Volume (in millions of barrels)	68.1	79.7	81.8	95.1	94.7
Volume (in millions of metric tons)	5.7	6.8	6.8	8.1	8.1
Unit price (in US$ per barrel)	11.3	14.5	25.9	19.4	18.5
Liquified natural gas (LNG)					
Value (in millions of US$)	1,924.8	1,832.1	3,290.9	3,250.9	2,888.5
Volume (in millions of m3 of LNG)	24.5	43.8	44.7	43.2	44.7
Volume (in billions of BTUs)	955.1	1,021.6	1,047.8	1,017.0	30.3
Unit price (in US$ per m3 of LNG)	48.0	41.8	73.6	75.2	1,051.6
Unit price (in US$ per million BTUs)	2.0	1.8	3.1	...	64.7
Natural gas (NG)					
Value (in millions of US$)	1,700.1	1,768.2	3,554.7	3,531.3	2,860.6
Volume (in billions of m3)	27.5	32.1	34.3	31.1	31.1
Volume (in billions of BTUs)	1,026.6	1,204.2	1,294.1	1,174.0	1,172.6
Unit price (in US$ per m3)	63.8	55.0	103.6	113.5	92.1
Unit price (in US$ per million BTUs)	1.7	1.5	2.7	3.0	2.4
Total hydrocarbon receipts (in US$ mn)	9,774.0	11,904.9	21,061.3	18,531.9	16,514.4
Of which: Share of Sonatrach's partners	420.0	660.0	1,169.3	1,023.2	1,594.8
	(In perent of total exports)				
Crude petroleum	19.9	22.9	22.9	21.6	27.9
Condensate	20.0	20.4	19.0	17.1	16.9
Refined petroleum products	15.2	16.8	15.6	17.1	13.8
Liquefied petroleum gas (LPG)	7.8	9.7	10.1	14.8	9.7
Gas	37.1	30.3	32.5	36.6	31.8
Liquefied natural gas (LNG)	19.7	15.4	15.6	17.5	16.0
Natural gas (NG)	17.4	14.9	16.9	19.1	15.8

Source: Algerian authorities.

Table 33. Algeria: Trade Indices, 1997–99

	1997	1998	1999
		(1980 = 100)	
Total export volume index	195.2	201.1	213.1
Nonhydrocarbon export volume index	188.5	151.7	124.9
Total import volume index	84.7	90.2	92.0
Food import volume index	133.2	136.4	140.5
Terms of trade index	51.9	38.9	49.0
		(Annual percentage change)	
Total export volume index	9.8	3.0	6.0
Nonhydrocarbon export volume index	21.1	-19.5	-17.7
Total import volume index	-2.8	6.5	2.0
Food import volume index	1.2	2.4	3.0
Terms of trade index	3.4	-25.0	25.8

Source: Algerian authorities.

Table 34. Algeria: External Debt, 1998–2001 1/

(In millions of U.S. dollars; unless otherwise indicated)

	1998	1999	2000	2001
Total external debt 1/	30,678	27,997	25,273	22,503
Long-term debt	28,482	25,896	23,333	20,786
Official creditors	19,428	18,466	17,443	16,072
Multilateral (excluding IMF)	4,392	4,236	4,123	3,921
Of which:				
World Bank	1,676	1,540	1,425	1,329
Bilateral	15,036	14,230	13,320	12,151
Concessional	2,918	2,954	2,666	2,288
Private creditors	9,054	7,430	5,890	4,713
Commercial banks	3,947	3,611	2,960	2,394
Supplier 2/	344	...	...	...
Other private	4,758	3,819	2,929	2,320
IMF	2,011	1,906	1,718	1,518
Short-term debt	186	195	222	199
Disbursements	1,510	1,449	1,215	980
Official creditors	751	730	790	404
Multilateral (excluding IMF)	594	428	349	290
Of which:				
World Bank	56	62	58	83
Bilateral	157	301	441	114
Private creditors	399	394	425	577
IMF purchases	344	306	0	0
Principal repayment	3,139	3,381	2,815	2,951
Official creditors	976	1,117	1,055	1,281
Multilateral (excluding IMF)	412	420	349	524
Of which:				
World Bank	208	199	172	177
Bilateral	565	697	706	757
Private creditors	1,728	1,905	1,667	1,530
IMF repurchases	435	359	93	141
Interest payments	1,993	1,810	1,654	1,424
Official creditors	1,196	1,189	1,130	1,015
Multilateral (excluding IMF)	279	318	297	252
Of which:				
World Bank	124	126	128	119
Bilateral	917	871	833	762
Private creditors	683	533	422	324
IMF charges	99	78	92	76
Short-term debt	15	10	10	9
Total debt service	5,131	5,191	4,470	4,375
Official creditors	2,172	2,306	2,185	2,295
Multilateral (excluding IMF)	691	739	646	776
Bilateral	1,481	1,568	1,539	1,519
Private creditors	2,411	2,438	2,090	1,853
IMF repurchases and charges	534	437	185	217
Short-term debt	15	10	10	9

Table 34. Algeria: External Debt, 1998–2001 1/ (concluded)

(In millions of U.S. dollars; unless otherwise indicated)

	1998	1999	2000	2001
Debt restructurings				
Total amount rescheduled	559	2	0	0
Principal rescheduled	543	0	0	0
Official creditors	81	0	0	0
Private creditors	462	0	0	0
Interest rescheduled	0	0	0	0
Official creditors	0	0	0	0
Private creditors	0	0	0	0
Average terms on new commitments (all creditors)				
Interest (in percent)	5.4	5.4	6.3	4.8
Maturity (in years)	11.1	10.5	10.5	9.6
Grace period (in years)	3.1	2.7	2.8	2
Grant element (in percent)	19.3	19.6	15.3	19.3
Average terms on new commitments (official creditors)				
Interest (in percent)	6.1	5.5	6.4	4.1
Maturity (in years)	14.8	13	14.2	15.5
Grace period (in years)	3.6	4.4	3.8	4.2
Grant element (in percent)	19.4	24	18.7	31.6

Source: World Bank, Debtor Reporting System (DRS).

1/ The World Bank's DRS data which are used in this table may not correspond exactly to the external debt data published by the Algerian authorities

2/ Suppliers' credits comprise export credit guaranteed by an export credit agency as well as other supplier's credit arranged directly with suppliers.

Table 35. Algeria: Stock of External Debt,1/
Disbursement of Loans, and Debt Service by Creditor

	Stock of debt in Millions of U.S. dollars (End-2002)	Stock of debt in Percent of Total (End-2002)
Bilateral	15,244	67.7
France	3,091	13.7
Germany	1,214	5.4
Italy	2,344	10.4
Japan	1,863	8.3
Spain	1,542	6.8
United States	2,140	9.5
Other OECD	2,276	10.1
Others 2/	775	3.4
Multilateral	5,036	22.4
IMF	1,321	5.9
World Bank	1,235	5.5
Other institutions	2,479	11.0
Private	2,244	10.0
Total	22,524	100.0

Source: Algerian authorities.
1/ Excluding short-term debt.
2/ According to the Bank of Algeria, its actual data include use of Fund resources and debt to Russia.

Table 36. Algeria: Nominal and Real Effective Exchange Rates, 1990–2002

(1990 = 100)

	Q1	Q2	Q3	Q4
	Nominal effective exchange rate			
1990	114.9	110.3	95.3	79.5
1991	54.4	52.4	52.3	40.2
1992	40.3	40.5	39.6	40.9
1993	41.8	41.6	41.9	42.3
1994	42.4	28.0	24.9	22.9
1995	21.9	19.9	18.2	18.0
1996	17.6	17.5	17.1	17.2
1997	18.0	18.4	18.7	18.7
1998	18.9	19.0	18.7	17.8
1999	17.1	17.0	16.9	16.9
2000	16.9	16.9	16.9	17.0
2001	17.0	17.3	17.2	17.3
2002	17.2	16.3	15.3	15.2
	Real effective exchange rate			
1990	108.3	109.5	95.9	86.3
1991	61.3	61.7	63.5	52.0
1992	54.4	58.9	62.9	67.1
1993	70.7	72.6	74.5	77.5
1994	84.1	59.8	57.6	57.0
1995	57.2	53.3	51.9	52.3
1996	54.2	56.9	55.6	56.4
1997	59.0	60.6	62.2	63.1
1998	64.7	65.2	64.7	62.0
1999	59.4	59.1	59.2	58.4
2000	58.8	57.4	57.0	57.0
2001	57.1	59.5	59.7	60.4
2002	59.7	55.4	51.9	51.3

Source: International Monetary Fund.

Algeria: Summary of the Tax System, 2003

(All amounts in Algerian dinars)

Tax	Nature of Tax	Exemptions and Deductions	Rate
1. Tax on income and profits			
1.1 Tax on overall income of individuals (*Impôt sur le revenu global des personnes physiques* - IRG)	Levied on overall Algerian-source net annual income of individuals domiciled in Algeria for tax purposes. Overall net income (the tax base) is defined as the sum of total net income from the following:	Persons whose overall net annual income does not exceed the maximum tax bracket for 0 percent IRG rate, i.e. DA 60,000. Persons with motor or mental disabilities, blind, deaf, whose monthly salary is below DA 12,000. The foreign diplomatic community in Algeria, on a reciprocity basis, as well as the activities of young entrepreneurs and others as described in the budget law. 25 percent deduction for the first two fiscal years on activities of veterans of the independence war. 30 percent deduction on reinvested profits. 35 percent deduction is granted to bakers.	Taxable income bracket / Rate Up to 60,000 — 0% 60,001–180,000 — 10% 180,001–360,000 — 20% 360,001–1,080,000 — 30% 1,080,001–3,240,000 — 35% Above 3,240,000 — 40%
	(i) Industrial and commercial profits Replaces the former BIC. Tax base calculation: • presumptive method, for two groups of taxpayers with annual turnover of no more than DA 1,500,000 (sales) or DA 800,000 (others); • actual profit method for persons whose activity yields higher turnover than the above amounts, including those granted concessions, wholesalers, and rental operators for equipment and goods, including durable consumption goods.		

Algeria: Summary of the Tax System, 2003

(All amounts in Algerian dinars)

Tax	Nature of Tax	Exemptions and Deductions	Rate
	(ii) Noncommercial profits (as defined in tax code). Tax base calculation: • actual profit method, for annual income above DA 300,000; • administrative assessment, for income below DA 300,000.		
	(iii) Agricultural income (as defined in Arts. 35, 36, and 37 of the law, and in place of the former CUA)		
	(iv) Capital income.	DA 200,000 exempted on incomes from CNEP accounts. Income from shares on the official stock market is exempted from IRG tax for 5 years beginning with the 1998 fiscal year. Income from negotiable bonds and securities of banking institutions with a maturity exceeding five years are exempted from the IRG tax for five years beginning on January 1, 2003.	10 percent; 40 percent for income from bearers' notes (bons de caisse anonymes). For CNEP accounts and investments with a maturity exceeding five years (including incomes from mutual funds): 1 percent if less than DA 200,000 10 percent for the fraction of income above DA 200,000.
	(v) Property income: Rental of real estate (whether developed or not).		10 percent for housing space, reduced to 5 percent if rented to students. 15 percent for commercial and office space
	(vi) Wages, salaries, pensions and annuities.	Category / Discount rate / Threshold for salaries exceeding DA 18,000 Single 10% 3,600 Married 30% 4,800	A tax withholding at the source is applied to monthly income at the rate of 15 percent. Temporary or occasional work is subject to withholding at the source at the rate of 15 percent. If the amount does not exceed DA 500,000, there is no further taxation.

Algeria: Summary of the Tax System, 2003

(All amounts in Algerian dinars)

Tax	Nature of Tax	Exemptions and Deductions	Rate
	(vii) Capital gains from the sale of buildings (whether developed or not). Realized gains from the sale of a property resulting from estate bequest are not included in the tax base.	Deduction of ... if the sale occurs ... after the date of acquisition or establishment of the property: 100 percent - more than 15 years 80 percent - between 10 and 15 years 60 percent - between 6 and 10 years 40 percent - between 4 and 5 years 30 percent - between 2 and 4 years	15 percent
1.2 Payroll tax	Flat-rate payment (*Versement forfaitaire*-VF), allocated in full to local governments. It is a monthly tax levied on all those paying wages. The tax base is identical to that of the IRG.	Temporary exemption of 3 years for new enterprises created by young entrepreneurs. APSI regime (investment promotion scheme).	3 percent on wages
1.3 Estate tax *(Impôt sur le patrimoine)*	The tax base is the net value of all property and assets belonging to individuals who: • are fiscal residents in Algeria, whether their goods or properties are located in Algeria or outside Algeria; • are not fiscal residents in Algeria, but have goods or properties located in Algeria.	Furniture. Jewels and stones. Gold and precious metals as well as other physical movable property are not required to be declared. Professional items.	<12,000,000 0.0% 12,000,001–18,000,000 0.5% 18,000,001–22,000,000 1.0% 20,000,001–30,000,000 1.5% 30,000,001–50;000,000 2.0% >50,000,000 2.5%
1.3.1 Real Estate tax *(Impôt sur la propriété immobilière)*	Allocated in full to local governments. Annual tax on houses, factories, and all developed properties, fixed factory equipment, building lots, and land for industrial and commercial use.	Exemption for the buildings housing the diplomatic and consular missions on a reciprocity basis, new constructions (for 7 years), and construction used for the activities of young entrepreneurs, and social housing belonging to the public sector. Exemption of property allocated to public service and not generating income, property belonging to the central government, local governments, or public institutions and for administrative use.	3 percent, determined according to the fiscal rental value by square meter of taxable area. Exempted individuals are subject to an annual contribution of DA 100.

Algeria: Summary of the Tax System, 2003

(All amounts in Algerian dinars)

Tax	Nature of Tax	Exemptions and Deductions	Rate
		Owner-occupiers with a monthly income of less than twice the minimum wage (SNMG) and whose developed property tax is less than DA 800 are also exempted.	
1.3.2 Transfer and *registration* duties (*Droits de mutation et d'enregistrement*)	Transfer duties on the net value of property. For transfers as a result of death, the rate is based on the amount transferred and the degree of kinship. Lease and insurance documents, contracts, and documents establishing or modifying companies are subject to fixed and/or proportional duties.	Transfers of central and local governments' property and HLM offices are exempt. Certain specific exemptions are provided for socioeconomic objectives.	Fixed taxes of DA 500 to DA 3000 Transfer of assets and shares 2.5% Assignment of claims 2.5% Exchange 2.5% Transfer of goodwill 5% Establishment of firms and of capital stock 1–2% Sale of movable property 5% Direct inheritance 5% Transfer of buildings 5% State transactions 5%
1.3.3 Recordation tax (*Taxe de publicité foncière)*	Tax based on the net value of taxes stated in documents pertaining to property transfer and mortgage registration, memoranda and subrogation, reduction, and satisfaction.		1 percent
1.3.4 *Cleanup* and environmental tax (*Taxe d'assainissement*)	Tax levied to the benefit of municipalities where a household waste removal service is operating.		DA 500–1000 per household dwelling DA 1,000–10,000 per commercial, professional or craftsmanship dwelling. DA 5,000–20,000 for prepared land. DA 10,000–20,000 per commercial, professional or craftsmanship dwelling generating large waste. Rates are determined in each commune following APC deliberations and view of authority in charge.

Algeria: Summary of the Tax System, 2003

(All amounts in Algerian dinars)

Tax	Nature of Tax	Exemptions and Deductions	Rate
1.4 Corporate profit tax (*Impôt sur les bénéfices des personnes morales ou des sociétés*—IBS)	Levied on all total annual profit or net income earned in Algeria by companies, whatever their form or purpose, except as exempted by the law (Art. 138). Tax is initiated by a taxpayer filing before April 1. However, withholding at the source is done for: • income from stocks and securities; • income from loans, deposits. • income foreign companies that do not have permanent bases in Algeria for service providers, and profits of sales depending on the duration of possession, as follows: 70 percent for a duration under 3 years, and 35 percent for over 3 years.	Chargeable to all companies except: • partnerships and joint ventures in accordance with the commercial code; • civil corporations not established as joint stock companies; • other special regimes provided for under the finance law (which may opt to pay the corporate profit tax). Exemptions: • activities of young entrepreneurs; • activities declared of priority: for 3–6 years, depending on establishment; • consumer cooperatives; • associations of disabled persons; • theater activities; • tourism enterprises: for 10 years; • sport-oriented enterprises or commercial companies: 5 years; • regime APSI (investment promotion scheme).	General rate: 30 percent Reduced rate: 15 percent (for reinvested profits) Specific rates: Income from stocks: 15 percent (distributed dividends) Income from loans and deposits: 10 percent Financial income (notes): 40 percent Income from companies without professional base in Algeria: 18 percent Income of companies providing management services: 20 percent Gross income of maritime transportation companies: 10 percent (except if reciprocity)
2. Tax on production and consumption			
2.1 Value-added tax (VAT) (*Taxe sur la valeur ajoutée* - TVA)	VAT is levied on sales, building construction, and services other than those subject to special taxes of an industrial, commercial, or artisanal nature, carried out in Algeria, regardless of the legal status of the parties and the form or nature of their involvement. Tax subjects are producers, wholesalers, and branch corporations. Optional for exporters, oil companies, or other VAT payers, enterprises benefiting from duty-free purchases.	Exemptions: retail resale, agricultural sector, activities subject to specific indirect taxes, merchandise exports, and individuals with total turnover sales below or equal to DA 800,000 for service providers and up to DA 1,500,000 for all others, are exempted from the VAT.	Regular rate 17% Reduced rate 7% VAT proceeds are distributed as follows (Art. 161): Domestic transactions - 85% central government budget - 10% FCCL - 5% communes Imports: - 85% central government budget - 15% FCCL

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(All amounts in Algerian dinars)

Tax	Nature of Tax	Exemptions and Deductions	Rate	
2.2 Domestic consumption tax (*Droit intérieur de consommation)*	Tax on alcohol, wines and other alcoholic beverages, gold, silver or platinum artifacts. The chargeable event consists of consumption of the taxable goods. As to gold, silver or platinum artifacts, tax recovery, as well as guarantee rights, occur when put to the test (checking out the legal title and stamping). Tobacco, cigarettes, beer are also subject to VAT, and to a domestic consumption tax.	Levied on exported products, including alcohol (which is tax-free when used for industrial purposes).	Product A. Beer B. Cigarettes a. dark tobacco b. light tobacco C. Cigars D. Smoking tobacco E. Other tobacco	Rate (DA) 3,610/hl 1022/kg 1245/kg 1453/kg 602/kg 700/kg
2.4 Tax on petroleum products	Tax on domestically consumed petroleum products established by Article 62 of the budget law for 1996, to the benefit of the State. The 2001 Budget Law changed the computation of the tax from an ad-valorem tax to a specific tax.	Exported products are exempted.	Premium gasoline Regular gasoline Fuel oil Gas oil Propane Butane GPL	777.5 DA/hl 629.5 DA/hl 68.9 DA/hl 163.8 DA/hl 35.65 DA/35kg 25.20 DA/13kg 260.8 DA/hl
2.5 Tax on professional activities (*Taxe sur l'activité professionnelle*)	Turnover tax on individuals or companies subject to IRG or IBS. Allocated in full to local governments.	Several, including APSI regime (investment promotion scheme).	2.6 %	
3. Taxes on international trade				
3.1 Custom duties (Droits de Douane)	Levied on imported goods	Investment goods and products directly used in hydrocarbon prospecting and exploitation.	5 percent, 15 percent, and 30 percent; all duties are assessed ad valorem on C.I.F. values. Some imports subject, in addition, to Temporary Additional Duty of 36 percent which will be progressively phased out by January 2006.	

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(All amounts in Algerian dinars)

Tax	Nature of Tax	Exemptions and Deductions	Rate
3.2 Service fees (*Redevance Douanière*, RD and *Redevance pour formalité Douanière*, *RFD*)	Flat fiscal duties on imports.	Same as for customs duties.	0.4 % RD and 2 % RFD; all duties are assessed ad valorem on C.I.F. values.