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June 28, 2000

To: Members of the Executive Board
From: The Acting Secretary
Subject: **Republic of Yemen—External Debt Sustainability Analysis**

Attached for the information of the Executive Directors is a paper on the External Debt Sustainability Analysis for the Republic of Yemen, which was prepared by the Yemeni authorities jointly with the staffs of the IMF and the World Bank. Conclusions appear on page 5.

Mr. Enders (ext. 38361) and Mr. Sobolev (ext. 35683) are available to answer technical or factual questions relating to this paper.

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INTERNATIONAL MONETARY FUND

REPUBLIC OF YEMEN

External Debt Sustainability Analysis

Prepared jointly by the staffs of the IMF and the World Bank¹

June 28, 2000

I. INTRODUCTION

1. The debt sustainability analysis (DSA) was prepared by the Yemeni authorities jointly with the IMF and the World Bank. The DSA and net present value (NPV) calculations are based on external public and publicly guaranteed debt data as of end-December 1999 and on macroeconomic projections through 2019.² The data was provided by the authorities, on a loan-by-loan basis, for which internal consistency was checked. In addition, a debt reconciliation process was completed with multilateral creditors, Russia, and commercial creditors, which together account for over 70 percent of total claims. The NPV of debt-to-exports ratio was measured using the three-year average of exports of goods and nonfactor services for the three years preceding the decision point (i.e., for 1997–99), while the NPV of debt-to-fiscal revenue ratio was measured in relation to the current year.³

¹Approved by Paul Chabrier and Jesús Seade (IMF), and Inder Sud and Axel van Trotsenburg (World Bank). Prepared following a joint mission in November 1999 and follow-up missions in February and May–June 2000 by Yuri Sobolev and Siddhartha Choudhury (IMF) and Marie-Hélène Le Manchec (World Bank).

²The NPV of debt was calculated using the average currency-specific Commercial Interest Reference Rate (CIRR) for the six-month period ending December 31, 1999 and converted into the U.S. dollar at the 1999 end-of-period exchange rates (Table 6). In the context of the HIPC Initiative, the coverage of the external debt excluded short-term debt, with the exception of long outstanding arrears.

³Yemen has satisfied the thresholds for the revenue-to-GDP and exports-to-GDP ratios to qualify for consideration under the fiscal criterion.

II. THE LEVEL AND COMPOSITION OF DEBT

2. At the end of 1999, Yemen's total external debt was US\$5.5 billion (Table 1). The NPV of this debt was estimated at US\$3.6 billion or the equivalent of 53 percent of GDP. About 36 percent of total debt in NPV terms was owed to multilaterals, 52 percent to official bilateral creditors (with an almost equal split between Paris and non-Paris Club creditors) and the rest to commercial creditors (Figure 1). The World Bank was the largest creditor with 15 percent of total claims in NPV terms and 42 percent of multilateral claims; followed by Russia with 15 percent of total debt (of which 2 percent was commercial debt) and 48 percent of Paris Club debt; and by the IMF (the second largest multilateral creditor), Japan, and Kuwait, each holding about 9 percent of total claims in NPV terms.
3. Since the beginning of the comprehensive reform program in 1996, Yemen had two flow reschedulings with Paris Club creditors on Naples Terms in September 1996 and November 1997.⁴ The debt rescheduling covered medium- and long-term public- and publicly-guaranteed external debt contracted before the January 1, 1993 cut-off date and entailed a 67 percent reduction of the net present value of consolidated debt encompassing outstanding arrears and debt service falling due during the September 1996–October 2000 period. The November 1997 Paris Club agreement with Russia provided an 80 percent up-front discount on all debt contracted before January 1992.⁵ In addition, in November 1999, the World Bank approved a grant under the IDA Debt Reduction facility which would allow Yemen to execute a buyback of the totality of its commercial debt.⁶
4. Total public sector external debt service is projected to average about US\$252 million annually over the 2000–09 period (before any further Paris Club debt restructuring assumptions but including assumed new borrowing), representing about 10 percent of government revenues and 8 percent of exports of goods and nonfactor services (Table 2).

⁴The creditor countries participating in both agreements were Denmark, France, Germany, Italy, Japan, the Netherlands, the United Kingdom, and the United States. Russia participated in the 1997 agreement after becoming a participating creditor in the Paris Club.

⁵The bilateral agreement with Russia was signed in December 1999.

⁶Under the debt buyback operation, all interest arrears would be forgiven and the outstanding principal would be bought back at the fixed price of 10 cents per U.S. dollar. Because a significant portion of this debt is owed to Russia and because of the 80 percent up-front discount on the Russian debt (in line with the Paris Club agreement), the effective buyback price is 3.4 cents per U.S. dollar.

III. BASELINE SCENARIO ASSUMPTIONS

5. Real GDP growth is expected to be 3.9 percent in 2000 and is projected to pick up to 5.4 percent in 2005, and to remain at that level thereafter. The economic growth is assumed to be underpinned by adequate macroeconomic policies and structural reform. The share of crude oil exports in total exports of goods and non-factor services is projected to decline gradually over the long term (from 81 percent in 2000 to 52 percent in 2019) reflecting both the expected depletion of the existing oil fields and the diversification of the economy into non-oil sector activities necessary to sustain a high rate of job creation. The current account deficit is projected to widen in the medium run reflecting both declining crude oil exports and high levels of imports associated with the economic development process (peaking at 2.6 percent of GDP in 2011–13), but then to turn around and set on a declining path as the structural reforms and investment into human and physical capital begin to bear fruit. (Table 3 presents macroeconomic projections over the medium term.)

6. The bulk of external financing (93 percent) is assumed to come from multilateral lenders, including program and project financing by the IMF and IDA, and the rest from bilateral creditors on favorable terms.⁷ The level of external public and publicly guaranteed financing is projected to decline gradually from its peak of US\$351 million in 2001 to zero in 2012 as macroeconomic stability and structural reforms bring about higher rates of economic growth and attract foreign direct investment and private financial capital. Government cash and in-kind grants are assumed to increase gradually from US\$100 million in 2000 to US\$139 million in 2008 and to remain at that level thereafter.

IV. DEBT SUSTAINABILITY ANALYSIS

7. The debt sustainability exercise assumes the full use of traditional debt relief mechanisms, including a stock-of-debt operation on Naples terms which would apply to pre-cutoff date debt and provide a 67 percent NPV reduction on all non-previously rescheduled principal and interest. In addition, it assumes the effectiveness of the commercial debt buyback and the provision of at least comparable treatment by non-Paris Club creditors. Under these assumptions, the NPV of the external debt would be reduced from US\$3.6 billion before restructuring to US\$2.5 billion after restructuring (Table 4). Consequently, the ratios of NPV of debt to exports, as well as the ratio of the NPV of debt to fiscal revenue for 1999 are estimated at 160 percent and 176 percent (before the full use of traditional debt relief mechanisms) and at 108 percent and 118 percent (after the full use of traditional debt relief mechanisms),

⁷The following terms are assumed on new borrowing from bilateral lenders: 5-year grace period, 15-year maturity, 3 percent interest. At the current CIRRs, these terms represent a grant element of 33 percent.

respectively, i.e., below the eligibility levels established under the enhanced HIPC Initiative (Figures 2 and 3).

V. SENSITIVITY ANALYSIS

8. In addition to the baseline scenario, two alternative scenarios were examined to assess the sensitivity of Yemen's debt indicators to adverse external shocks (Table 5 and Figure 4): less favorable external financing and a permanent decline in the price of oil.

9. **The less favorable financing scenario** assumes that the amount of available concessional financing from multilateral sources would drop by 50 percent. The resulting shortfall would need to be covered from bilateral sources. In addition, all bilateral borrowing is now assumed on less favorable terms: 3-year grace period, 12-year maturity, and 6 percent interest (a grant element of 9 percent). The results show that, compared with the baseline scenario, the NPV of debt and hence the ratios to exports and fiscal revenue are higher in all projection years, but nevertheless remain at sustainable levels peaking in 2004 at 108 percent and 127 percent, respectively, and declining steadily thereafter.

10. **The permanent oil price decline scenario** assumes that the price of Yemeni oil drops to US\$15 per barrel in the last quarter of 2000 and stays at that level for the entire projection period. Lower government oil revenues are expected to result in lower public saving and development expenditure and higher domestic financing need which would crowd out some private sector investment. Consequently, the rate of real GDP growth is assumed to decline by 1.5 percentage points relative to the baseline scenario with a concomitant slowdown of import demand. The income effect on imports is not sufficient however to fully offset the loss of export revenue. The resulting higher current account deficit and the associated financing gap relative to the baseline scenario is assumed to be financed from bilateral sources on favorable terms: 5-year grace period, 15-year maturity, and 3 percent interest, or the same as in the baseline scenario. The results show that, compared with the baseline scenario, the NPV of debt and hence the ratios to exports and fiscal revenue are higher in all projection years, rising steadily until 2006 and then following a declining trend. While the ratio of the NPV of debt to fiscal revenue remains at sustainable levels throughout the entire projection period, the ratio of NPV of debt to exports approaches the 150 percent threshold level peaking at 147 percent in 2006. Thus, in the event that the price of Yemeni oil dropped permanently to US\$15 per barrel, the NPV of debt-to-export ratio would temporarily approach the threshold level set under the enhanced HIPC Initiative.⁸

⁸Since 1990, the average price for the year of Yemeni oil was at or below US\$15 only twice: in 1994 and 1998.

VI. AUTHORITIES' VIEWS AND STAFF RESPONSE

11. The Yemeni authorities have reviewed the results of the debt sustainability analysis and agreed with its factual assessment. However, they proposed that foreign oil companies' exports be excluded from the export base on the grounds that the foreign exchange accrues to the oil companies and is not available to the government to service its debt. If the foreign oil companies' exports were to be excluded from the DSA, the NPV of debt-to-exports ratio in 1999 would be 183 percent after the application of traditional debt relief mechanisms. The authorities noted that, in that case, Yemen would qualify for assistance under the HIPC Initiative.

12. The staff have discussed the proposal by the Yemeni authorities and, while sympathetic with the authorities' view, explained that this would not be consistent with the guidelines under the HIPC Initiative.⁹ Accordingly, foreign oil companies operating in Yemen are considered to be direct investment enterprises and residents of Yemen, as defined by reference to the center of economic activity. While the existing royalties and profit sharing arrangements between the government of Yemen and the oil companies determine the foreign exchanges received by the government—namely, the royalties and government shares in the net oil production—the total amount of oil export earnings received relate to the economy as a whole.

VII. CONCLUSIONS

13. The results of the DSA indicate that, after the full use of traditional debt relief mechanisms, the ratios of NPV of debt to exports and fiscal revenue are estimated to be below the eligibility levels defined under the enhanced HIPC Initiative by a wide margin. The sensitivity analysis indicates that, barring a permanent collapse of oil prices, Yemen's external debt ratios are projected to remain at sustainable levels over the projection period provided the authorities continue to pursue prudent external debt and macroeconomic management policies.

⁹Exports used in the calculation of the NPV of debt-to-exports ratio are based on definitions set forth in the IMF Balance of Payments Manual, 5th Edition, 1993. See "HIPC Debt Initiative—Elaboration of Key Features and Proposed Procedures," (EBS/96/135 and IDA/SecM96-927, 8/26/96).

Table 1. Yemen: Nominal and Net Present Value (NPV) of Public- and Publicly-Guaranteed Debt Outstanding

Actual as of end-December 1999

	Nominal Debt at end-1999		NPV of Debt at end-1999	
	US\$ millions	Percent of Total Debt	US\$ millions	Percent of Total Debt
Total public- and publicly-guaranteed debt	5,490	100.0	3,649	100.0
Multilateral creditors	2,159	39.3	1,329	36.4
International Development Agency (IDA)	1,216	22.2	560	15.3
International Monetary Fund (IMF)	408	7.4	340	9.3
International Fund for Agricultural Development (IFAD)	89	1.6	47	1.3
Arab Fund for Economic and Social Development (AFESD)	235	4.3	185	5.1
European Union (EU)	7	0.1	3	0.1
OPEC Fund for International Development	24	0.4	21	0.6
OAPEC	28	0.5	28	0.8
Islamic Development Bank (IsDB)	24	0.4	19	0.5
Arab Monetary Fund (AMF)	126	2.3	125	3.4
Arab Towns Organization (ATO)	1	0.0	1	0.0
Bilateral creditors	3,331	60.7	2,320	63.6
Paris Club	1,899	34.6	957	26.2
Russia 1/	1,335	24.3	462	12.7
Japan	353	6.4	338	9.3
United States	103	1.9	70	1.9
France	70	1.3	64	1.8
Italy	25	0.5	12	0.3
Netherlands	2	0.0	3	0.1
United Kingdom	5	0.1	4	0.1
Denmark	3	0.1	3	0.1
Germany	1	0.0	2	0.0
Non-Paris Club official bilateral	1,011	18.4	941	25.8
Saudi Arabia	246	4.5	226	6.2
Kuwait	335	6.1	308	8.4
China	159	2.9	144	3.9
Algeria	88	1.6	88	2.4
Iraq	56	1.0	51	1.4
Bulgaria	51	0.9	51	1.4
United Arab Emirates	39	0.7	39	1.1
Hungary	19	0.3	19	0.5
Czech and Slovak Republics	16	0.3	16	0.4
Poland	1	0.0	1	0.0
India	0	0.0	0	0.0
Commercial	421	7.7	421	11.5
Russia 1/	68	1.2	68	1.9
Czech and Slovak Republics	30	0.5	30	0.8
China	22	0.4	22	0.6
Saudi Arabia	9	0.2	9	0.2
Kuwait	7	0.1	7	0.2
Bahrain	3	0.0	3	0.1
Various creditors 2/	2	0.0	2	0.1
Interest arrears 2/	280	5.1	280	7.7

Source: Yemeni authorities and staff estimates.

1/ After an 80 percent upfront discount in line with the 1997 Paris Club Agreement.

2/ The commercial debt data was reconciled within the framework of the IDA buyback operation and some of the debt was aggregated.

Table 2. Yemen: Projected Debt Service Before Rescheduling, 2000–2019

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

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total debt service before rescheduling	299	270	222	199	228	257	262	276	262	244	228	215	187	168	151	142	144	142	146	138
Projected amortization repayments	233	208	163	143	174	205	213	229	218	202	188	176	150	133	117	110	113	113	118	111
Multilateral creditors	152	134	90	83	101	105	101	100	81	62	48	49	50	50	50	50	51	50	51	50
IDA	14	18	20	22	24	24	27	29	32	34	35	37	38	38	38	38	40	41	43	45
IMF	74	57	19	19	38	50	50	54	33	15	0	0	0	0	0	0	0	0	0	0
IFAD	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3
AFESD	23	23	19	18	17	15	13	12	12	9	9	9	9	8	8	8	8	6	5	2
EU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OPEC Fund	5	4	3	2	2	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0
OAPEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IsDB	4	3	3	3	2	2	2	2	1	1	1	1	1	0	0	0	0	0	0	0
AMF	30	27	24	16	16	9	4	0	0	0	0	0	0	0	0	0	0	0	0	0
ATO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bilateral creditors	80	74	73	60	56	57	51	49	47	49	47	48	46	46	47	48	50	50	52	45
Paris Club	31	34	35	34	34	35	36	38	37	41	39	40	42	42	44	46	48	49	51	44
Pre cut-off	30	32	32	32	32	33	34	35	35	38	36	37	39	39	41	43	46	46	48	41
ODA	5	6	6	6	6	6	6	6	6	8	8	8	8	8	8	7	7	4	3	3
Non-ODA	25	26	27	26	26	27	28	29	29	30	28	30	31	31	33	36	39	42	45	39
Post cut-off	1	2	2	2	2	2	2	3	3	3	3	3	3	3	3	2	3	3	3	3
ODA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-ODA	1	2	2	2	2	2	2	3	3	3	3	3	3	3	3	2	3	3	3	3
Non-Paris Club official bilateral	49	40	39	26	22	21	15	12	10	8	8	7	4	4	3	3	2	1	1	1
Pre cut-off	49	40	38	26	22	21	14	11	10	8	8	7	4	4	3	3	2	1	1	1
ODA	39	33	32	26	22	21	14	11	10	8	8	7	4	4	3	3	2	1	1	1
Non-ODA	10	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Post cut-off	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ODA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-ODA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre cut-off	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Post cut-off	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New debt	0	0	0	0	16	44	62	80	90	91	94	79	53	37	20	12	13	13	15	17
Multilateral	0	0	0	0	16	44	62	80	90	91	94	79	53	37	20	12	13	13	15	17
Bilateral	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Projected interest payments	66	62	58	56	54	51	49	46	44	42	40	38	37	35	34	32	31	29	28	26

Table 2. Yemen: Projected Debt Service Before Rescheduling, 2000–2019

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

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Multilateral creditors	33	28	24	21	19	16	15	13	12	11	10	10	9	8	8	7	7	6	6	5
IDA	9	9	9	9	9	8	8	8	8	7	7	7	7	6	6	6	6	5	5	5
IMF	8	6	4	3	3	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0
IFAD	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
AFESD	8	7	6	5	5	4	4	3	3	2	2	2	2	1	1	1	1	0	0	0
EU	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OPEC Fund	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OAPEC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IsDB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AMF	7	5	4	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bilateral creditors	30	29	28	27	26	25	24	24	23	22	21	21	20	19	18	18	17	16	15	15
Paris Club	28	27	26	26	25	24	24	23	22	22	21	20	20	19	18	18	17	16	15	15
Pre cut-off	27	26	25	25	24	24	23	22	22	21	20	20	19	18	18	17	16	16	15	14
ODA	4	4	4	4	4	4	3	3	3	3	3	3	2	2	2	2	2	1	1	1
Non-ODA	22	22	21	21	20	20	19	19	19	18	18	17	17	16	16	15	15	14	14	13
Post cut-off	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
ODA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-ODA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0
Non-Paris Club official bilateral	2	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre cut-off	2	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
ODA	2	2	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-ODA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Post cut-off	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ODA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-ODA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre cut-off	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Post cut-off	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New debt	3	5	7	8	9	10	10	10	9	9	9	8	8	7	7	7	7	7	7	6
Multilateral	3	5	7	8	9	10	10	10	9	9	9	8	8	7	7	7	7	7	7	6
Bilateral	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Memorandum item:																				
Total debt service after rescheduling 1/	246	225	179	176	203	233	246	263	252	234	220	207	183	165	150	144	159	162	169	163
	(In percent of current-year exports of goods and services) 2/																			
Debt-service ratio before rescheduling	8.9	8.8	7.7	7.0	7.8	8.7	8.7	8.8	8.1	7.3	6.6	6.1	5.1	4.4	3.8	3.5	3.4	3.3	3.2	3.0
Debt-service ratio after rescheduling	7.3	7.4	6.2	6.2	7.0	7.9	8.1	8.4	7.8	7.0	6.4	5.9	5.0	4.4	3.8	3.5	3.8	3.7	3.8	3.5

Source: Yemeni authorities and staff estimates.

1/ A stock-of-debt operation on Naples terms is assumed to take place in December 1999, along with comparable treatment from non-Paris Club bilateral creditors and a rescheduling of multilateral arrears (\$28 million due to OAPEC) over four years.

2/ As defined in IMF Balance of Payments Manual, 5th edition, 1993.

Table 3. Yemen: Baseline Scenario Medium-Term Framework 1999–2005

	1999	2000	2001	2002	2003	2004	2005
	(Change in percent)						
Real GDP at market prices	3.8	3.9	3.1	3.5	4.1	4.8	5.4
Real non-oil GDP	3.2	3.8	4.6	5.3	5.9	6.5	7.0
Inflation (CPI)	8.0	7.0	6.0	5.0	5.0	5.0	5.0
	(In percent of GDP)						
National consumption	86.7	82.0	84.9	86.6	87.5	87.6	87.6
Government	16.9	17.0	17.9	17.6	17.4	17.2	17.3
Nongovernment (including public enterprises)	69.9	65.0	67.0	69.0	70.0	70.3	70.3
Gross investment	20.1	20.4	21.2	22.1	23.0	23.6	24.5
Change in stock	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gross fixed capital formation	20.1	20.4	21.2	22.1	23.0	23.6	24.5
Government	5.6	5.7	6.2	6.3	6.5	6.6	6.8
Nongovernment (including public enterprises)	14.5	14.7	15.0	15.8	16.5	17.0	17.7
Domestic absorption	106.8	102.5	106.1	108.7	110.5	111.2	112.0
Net exports of goods and nonfactor services	-6.8	-2.5	-6.1	-8.7	-10.5	-11.2	-12.0
Net factor income	-10.8	-12.7	-10.5	-9.1	-8.3	-7.8	-7.4
Net current transfers	19.2	18.6	18.9	18.9	18.6	18.5	18.3
Gross national savings	21.7	23.8	23.5	23.2	22.8	23.1	23.3
Government	5.7	10.9	8.2	7.6	7.0	7.0	6.7
Nongovernment (including public enterprises)	16.0	12.9	15.3	15.6	15.8	16.1	16.7
Total fiscal revenue and grants	32.2	41.7	36.6	33.6	32.1	31.3	30.4
Oil revenue (including domestic)	20.1	30.2	24.7	21.4	19.6	18.7	17.6
Non-oil revenue	11.1	10.6	11.1	11.5	11.8	11.9	12.2
Grants	0.9	1.0	0.8	0.7	0.7	0.7	0.6
Total fiscal expenditures	32.1	36.5	34.6	32.4	31.6	30.9	30.5
Current expenditure	26.5	30.8	28.4	26.1	25.1	24.3	23.7
Development expenditure	5.6	5.7	6.2	6.3	6.5	6.6	6.8
Overall fiscal balance (commitment basis excluding grants)	-0.8	4.3	1.2	0.5	-0.1	-0.3	-0.7
Overall fiscal balance (cash basis including grants)	-0.1	4.4	2.0	1.3	0.5	0.4	-0.1
Foreign financing (net)	2.3	1.1	1.0	0.4	0.0	0.0	-0.4
Domestic financing (net)	-2.3	-5.5	-3.0	-1.6	-0.6	-0.4	0.5
External trade balance	0.4	4.2	0.2	-2.6	-4.5	-5.3	-6.4
Exports, f.o.b.	36.1	42.1	37.7	34.7	33.0	32.2	31.4
Oil and gas	34.1	40.2	35.6	32.1	30.2	29.4	28.2
Non-oil	2.0	2.0	2.2	2.6	2.8	2.9	3.2
Imports	-35.8	-38.0	-37.5	-37.3	-37.5	-37.6	-37.8
Current account balance (including grants)	1.6	3.4	2.3	1.1	-0.2	-0.5	-1.1
Current account balance (excluding grants)	0.3	2.1	0.9	-0.4	-1.6	-2.0	-2.5
Memorandum items:							
Total social budgetary expenditures (in percent of GDP) 1/	9.3	10.1	10.6	10.7	11.0	11.0	11.1
Real per capita consumption (1996=100)	120.0	118.5	118.4	119.7	122.6	127.3	131.2
Real per capita GNDI (1996=100)	118.8	121.1	119.7	120.2	122.4	127.3	131.6
Incremental capital output ratio (ICOR)	5.3	5.2	6.9	6.3	5.6	4.9	4.5
Gross official reserves (months of imports, fob)	6.0	7.4	8.9	9.7	9.8	9.7	9.0
Oil export prices (US\$ per barrel)	18.7	24.0	21.0	19.5	19.4	20.0	20.2
Terms of trade (1996=100)	114.1	142.9	121.6	110.8	107.6	108.7	107.2

Source: Yemeni authorities and staff estimates.

1/ Social expenditures include all spending on health, education, and social safety net.

Table 4. Yemen: Net Present Value of External Debt After Rescheduling, 1999–2019 1/

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

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1. Total NPV	2,453	2,507	2,634	2,742	2,848	2,885	2,836	2,764	2,669	2,579	2,497	2,422	2,351	2,298	2,259	2,234	2,214	2,179	2,142	2,098	2,059
1a. Old debt	2,453	2,346	2,256	2,210	2,167	2,113	2,054	1,997	1,939	1,899	1,876	1,871	1,862	1,852	1,843	1,833	1,820	1,793	1,762	1,725	1,693
2. Official bilateral and commercial	1,128	1,135	1,142	1,151	1,155	1,160	1,166	1,172	1,178	1,187	1,195	1,207	1,218	1,230	1,243	1,255	1,265	1,264	1,259	1,249	1,245
2a. Paris Club	757	759	761	765	763	762	762	761	760	761	761	765	769	772	776	779	780	777	772	764	762
Post-cutoff	49	49	48	47	46	45	43	42	40	38	36	35	33	31	29	27	25	23	22	20	18
Of which: ODA 2/	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Of which: non-ODA	49	49	48	47	46	45	43	42	40	38	36	35	33	31	29	27	25	23	22	20	18
Pre-cutoff	708	710	713	718	718	718	718	719	720	722	725	731	736	741	747	752	755	754	751	744	744
Of which: ODA	109	110	111	112	114	115	116	117	119	120	122	124	125	127	129	131	133	133	133	133	133
Of which: non-ODA	599	599	602	605	604	603	602	602	601	602	603	607	611	614	618	621	622	621	617	611	612
2b. Other official bilateral	371	376	381	386	392	398	404	411	418	426	433	441	450	458	467	476	486	487	487	485	482
Post-Cutoff	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Of which: ODA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Of which: non-ODA	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-cutoff	370	375	380	385	391	397	404	411	418	425	433	441	450	458	467	476	486	487	487	485	482
Of which: ODA	304	309	314	319	325	331	338	345	353	361	370	379	389	400	412	424	437	442	447	452	456
Of which: non-ODA	66	66	66	66	66	66	66	66	65	64	63	62	60	58	55	52	49	44	39	33	27
3. Multilateral	1,325	1,211	1,114	1,060	1,012	952	888	825	760	712	682	664	644	622	600	578	555	529	503	476	449
IDA	560	570	577	582	585	587	589	588	585	579	572	563	552	540	527	512	498	481	462	440	416
IMF	340	276	229	219	210	181	138	94	45	14	0	0	0	0	0	0	0	0	0	0	0
IFAD	47	46	46	45	44	44	43	42	41	40	39	38	37	36	35	34	32	31	30	29	27
AFESD	185	168	150	136	122	109	97	88	79	70	63	56	49	43	36	29	22	15	10	5	4
EU	3	3	3	3	3	3	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2
OPEC Fund	21	17	13	10	8	7	5	4	3	2	2	1	1	0	0	0	0	0	0	0	0
OAPEC	24	19	13	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IsDB	19	17	15	13	11	9	8	7	5	4	3	3	2	1	1	1	0	0	0	0	0
AMF	125	95	68	45	29	13	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ATO	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4. New borrowing	0	161	378	532	681	772	782	767	730	680	621	551	489	445	416	402	394	386	379	372	365
Multilateral	0	159	358	497	634	716	721	701	662	610	552	484	423	386	363	356	357	358	358	356	353
Bilateral	0	2	20	35	47	56	61	66	69	69	69	68	66	60	53	45	37	28	22	16	12

Table 4. Yemen: Net Present Value of External Debt After Rescheduling, 1999–2019 1/

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

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Memorandum items:																					
NPV-of-debt before rescheduling	3,649	3,655	3,739	3,803	3,882	3,887	3,806	3,708	3,588	3,473	3,366	3,265	3,167	3,089	3,025	2,975	2,931	2,882	2,835	2,784	2,741
Exports of goods and services 3/	2,638	3,353	3,059	2,886	2,850	2,902	2,946	3,024	3,114	3,224	3,349	3,445	3,540	3,639	3,795	3,934	4,064	4,205	4,359	4,484	4,622
Three-year average 4/	2,281	2,572	3,017	3,099	2,932	2,879	2,899	2,958	3,028	3,121	3,229	3,339	3,445	3,541	3,658	3,789	3,931	4,068	4,209	4,350	4,488
Fiscal revenues 5/	2,079	2,997	2,640	2,466	2,418	2,451	2,461	2,584	2,713	2,849	2,991	3,141	3,298	3,462	3,636	3,817	4,008	4,209	4,419	4,640	4,872
Before rescheduling:																					
NPV debt to GDP	53.4	49.0	50.0	50.1	49.7	47.9	45.4	41.8	38.2	34.9	31.9	29.2	26.7	24.6	22.7	21.1	19.6	18.2	16.9	15.7	14.6
NPV debt-to-exports of goods and services 6/	160.0	142.1	124.0	122.7	132.4	135.0	131.3	125.4	118.5	111.3	104.3	97.8	92.0	87.2	82.7	78.5	74.5	70.9	67.4	64.0	61.1
NPV debt-to-fiscal revenues	175.5	121.9	141.7	154.2	160.5	158.6	154.7	143.5	132.3	121.9	112.6	104.0	96.1	89.2	83.2	77.9	73.1	68.5	64.2	60.0	56.3
(In percent)																					
After rescheduling:																					
NPV debt to GDP	35.9	33.6	35.2	36.1	36.5	35.5	33.9	31.1	28.4	25.9	23.7	21.7	19.8	18.3	17.0	15.9	14.8	13.8	12.8	11.8	10.9
NPV debt-to-exports of goods and services 6/	107.5	97.5	87.3	88.5	97.2	100.2	97.8	93.5	88.1	82.6	77.3	72.5	68.3	64.9	61.8	59.0	56.3	53.6	50.9	48.2	45.9
NPV debt-to-fiscal revenues	118.0	83.6	99.8	111.2	117.8	117.7	115.3	107.0	98.4	90.5	83.5	77.1	71.3	66.4	62.1	58.5	55.2	51.8	48.5	45.2	42.3

Source: Yemeni authorities and staff estimates.

1/ A stock-of-debt operation on Naples terms is assumed to take place in December 1999, along with comparable treatment from non-Paris Club bilateral creditors and a rescheduling of multilateral arrears (\$28 million due to ODAPEC) over four years.

2/ ODA is assumed to be debt with a grant element of at least 25 percent according to the DAC definition.

3/ Based on the definition in the fifth edition of the BOP Manual. Does not include worker remittances.

4/ Backward-looking average (e.g., average over 1997–99 for entry in 1999).

5/ Revenues are defined as central government revenues, excluding grants, converted at end of period exchange rates.

6/ NPV of debt in percent of three-year average of exports of goods and services.

Table 5. Yemen: Baseline Scenario and Sensitivity Analysis

(In millions of U.S. dollars)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Total nominal debt	4,931	4,752	4,590	4,472	4,355	4,225	4,091	3,960	3,827	3,713	3,617	3,536	3,452	3,365	3,277	3,187	3,094	2,985	2,872	2,753	2,639
Multilateral creditors	2,159	1,999	1,859	1,762	1,672	1,571	1,466	1,366	1,266	1,185	1,123	1,075	1,025	975	925	875	825	775	724	674	624
IDA	1,216	1,202	1,185	1,165	1,143	1,119	1,095	1,068	1,039	1,007	973	939	902	864	826	788	749	709	667	624	579
IMF	408	334	277	259	240	202	151	101	47	15	0	0	0	0	0	0	0	0	0	0	0
Others	534	463	397	338	289	250	220	197	180	163	149	136	123	111	99	87	76	66	57	50	45
Bilateral and commercial creditors	2,772	2,752	2,731	2,710	2,683	2,655	2,625	2,594	2,561	2,529	2,494	2,462	2,427	2,390	2,352	2,312	2,268	2,211	2,148	2,079	2,015
Total NPV of debt																					
Baseline scenario, total	2,453	2,507	2,634	2,742	2,848	2,885	2,836	2,764	2,669	2,579	2,497	2,422	2,351	2,298	2,259	2,234	2,214	2,179	2,142	2,098	2,059
Multilateral creditors	1,325	1,370	1,472	1,556	1,646	1,669	1,609	1,526	1,422	1,323	1,234	1,148	1,067	1,008	964	934	912	887	861	832	802
Bilateral and commercial creditors	1,128	1,137	1,162	1,186	1,202	1,216	1,227	1,238	1,247	1,256	1,264	1,274	1,284	1,289	1,295	1,300	1,303	1,293	1,280	1,265	1,257
Less favorable financing scenario	2,453	2,499	2,647	2,822	3,012	3,115	3,135	3,100	3,048	2,997	2,954	2,926	2,900	2,891	2,895	2,925	2,948	2,969	2,981	2,994	3,014
Multilateral creditors	1,325	1,344	1,405	1,414	1,389	1,341	1,265	1,177	1,086	1,009	948	894	847	816	792	769	744	717	690	661	629
Bilateral and commercial creditors	1,128	1,155	1,242	1,408	1,622	1,774	1,870	1,923	1,962	1,988	2,006	2,032	2,053	2,076	2,103	2,157	2,204	2,251	2,290	2,334	2,384
Low oil price scenario	2,453	2,521	2,744	2,979	3,223	3,404	3,508	3,610	3,671	3,700	3,718	3,747	3,773	3,772	3,786	3,812	3,880	3,925	3,983	4,032	4,104
Multilateral creditors	1,325	1,370	1,472	1,556	1,646	1,669	1,609	1,526	1,422	1,323	1,234	1,148	1,067	1,008	964	934	912	887	861	832	802
Bilateral and commercial creditors	1,128	1,152	1,271	1,422	1,577	1,735	1,899	2,084	2,249	2,377	2,485	2,599	2,706	2,763	2,822	2,878	2,968	3,038	3,122	3,200	3,302
(In percent)																					
Ratio of total NPV of debt																					
Baseline scenario																					
GDP	35.9	33.6	35.2	36.1	36.5	35.5	33.9	31.1	28.4	25.9	23.7	21.7	19.8	18.3	17.0	15.9	14.8	13.8	12.8	11.8	10.9
Exports 1/	107.5	97.5	87.3	88.5	97.2	100.2	97.8	93.5	88.1	82.6	77.3	72.5	68.3	64.9	61.8	59.0	56.3	53.6	50.9	48.2	45.9
Fiscal revenue 2/	118.0	83.6	99.8	111.2	117.8	117.7	115.3	107.0	98.4	90.5	83.5	77.1	71.3	66.4	62.1	58.5	55.2	51.8	48.5	45.2	42.3
Memorandum item:																					
Current account deficit (% of GDP)	1.6	3.4	2.3	1.1	-0.2	-0.5	-1.1	-1.9	-2.5	-2.5	-2.5	-2.5	-2.6	-2.6	-2.6	-2.5	-2.5	-2.5	-2.5	-2.5	-2.5

Table 5. Yemen: Baseline Scenario and Sensitivity Analysis

(In millions of U.S. dollars)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Less favorable financing scenario																					
GDP	35.9	33.5	35.4	37.1	38.6	38.4	37.4	34.9	32.4	30.1	28.0	26.2	24.5	23.0	21.8	20.8	19.7	18.8	17.8	16.9	16.0
Exports 1/	107.5	97.2	87.7	91.1	102.7	108.2	108.1	104.8	100.6	96.0	91.5	87.6	84.2	81.7	79.2	77.2	75.0	73.0	70.8	68.8	67.1
Fiscal revenue 2/	118.0	83.4	100.3	114.5	124.5	127.1	127.4	120.0	112.3	105.2	98.8	93.2	87.9	83.5	79.6	76.6	73.6	70.5	67.5	64.5	61.9
Memorandum item:																					
Current account deficit (% of GDP)	1.6	3.4	2.3	0.9	-0.5	-0.8	-1.4	-2.2	-3.0	-3.0	-3.0	-2.9	-3.0	-3.0	-3.0	-3.0	-3.0	-3.0	-2.9	-2.9	-2.8
Low oil price scenario																					
GDP	35.9	33.8	36.7	39.2	41.3	41.9	41.9	41.6	40.9	39.8	38.7	37.7	36.7	35.4	34.3	33.4	32.8	32.1	31.5	30.8	30.3
Exports 1/	107.5	104.7	104.6	117.2	134.9	141.7	145.1	147.3	146.1	142.3	137.5	133.4	129.7	125.7	121.7	117.8	115.0	112.0	109.4	106.8	105.0
Fiscal revenue 2/	118.0	84.1	103.9	120.8	133.3	138.9	142.6	141.7	135.3	129.1	119.4	109.8	101.1	92.3	84.2	75.4	70.4	65.4	63.0	61.0	59.4
Memorandum item:																					
Current account deficit (% of GDP)	1.6	-3.3	-4.8	-4.8	-4.8	-4.9	-5.1	-5.3	-5.3	-5.3	-5.3	-5.3	-5.3	-5.2	-5.1	-5.0	-5.0	-4.9	-4.9	-4.8	-4.8

Source: Yemeni authorities and staff estimates.

1/ Three-year average of exports of goods and services as defined in IMF Balance of Payments Manual, 5th edition, 1993.

2/ Revenues are defined as central government revenues, excluding grants, converted at end of period exchange rates.

Table 6. Discount Rate and Exchange Rate Assumptions 1/

	Discount Rates 2/ (In Percent)	Exchange Rates (Per U.S. Dollar)
Currency		
AMF currency of account	5.59	0.24
UAE dinar	5.59	3.67
Bulgarian leva	5.59	1.95
Swiss franc	4.27	1.60
Chinese yuan	7.04	8.28
Deutsche mark	5.47	1.95
Yemeni rial	5.59	159.71
Euro	5.47	1.00
French franc	5.47	6.53
British pound	6.70	0.62
Indian rupee	7.04	43.49
Iraqi dinar	5.59	30.00
IsDB currency of account	5.59	0.73
Japanese yen	1.98	102.20
Kuwaiti dinar	7.04	0.30
Dutch guilder	5.47	2.19
Saudi Arabian ryal	7.04	3.75
Special Drawing Right	5.59	0.73
Russian ruble	7.04	0.60
United States dollar	7.04	1.00

1/ Actual as of end-December 1999.

2/ The discount rates used are the average Commercial Interest Reference Rates for the respective currencies over the six-month period ending in end-December 1999.

Figure 1. Yemen: NPV Composition of External Debt as of end-1999 1/

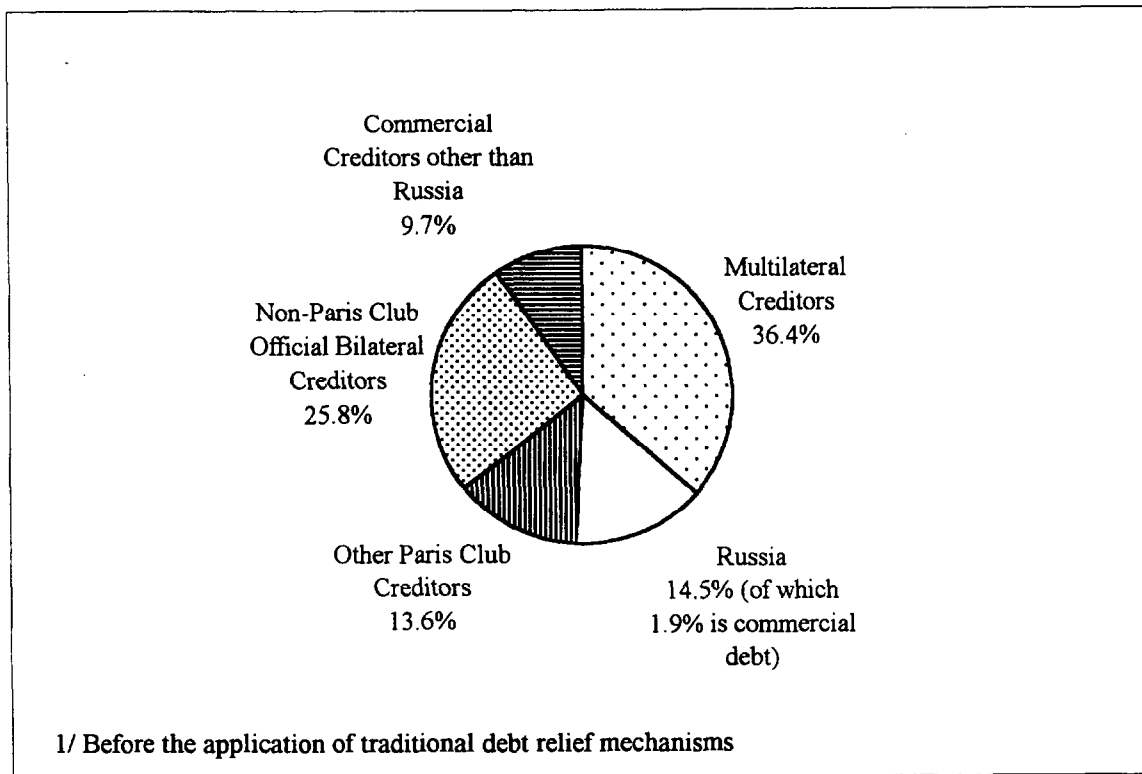
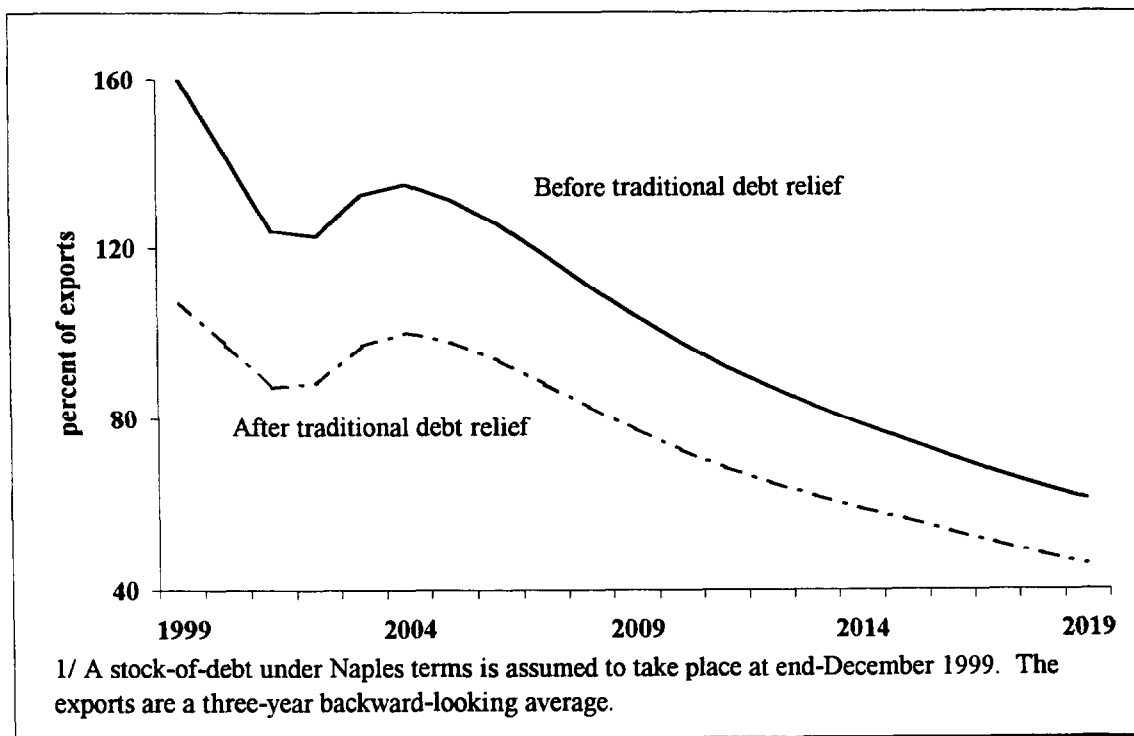


Figure 2. Yemen: NPV of Debt-to-Exports Ratio Before and After Rescheduling 1/



Source: Yemeni authorities and staff estimates.

Figure 3. Yemen: Debt Service Ratio Before and After Rescheduling 1/

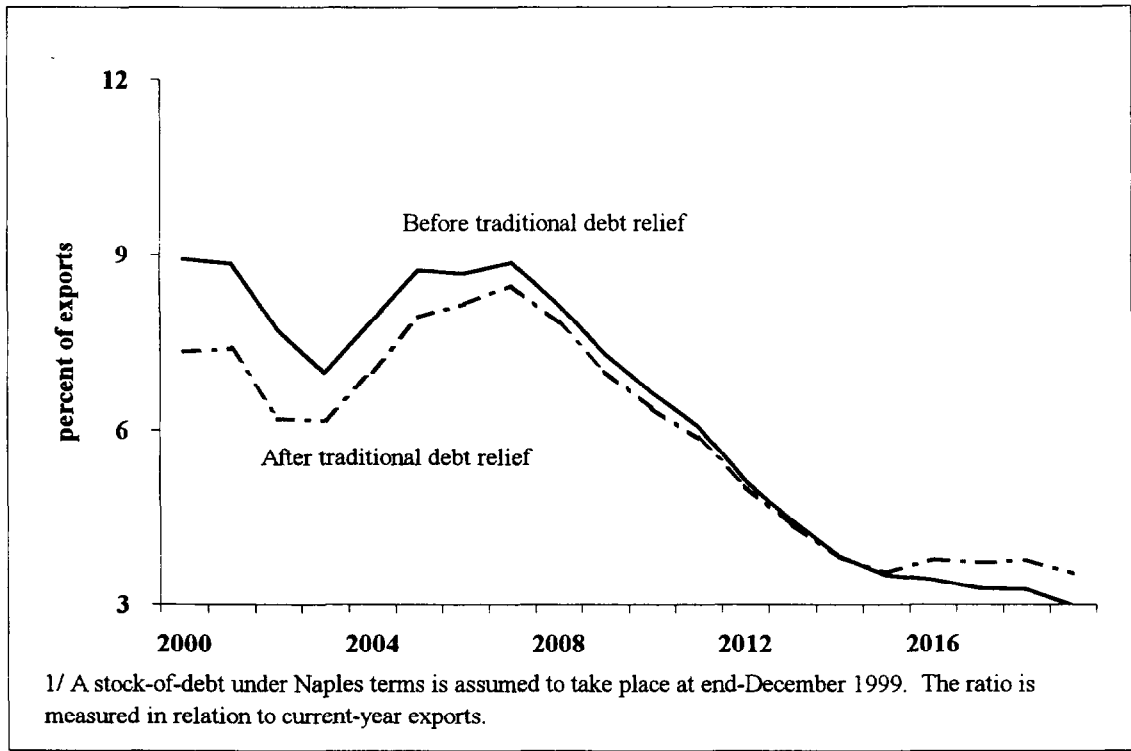
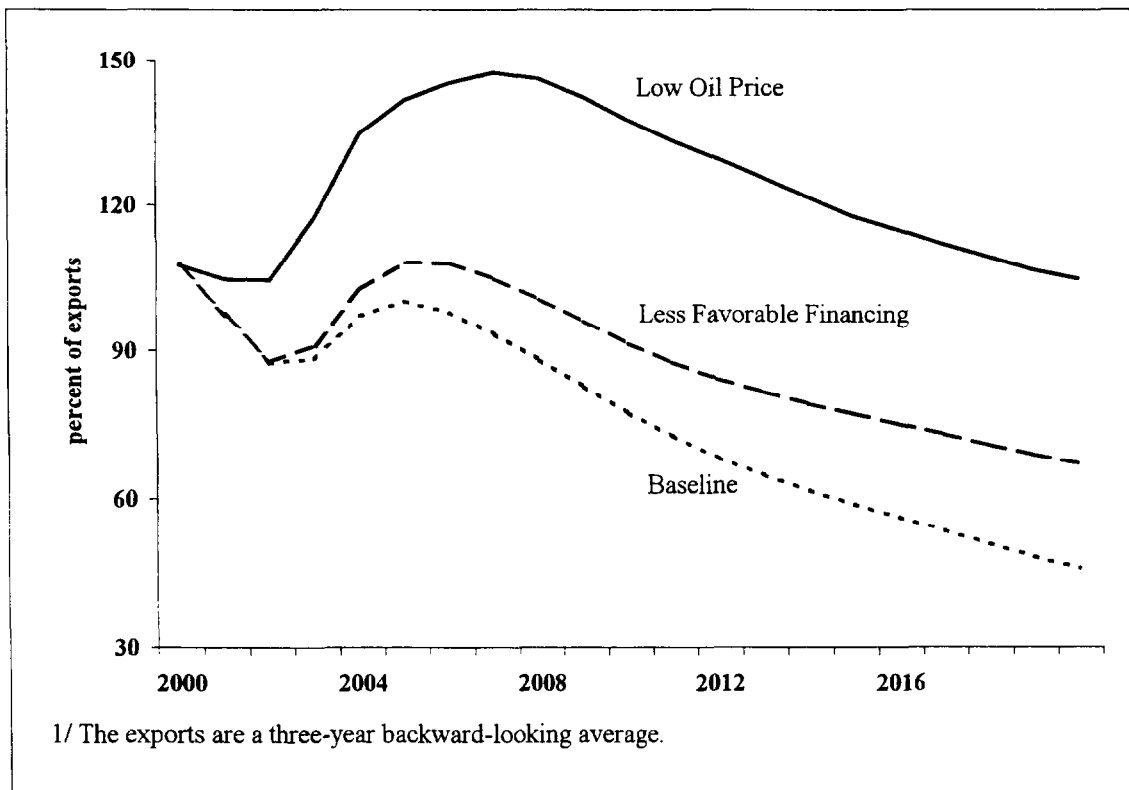


Figure 4. Yemen: NPV of Debt-to-Exports Ratio under Different Scenarios 1/



Source: Yemeni authorities and staff estimates.