

**CSIS**

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**Saudi Arabia Enters The 21st Century:  
Civil Graphics, Tables, and Maps**

*Review Draft – Circulated for Comment*

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# Introduction

**This draft analysis is be circulated for comment as part of the CSIS “Saudi Arabia Enters the 21<sup>st</sup> Century Project.” It will be extensively revised before final publication.**

**Those interested in commenting, or in participating in the project, should contact Anthony H. Cordesman at the address shown on the cover sheet at [Acordesman@aol.com](mailto:Acordesman@aol.com).**

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# The CSIS “Saudi Arabia Enters the 21<sup>st</sup> Century Project”

The CSIS is undertaking a new project to examine the trends shaping the future of Saudi Arabia and its impact on the stability of the Gulf. This project is supported by the Smith Richardson Foundation and builds on the work done for the CSIS Strategic Energy Initiative, the CSIS Net Assessment of the Middle East, and the Gulf in Transition Project. It is being conducted in conjunction with a separate – but closely related -- study called the Middle East Energy and Security Project.

The project is being conducted by Anthony H. Cordesman, the Arleigh A. Burke Chair in Strategy. It uses a net assessment approach that looks at all of the major factors affecting Saudi Arabia’s strategic, political, economic, and military position and future implications of current trends. It is examining the internal stability and security of Saudi Arabia, social and demographic trends, and the problem of Islamic extremism. It is also examining the changes taking place in the Saudi economy and petroleum industries, the problems of Saudisation, changes in export and trade patterns, and Saudi Arabia’s new emphasis on foreign investment.

The assessment of Saudi Arabia’s strategic position includes a full-scale analysis of Saudi military forces, defense expenditures, arms imports, military modernization, readiness, and war fighting capability. It also, however, looks beyond the military dimension and a narrowly definition of political stability, and examine the implications of the shifts in the pattern of Gulf, changes in Saudi external relations such changes in Saudi policy towards Iran and Iraq. It examines the cooperation and tensions between Saudi Arabia and the other Southern Gulf states. It examines the implications of the conventional military build-up and creeping proliferation of weapons of mass destruction in the Gulf, the resulting changes in Saudi Arabia’s security position. It also examines the security and strategic implications of the steady expansion of Saudi Arabia’s oil, gas, and petrochemical exports.

This project is examining the succession in the Royal Family, the immediate political probabilities, and the generational changes that are occurring in the royal family and Saudi Arabia’s technocrats. At the same time, it examines the future political, economic, and social trends in Saudi Arabia, and possible strategic futures for Saudi Arabia through the year 2010.

This examination of the strategic future of Saudi Arabia includes Saudi Arabia’s possible evolution in the face of different internal and external factors -- including changes in foreign and trade policies towards Saudi Arabia by the West, Japan, and the Gulf states. Key issues affecting Saudi Arabia’s future, including its economic development, relations with other states in the region, energy production and policies, and security relations with other states will be examined as well.

A central focus of this project is to examine the implications of change within Saudi Arabia, their probable mid and long-term impacts, and the most likely changes in the nature or behavior of Saudi Arabia’s current ruling elite, and to project the possible implications for both Gulf stability and the US position in the Gulf.

Work on the project will focus on the steady development of working documents that will be revised steadily during the coming months on the basis on outside comment. As a result, all of the material provided in this section of the CSIS web page should be regarded as working material that will change according to the comments received from policymakers and outside experts. To comment, provide suggestions, or provide corrections, please contact Anthony H. Cordesman at the CSIS at the address shown on each report, or e-mail him at [Acordesman@aol.com](mailto:Acordesman@aol.com).

Related material can be found in the “Gulf and Transition” and “ Middle East Energy and Security” sections of the CSIS Web Page at [CSIS.ORG](http://CSIS.ORG).

The author would like to thank Kevin Wein, Uzma Jamil, Carolyn Mann, Andrew Li, and Jeff Leary for their assistance in researching and editing this study, and David Long and Saint John Armitage for their comments and insights.

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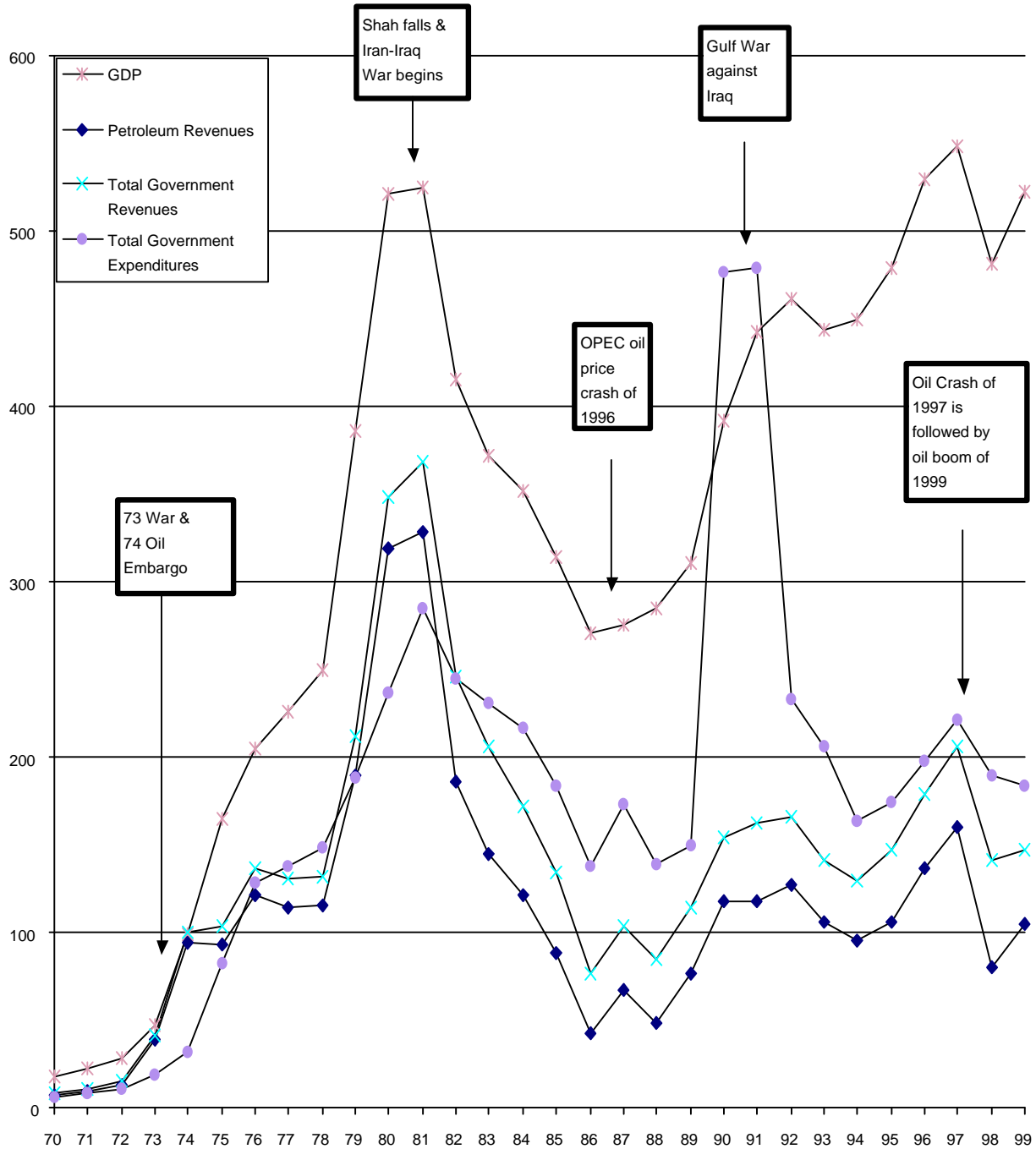
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Chart 1.1

The Impact of Oil Wealth on the Saudi GDP and Government Expenditures: 1970-1999



Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, 36<sup>th</sup> Annual Report- 1421H (2000G), Riyadh, SAMA, 2001, pp. 343-346, 360-361, 393-395. Note that the Saudi budget cycle was changed in 1990, and the period from 1990-1991 is reported as a single year.

Table 1.1

**Progress in Saudi Arabia: The Ministry of Planning Estimate – Part One**  
(Costs in Billions of Current Saudi Riyals Unless Otherwise Stated)

	1970	1974	1979	1985	1990	1995	1999
<b>GDP in Producer's Values</b>							
In Current Riyals	16.9	120.8	326.2	310.0	392.0	478.7	522.9
In Constant 1989 Riyals	115.2	222.7	327.9	276.8	341.0	387.3	409.4
Percentage from oil sector	56.1	65.3	51.9	22.5	33.3	36.3	35.3
<b>Government Expenditures and Revenues</b>							
Total Expenditures	6.1	32.0	188.3	184.0	210.4	173.9	181.0
Total Revenues	5.7	100.1	211.2	133.6	154.7	146.5	147.0
Percentage from oil sector	90.3	94.1	89.6	66.2	76.4	77.2	66.7
<b>Domestic Fixed Capital Formation</b>							
In Current Riyals	2.7	13.0	85.2	76.3	74.8	93.6	99.4
In Constant Riyals	19.2	44.7	125.4	97.2	70.7	67.9	82.0
<b>Exports 10.9</b>	126.2	213.1	99.5	166.3	187.4	221.9	
(Petroleum, Minerals, Chemicals, Plastics)	(10.89)	(126.0)	(211.5)	(96.8)	(160.4)	(179.3)	(200.2)
<b>Imports by Major Commodity Groups</b>	3.2	10.1	81.5	85.6	90.1	105.2	105.0
<b>Desalinized Water Output in Millions of US Gallons</b>	4.6	10.6	25.6	330.6	406.7	409.8	458.1
<b>Storage Capacity of Dam (Millions of Cubic Meters)</b>	60.3	62.4	83.1	370.9	449.8	774.8	778.3
<b>Factories in Operation</b>							
Number of Factories	199	357	734	1,401	1,800	2,419	3,163
Total Capital in Billions of Riyals	2.8	6.3	21.1	127.9	150.1	161.7	231.2
Manpower in 1,000s	14	28	75	155	183	221	292
<b>Power Sold in Millions of KWh</b>	1,690	3,400	13,499	41,904	58,973	85,889	105,612
<b>Production of Industrial Products</b>							
Cement (1,000s of Tons)	667	1,057	2,648	12,599	13,696	15,773	16,313
Chemical Fertilizers (1,000s of Tons)	24	175	290	916	2,186	4,012	4,364
All Petroleum Products (millions of BBL)	225	237	304	415	557	529	581.5
<b>Agricultural Production (1,000s of tons)</b>							
Cereals	213	299	340	2,191	4,138	2,670	2,334
Vegetables	-	674	705	1,443	2,201	2,690	2,757
Meat	43	87	87	348	456	592	686
Agricultural Loans (Billions of Riyals)	0.02	0.15	1.13	2.32	1.0	0.4	0.9
<b>Communications</b>							
Telephones Operating (1,000s)	29	90	277	936	1,278	1,568	2,706
Mobile Telephones (1,000s)	-	-	-	-	-	160	837
Outgoing Telegrams (Millions)	1.9	4.3	6.2	3.1	1.1	1.0	0.0
Domestic Letters (Millions)	19	32	61	116	194	251	345.6

Table 1.1

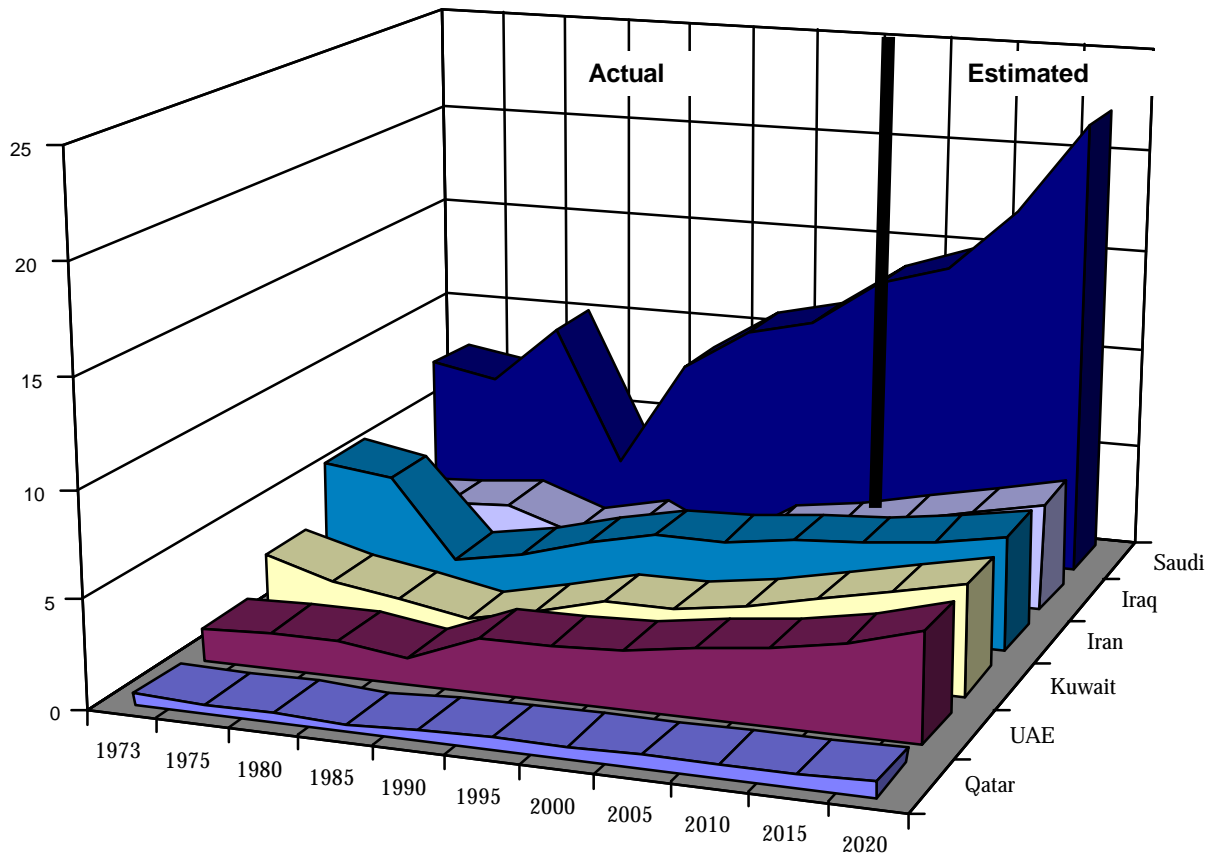
**Progress in Saudi Arabia: The Ministry of Planning Estimate – Part Two**  
(Costs in Billions of Current Saudi Riyals Unless Otherwise Stated)

	1970	1974	1979	1985	1990	1995	1996/7	1998	1999
Number of Students (Men & Women) in 1,000s									
Total	547	984	1,462	2,280	3,135	4,044	4,467	-	-
(Women only)	135	311	511	932	1,403	2,020	2,222	-	-
Secondary	16	42	93	172	291	452	608	672	734
(Women only)	2	10	29	72	132	232	309	337	368
Higher & Technical	8	23	70	116	154	204	300	349	377
(Women only)	-	3	13	41	62	87	138	174	181
Overseas	2	5	10	8	3	4	4	5	7
Number of Schools	3,283	5,634	11,070	15,093	17,038	21,854	22,301	22,678	22,770
Number of Teachers in 1,000s	23	44	78	151	209	281	340	-	-
Health and Medical (Ministry of Health Only)									
Number of Hospitals	47	58	67	105	163	175	180	182	186
Number of Health Centers	519	609	824	1,306	1,668	1,724	1,737	1,751	1,756
Hospital Beds	7,195	9,070	10,978	20,796	25,835	26,737	27,054	27,428	27,794
Number of Doctors (1,000s)	0.79	1.9	3.4	9.3	13.0	15.5	15.5	14.4	14.8
Total Medical Personnel (1,000a)	4.4	8.8	13.7	40.1	57.4	70.7	72.4	-	-
Government Subsidies – Dispersed	.017	0.82	3.9	12.1	8.3	6.5	6.3	5.4	5.1
Social Security									
Regular & Emergency in Billions of Rials	0.042	0.358	1.1	1.5	1.3	2.6	2.8	3.0	3.0
Public/Private Employees Covered (1,000s)	145	226	1,346	3,616	3,267	2,495	2,513	2,529	2,539
Pilgrims from Abroad (1,000s)	431	919	863	920	775	918	1,018	1,133	1,057
Roads and Vehicles									
Paved in 1,000s of Kilometers	8.0	9.7	18.9	32.9	38.5	42.7	44.1	45.2	45.5
Unpaved in 1,000s of Kilometers	3.5	6.8	20.1	57.5	80.4	99.0	102.3	104.4	106.3
Vehicles Registered (1,000s)	60	112	290	136.7	167.0	249.5	246.1	466.2	507.8
Railways									
Freight Ton Kilometers (Million)	34	192	397	733	743	1,008	1,251	923	900
Passenger Kilometers (Million)	39	67	89	67	151	165	208	209	267
Ports									
Berths	-	-	95	168	174	182	183	183	183
Cargo Handling Capacity in 1,000 Weight/Tons	1,837	3,652	31,1000	52,000	245,000	252,200	252,200	252,500	252,500
Airlines									
Arriving Passengers (Millions)	0.8	1.9	7.2	11.4	10.5	12.5	13.0	12.9	14.3
Incoming Cargo in 1,000s of Tons	10.3	24.8	58.8	229.8	206.8	240.3	274.0	280.4	289.6

Adapted by Anthony H. Cordesman from material provided by SAMA, and Ministry of Planning, Kingdom of Saudi Arabia: Achievements of the Development Plans 1390-1418 (1970-1998), Facts and Figures, 16<sup>th</sup> Issue, Riyadh, 1999, and Kingdom of Saudi Arabia, Ministry of Planning, Achievements of the Development Plans 1970-2000, Facts and Figures, Riyadh, Ministry of Planning, 2000, Part One (F). p. 20.

Chart 1.1

The “Swing State:” Saudi Petroleum Production Capacity Relative to Gulf and World Capacity During 1973-2020 – Part One  
(EIA Reference Case in MMBD)



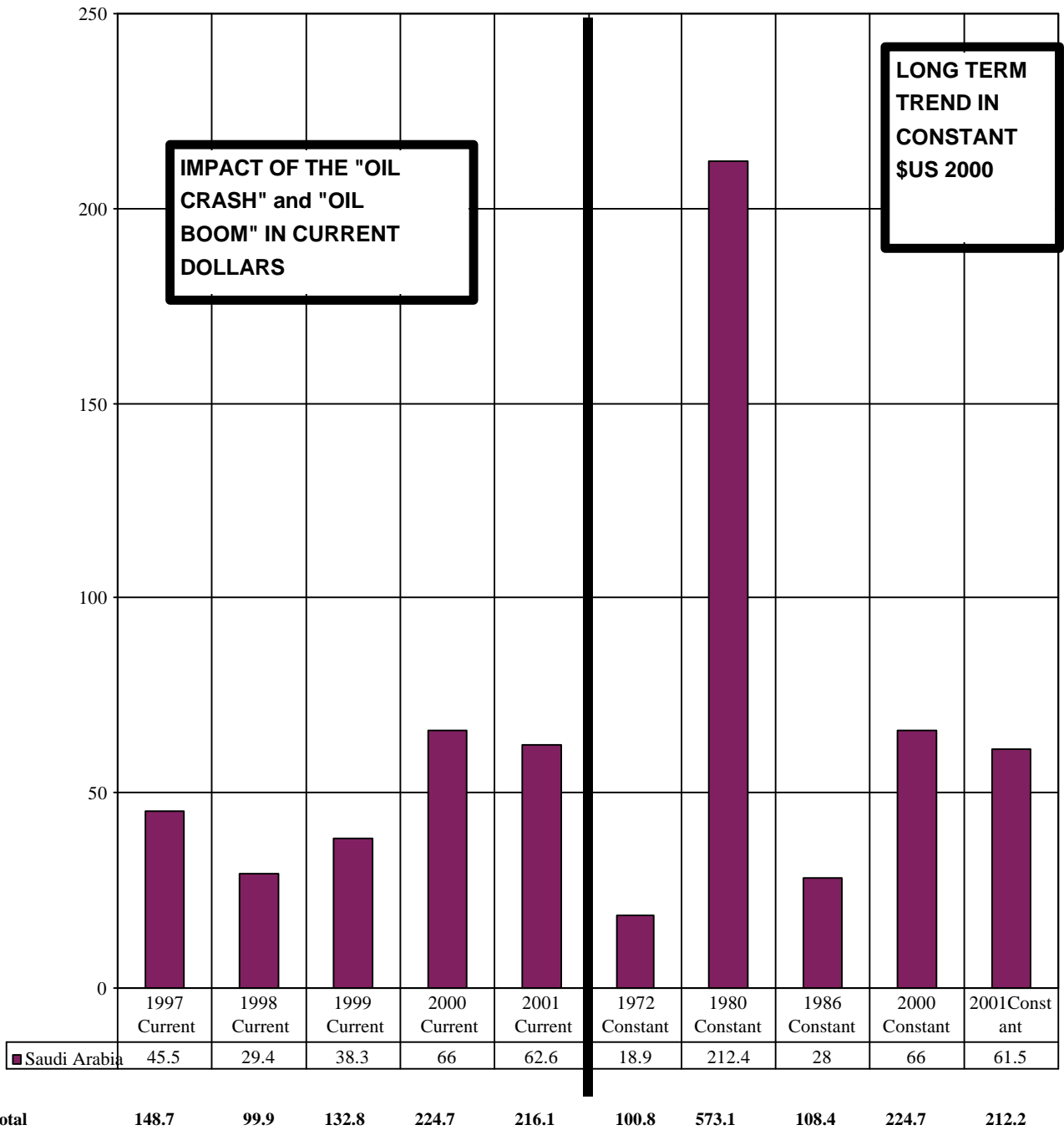
	1973	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
■ Qatar	0.57	0.438	0.472	0.301	0.5	0.6	0.6	0.6	0.6	0.6	0.7
■ UAE	1.533	1.644	1.709	1.193	2.5	2.6	2.7	3.2	3.6	4.2	5.1
■ Kuwait	3.02	2.084	1.656	1.023	1.7	2.6	2.6	3.1	3.8	4.5	5.2
■ Iran	5.8	5.35	1.662	2.25	3.2	3.9	3.9	4.3	4.5	4.9	5.5
■ Iraq	2.018	2.262	2.514	1.433	2.2	0.6	2.6	3.1	3.8	4.5	5.2
■ Saudi	7.596	7.075	9.9	3.388	8.5	10.6	11.4	13.6	14.7	17.7	22.1

Total Gulf	-	18.7	-	24.0	-	28.0	31.4	36.9	44.8
Saudi Arabia as % of Total	-	45.5	-	47.5	-	48.6	46.8	48.0	49.3
Total OPEC	-	27.2	-	34.2	-	40.6	45.1	50.8	58.8
Total World	-	69.5	-	78.7	-	87.7	96.6	105.6	115.4
Saudi Arabia as % of Total	-	12	-	14.5	-	15.5	15.2	16.8	19.1

Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, 1997, DOE/EIA-0484 (97), April 1997, pp. 157-160, and EIA, International Energy Outlook, 2000, DOE/EIA-0484 (2000), April 2000, Table D1.

Chart 1.2

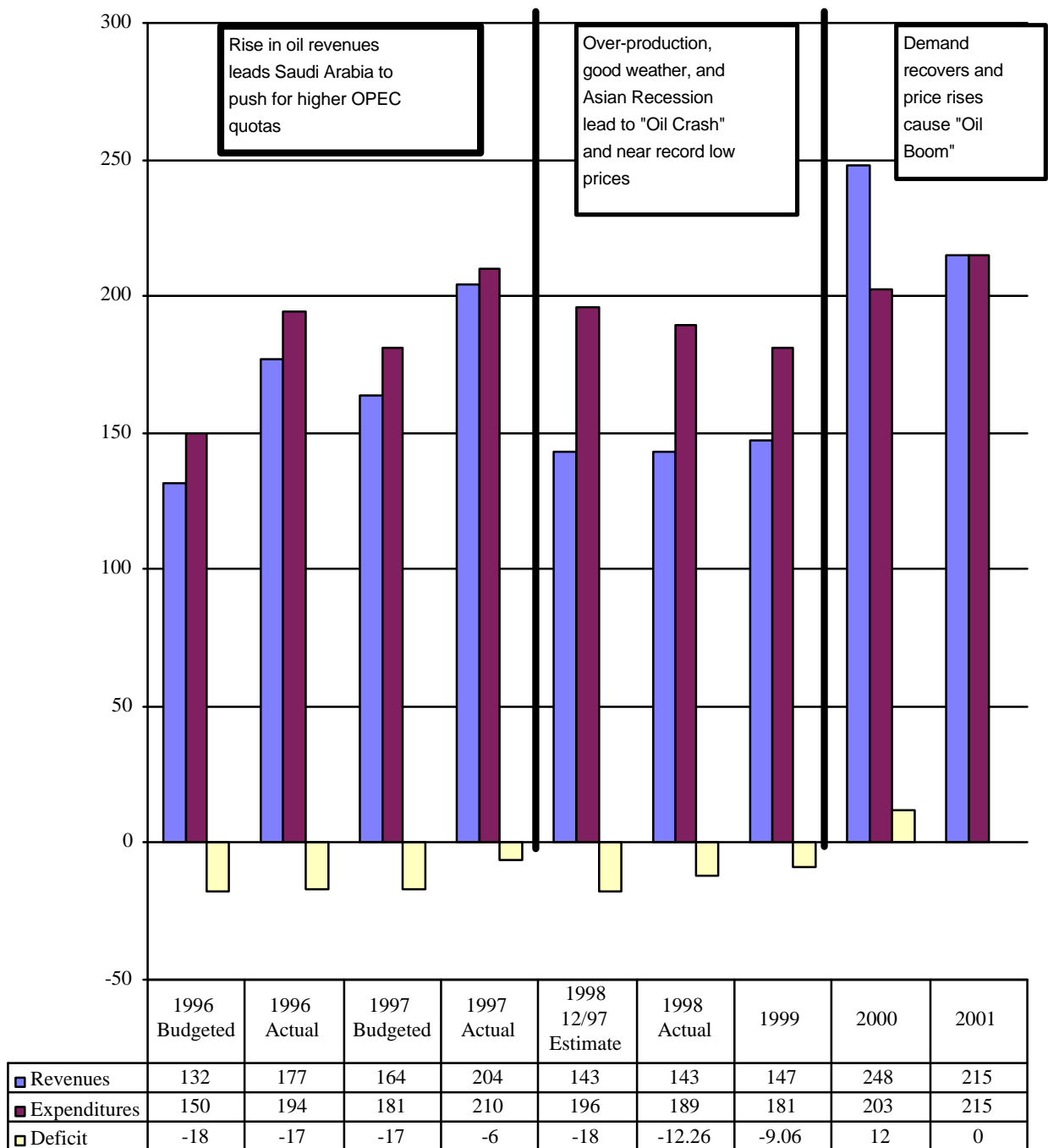
The Swings in Saudi Oil Export Revenues are Worse than in the Total for OPEC  
 (In \$US Current and 2000 Constant Billions)



Source: Adapted by Anthony H. Cordesman from data provided by the EIA as of March 2001 ([www.eia.gov/emeu/cabs/opecrev2.html](http://www.eia.gov/emeu/cabs/opecrev2.html).)

Chart 1.3

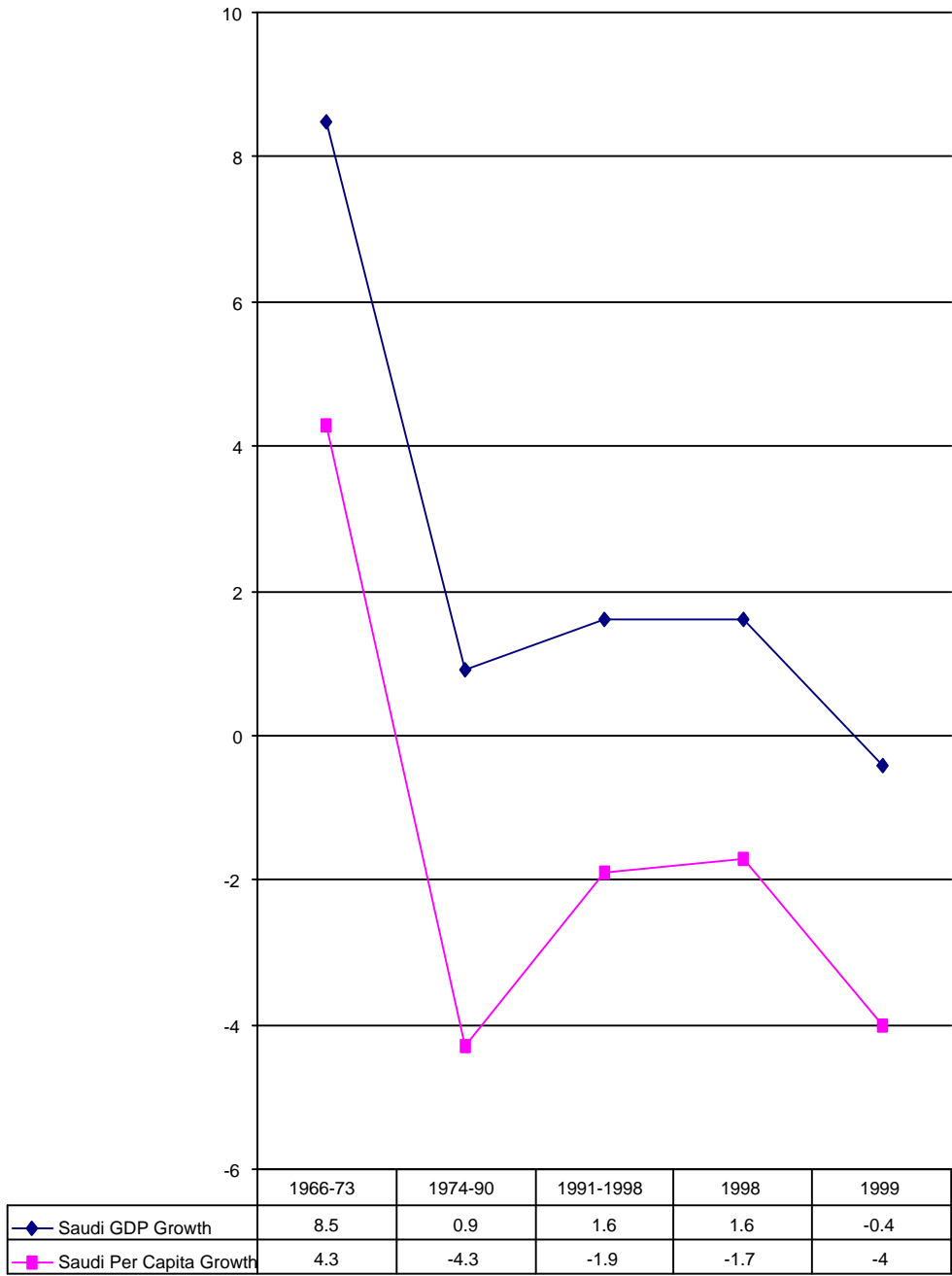
Pressures on the Saudi Budget: The Impact of the Recent "Oil Crash" and "Oil Boom"  
(In billions of Saudi Riyals)



Source: Adapted by Anthony H. Cordesman from *US-Saudi Business Brief*, Winter, 1998, p. 1; Reuters, December 28, 1998, 1728; and data provided by the Saudi Information Office in Washington DC in March 2001.

Chart 1.4

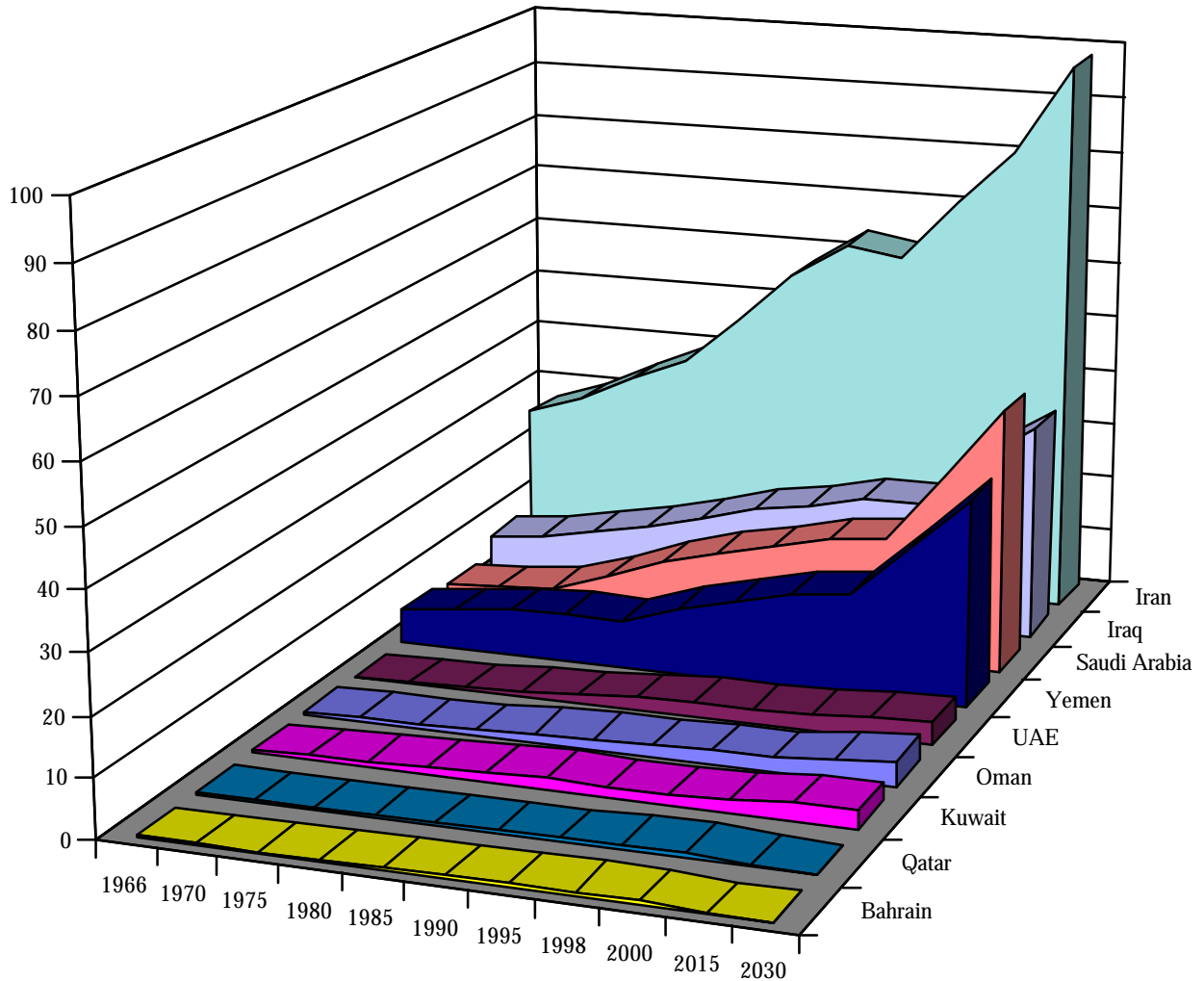
Saudi Annual Growth in GDP and GNP Per Capita: 1966-1999



Adapted by Anthony H. Cordesman from World Bank, Global Economic Prospects: 2000, Washington, World Bank, pp. 152-153

Chart 1.5

Living in a Crowded Desert: Saudi Population Growth Compared to Trends in Other Gulf Countries – Part One: The World Bank Estimate  
(Population in Millions)

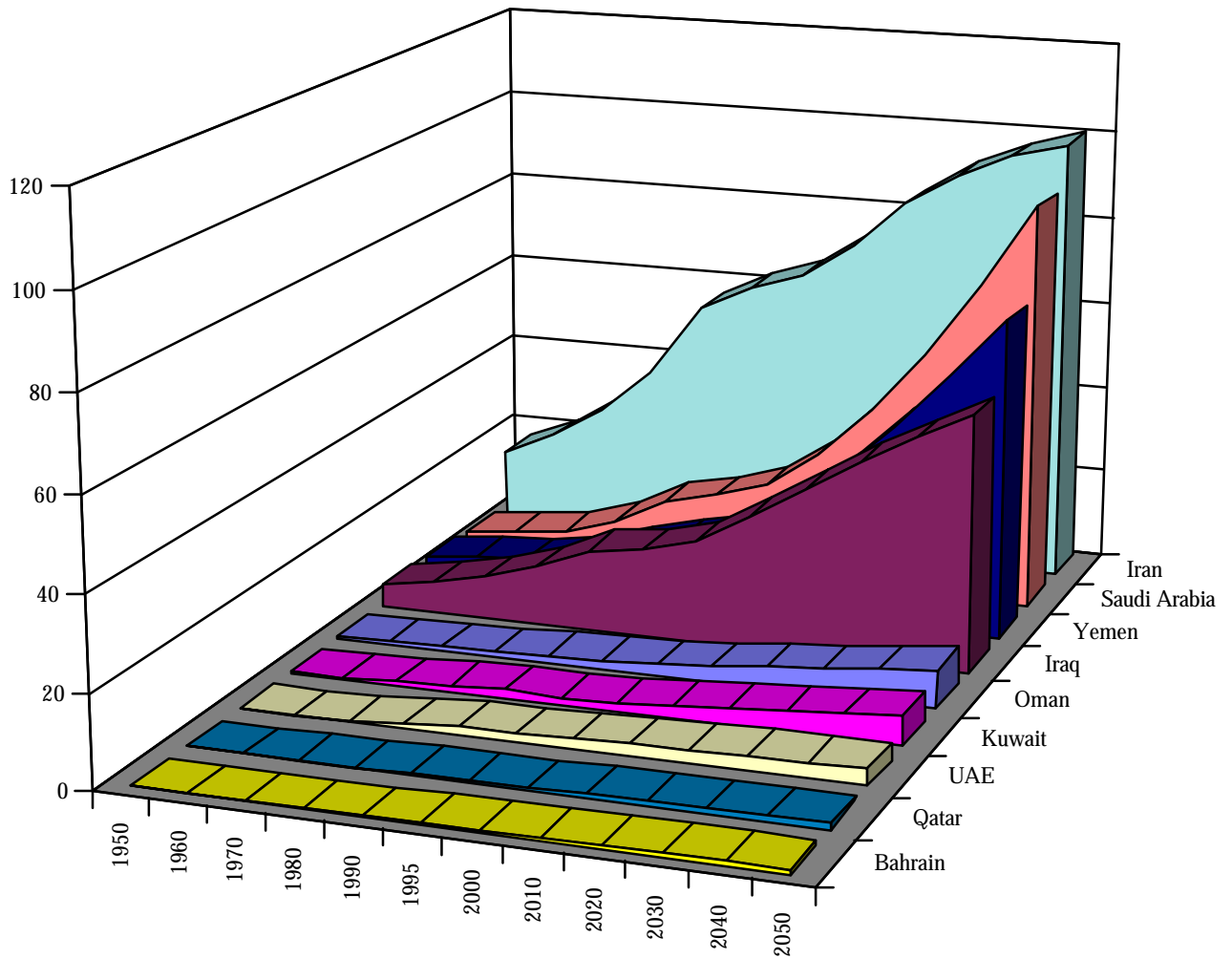


	1966	1970	1975	1980	1985	1990	1995	1998	2000	2015	2030
■ Bahrain	0.18	0.22	0.3	0.4	0.4	0.5	0.6	0.6	0.6	NA	NA
■ Qatar	0.07	0.09	0.14	0.3	0.3	0.4	0.5	0.6	0.7	NA	NA
■ Kuwait	0.5	0.8	1	1.4	1.7	2.1	1.7	1.9	2.3	2.9	3
■ Oman	0.6	0.7	0.8	1.1	1.5	1.8	2	2.3	2.3	3.3	4
■ UAE	0.2	0.3	0.7	1	1.6	2.3	2.8	2.7	2.8	3.7	4
■ Yemen	6.1	7.2	8.3	8.5	8.4	11.6	14.1	16.6	17.8	26.6	36
■ Saudi Arabia	4.8	5.4	6.2	9.4	13.2	15.9	18	20.7	21.7	33.7	46
■ Iraq	8.2	9.4	11.1	13	15.7	18.4	19.9	22.3	22.3	31.3	38
■ Iran	26.8	30.1	34.9	39.1	47.6	56.9	63.1	61.9	72.7	82.1	98

Adapted by Anthony H. Cordesman from data provided by the US State Department and the World Bank database for World Development Indicators, 2000, pp. 40 and 44. The World Bank does not report on Bahrain and Qatar. World Bank figures are otherwise used for 1980, 1998, 2015, and 2000.

Chart 1.5

Living in a Crowded Desert: Saudi Population Growth Compared to Trends in Other Gulf Countries – Part Two: The US Census Bureau Estimate  
(Population in Millions)

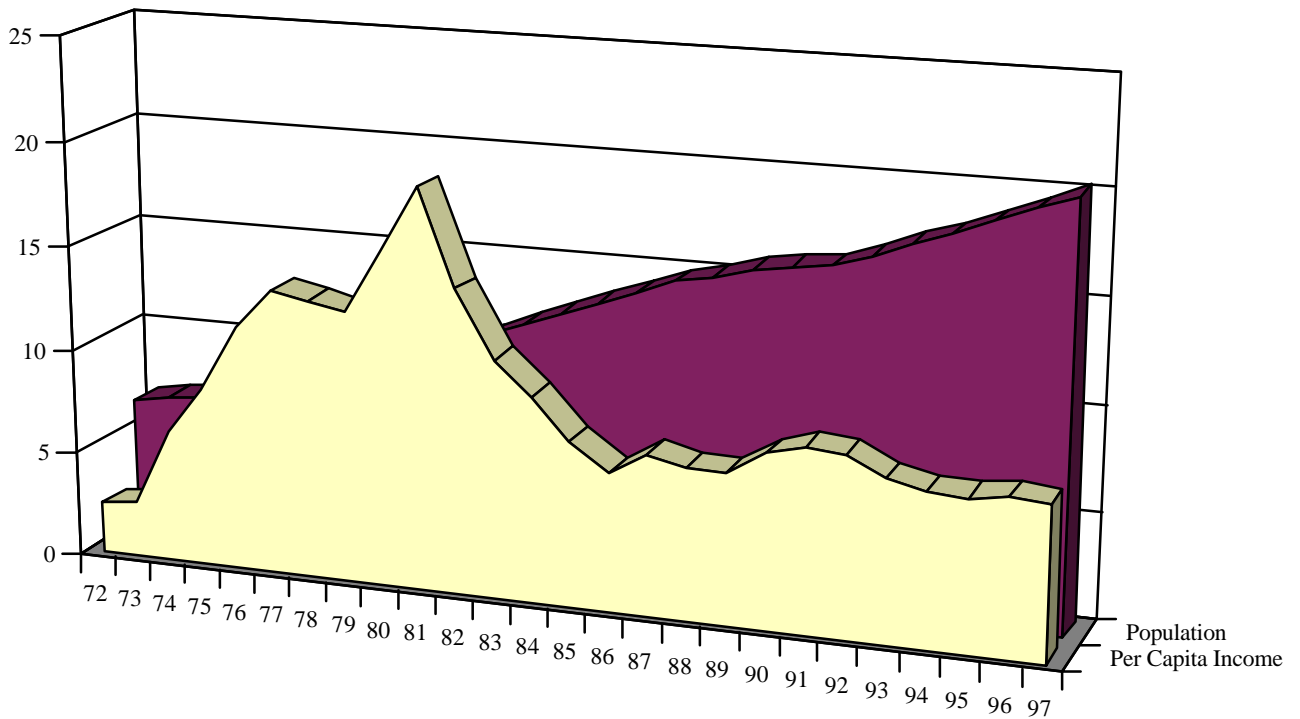


	1950	1960	1970	1980	1990	1995	2000	2010	2020	2030	2040	2050
■ Bahrain	0.11	0.16	0.22	0.35	0.5	0.57	0.63	0.74	0.83	0.9	0.95	0.97
■ Qatar	0.03	0.05	0.11	0.23	0.48	0.61	0.74	0.97	1.1	1.2	1.2	1.2
■ UAE	0.07	0.1	0.25	1	2	2.2	2.4	2.8	3.1	3.4	3.5	3.7
■ Kuwait	0.15	0.29	0.75	1.4	2.1	1.6	2	2.8	3.7	4.6	5.5	6.4
■ Oman	0.49	0.6	0.78	1.2	1.8	2.1	2.5	3.5	4.7	5.9	7.2	8.3
■ Iraq	5.2	6.8	9.4	13.2	18.1	19.6	22.7	29.7	36.9	43.9	50.5	56.4
■ Yemen	4.5	5.5	6.6	8.5	12	14.9	17.5	24.6	34.2	45.5	58	71.1
■ Saudi Arabia	3.7	4.7	6.1	9.9	15.8	18.6	22	30.5	41.9	55.8	72.3	91.1
■ Iran	16.4	21.6	28.9	39.3	55.7	61.5	65.6	73.8	84.2	91.7	96.9	100.2

Adapted by Anthony H. Cordesman from data provided by the US State Department and the World Bank database for World Development Indicators, 2000, pp. 40 and 44. The World Bank does not report on Bahrain and Qatar. World Bank figures are otherwise used for 1980, 1998, 2015, and 2000.

Chart 1.6

The Demographic Squeeze: Saudi Arabia: Population Growth in Millions versus Per Capita Income in Constant \$US Dollars  
 (Population in Millions; Per Capita Income in Thousands of Constant 1997 \$USD)



	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
■ Per Capita Income	2.4	2.6	6.3	8.6	12	14	13	13	16	19	15	11	9.8	7.9	6.6	7.7	7.2	7.2	8.3	8.8	8.7	7.8	7.3	7.2	7.4	7.3
■ Population	6.5	6.8	7	7.3	7.7	8.2	8.8	9.5	10	11	11	12	13	13	14	15	15	16	16	16	16	17	17	18	19	20

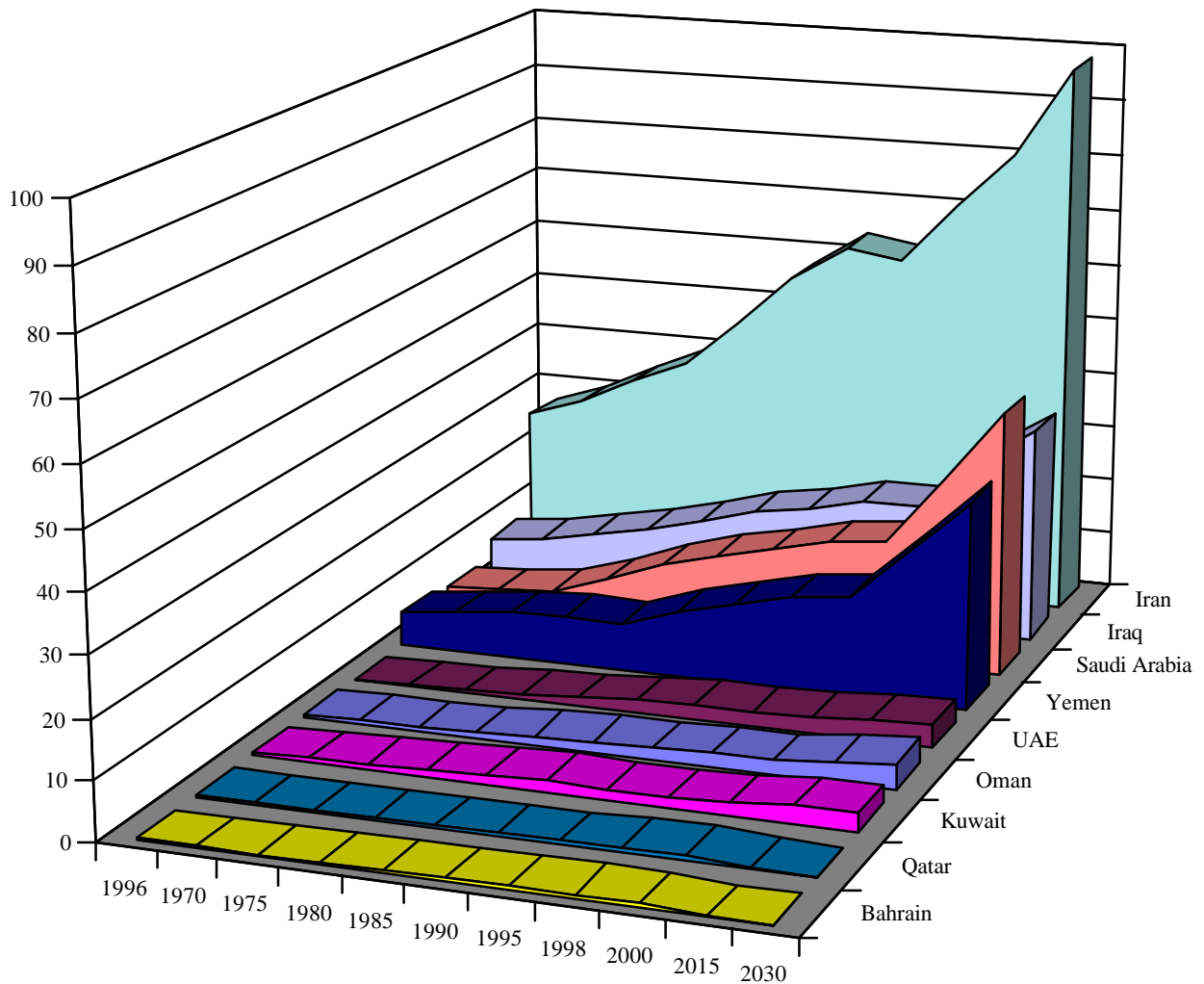
Adapted by Anthony H. Cordesman from data in various editions of World Military Expenditures and Arms Transfers.

Map 1.1

Saudi Arabia

**Chart 4.1**

**Living in a Crowded Desert: Saudi Population Growth Compared to Trends in Other Gulf Countries**  
(Population in Millions)

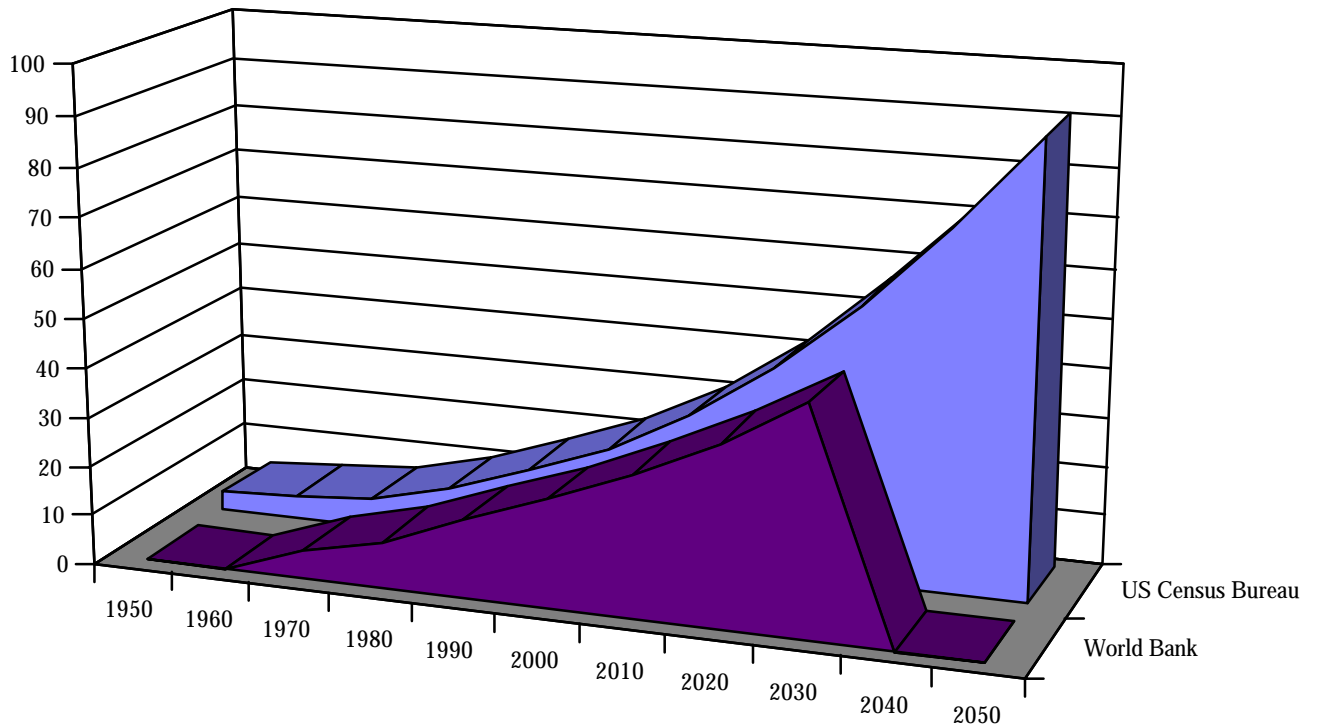


	1966	1970	1975	1980	1985	1990	1995	1998	2000	2015	2030
■ Bahrain	0.18	0.22	0.3	0.4	0.4	0.5	0.6	0.6	0.6	NA	NA
■ Qatar	0.07	0.09	0.14	0.3	0.3	0.4	0.5	0.6	0.7	NA	NA
■ Kuwait	0.5	0.8	1	1.4	1.7	2.1	1.7	1.9	2.3	2.9	3
■ Oman	0.6	0.7	0.8	1.1	1.5	1.8	2	2.3	2.3	3.3	4
■ UAE	0.2	0.3	0.7	1	1.6	2.3	2.8	2.7	2.8	3.7	4
■ Yemen	6.1	7.2	8.3	8.5	8.4	11.6	14.1	16.6	17.8	26.6	36
■ Saudi Arabia	4.8	5.4	6.2	9.4	13.2	15.9	18	20.7	21.7	33.7	46
■ Iraq	8.2	9.4	11.1	13	15.7	18.4	19.9	22.3	22.3	31.3	38
■ Iran	26.8	30.1	34.9	39.1	47.6	56.9	63.1	61.9	72.7	82.1	98

Adapted by Anthony H. Cordesman from data provided by the US State Department and the World Bank database for World Development Indicators, 2000, pp. 40 and 44. The World Bank does not report on Bahrain and Qatar. World Bank figures are otherwise used for 1980, 1998, 2015, and 2000.

Chart 4.2

World Bank versus Census Bureau Estimates of Saudi Population and Population Growth  
(Population in Millions)

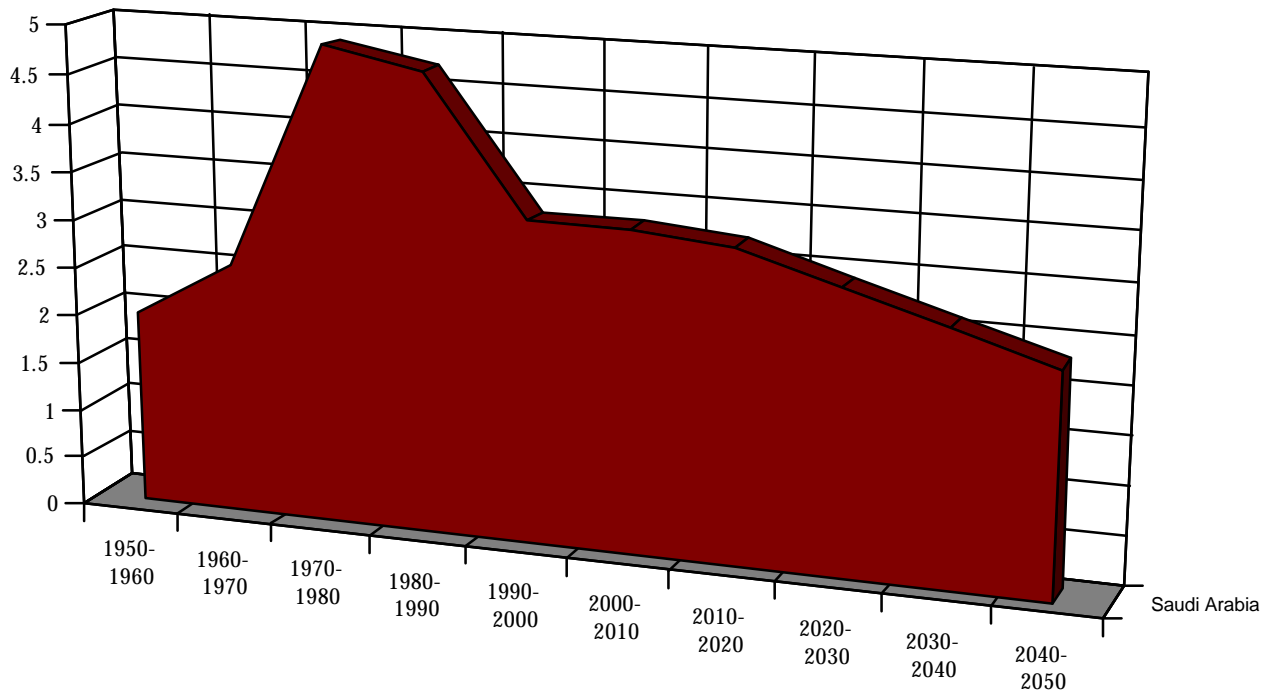


	1950	1960	1970	1980	1990	2000	2010	2020	2030	2040	2050
■ World Bank	NA	NA	5.4	9.4	15.9	21.7	28.3	36.4	46	NA	NA
■ US Census Bureau	3.8	4.7	6.1	9.9	15.8	22	30.5	41.9	55.8	72.3	91.1

Adapted by Anthony H. Cordesman from data provided by the US State Department and the World Bank database for World Development Indicators, 2000, pp. 40 and 44, and US Census Bureau IDB summary demographic data base on <http://www.census.gov/cgi-bin/ipc/idbsum?cty>

Chart 4.3

Estimated Trends in Saudi Population Growth: 1950-2050  
(Annual Growth Rate per Country in Percent)

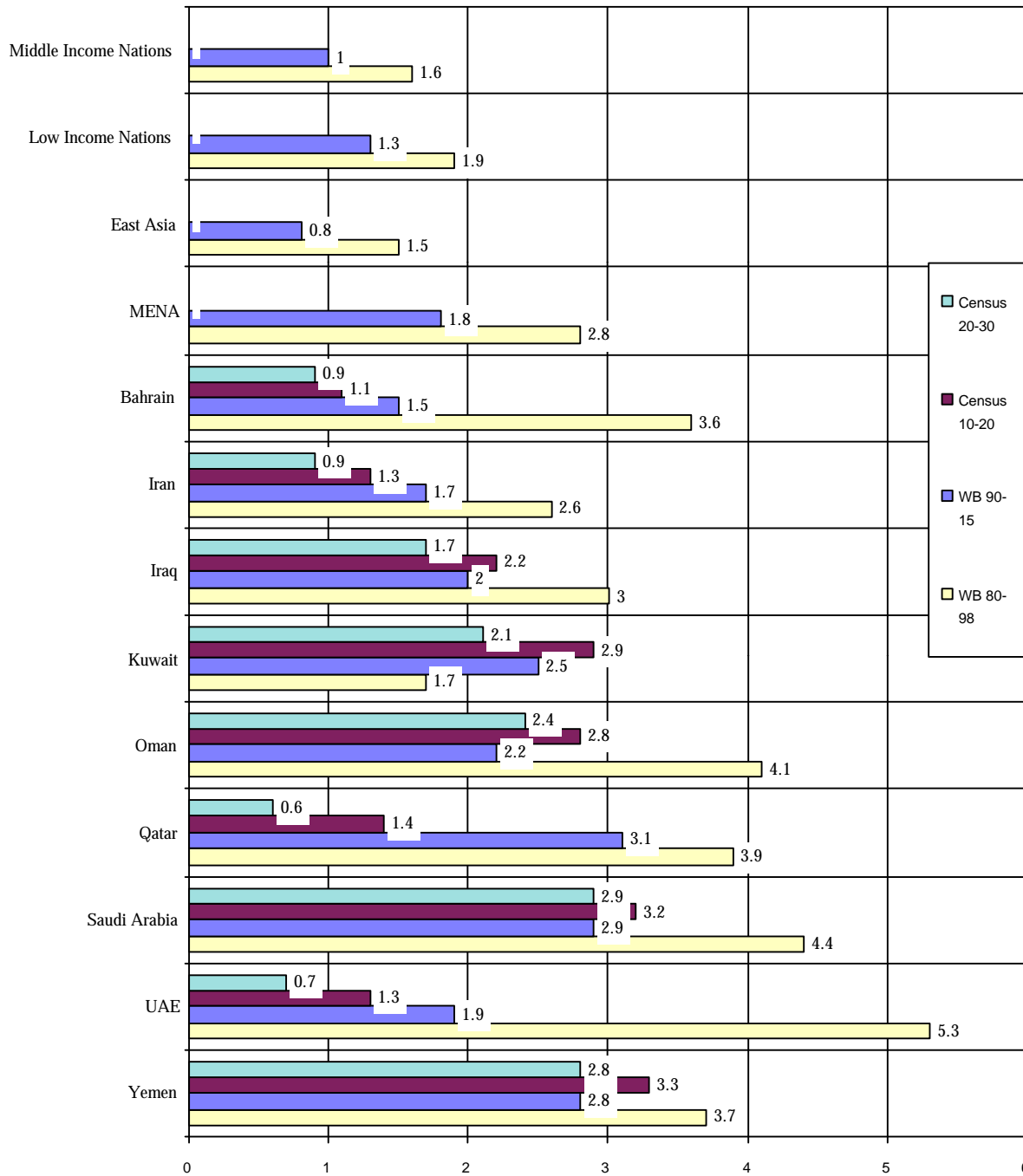


	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2010	2010-2020	2020-2030	2030-2040	2040-2050
■ Saudi Arabia	2	2.6	4.9	4.7	3.3	3.3	3.2	2.9	2.6	2.3

Adapted by Anthony H. Cordesman from CIA, World Factbook, 1998 and 2000, World Bank, World Development Indicators, 2000, pp. 38-40, and US Census Bureau IDB summary demographic data base on <http://www.census.gov/cgi-bin/ipc/idbsum?ctv>.

Chart 4.4

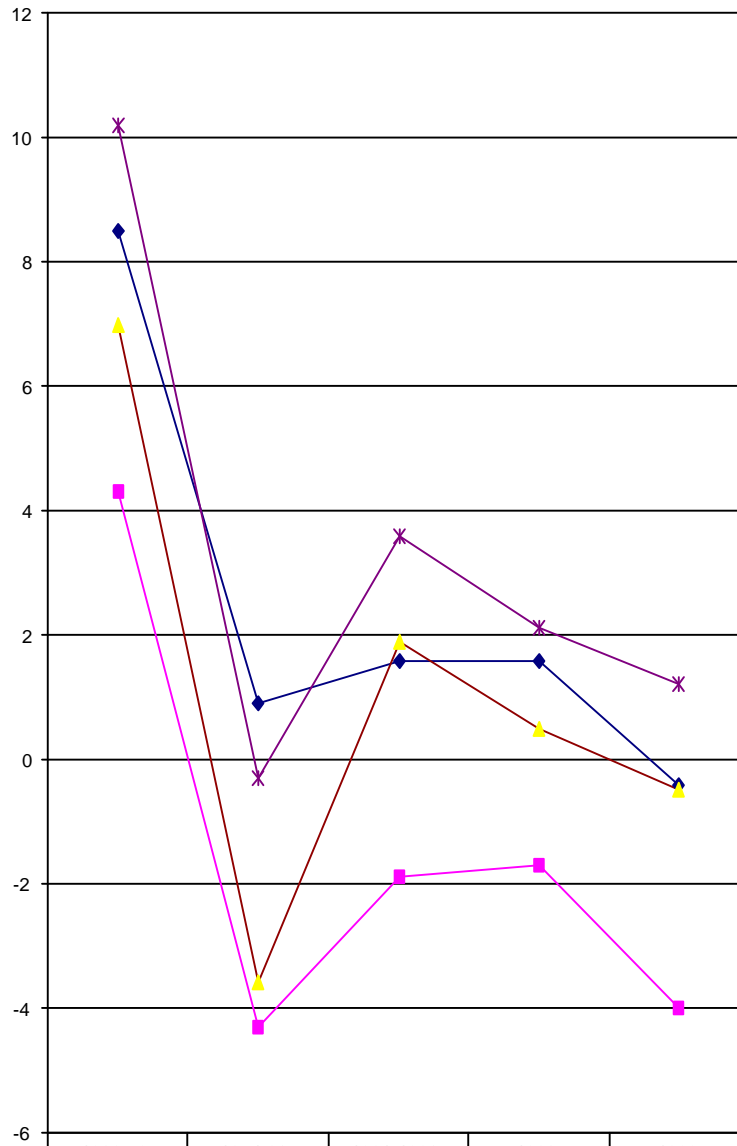
Saudi Arabia and Comparative Birth Rates in the Gulf  
(Average Percent of Annual Growth)



Adapted by Anthony H. Cordesman from World Bank, *World Development Indicators*, 2000, pp. 22-24, and US Census Bureau IDB summary demographic data base on <http://www.census.gov/cgi-bin/ipc/idbsum?cty>.

Chart 4.5

Saudi Annual Growth in GDP and GNP Per Capita: 1966-1999

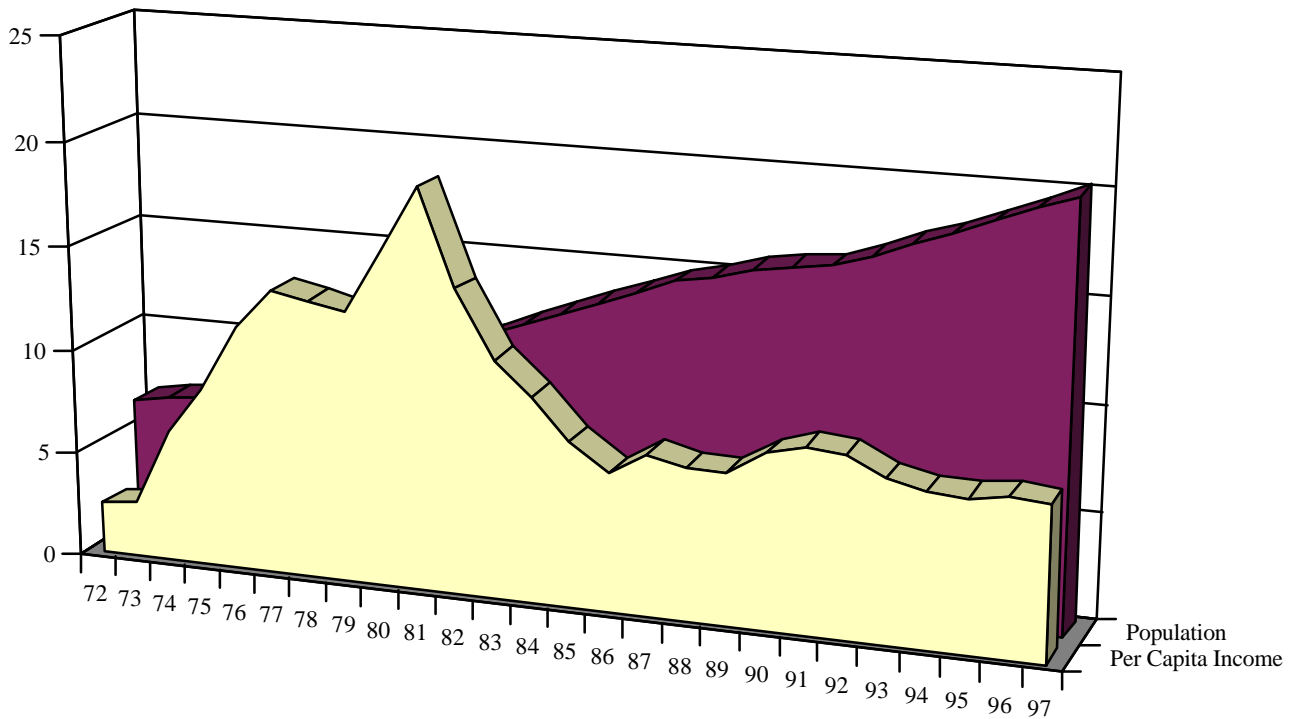


	1966-73	1974-90	1991-1998	1998	1999
—◆— Saudi GDP Growth - WB	8.5	0.9	1.6	1.6	-0.4
—■— Saudi Per Capita Growth	4.3	-4.3	-1.9	-1.7	-4
—*— Iranian GDP Growth	10.2	-0.3	3.6	2.1	1.2
—▲— Iranian Per Capita Growth	7	-3.6	1.9	0.5	-0.5

Adapted by Anthony H. Cordesman from World Bank, Global Economic Prospects: 2000, Washington, World Bank, pp. 152-153

Chart 4.5

Boom and Bust in Per Capita Wealth: Saudi Arabia: Population Growth in Millions and Per Capita Income in Constant 1997 US Dollars  
 (Population in Millions; Per Capita Income in Thousands of Constant 1997 \$USD)

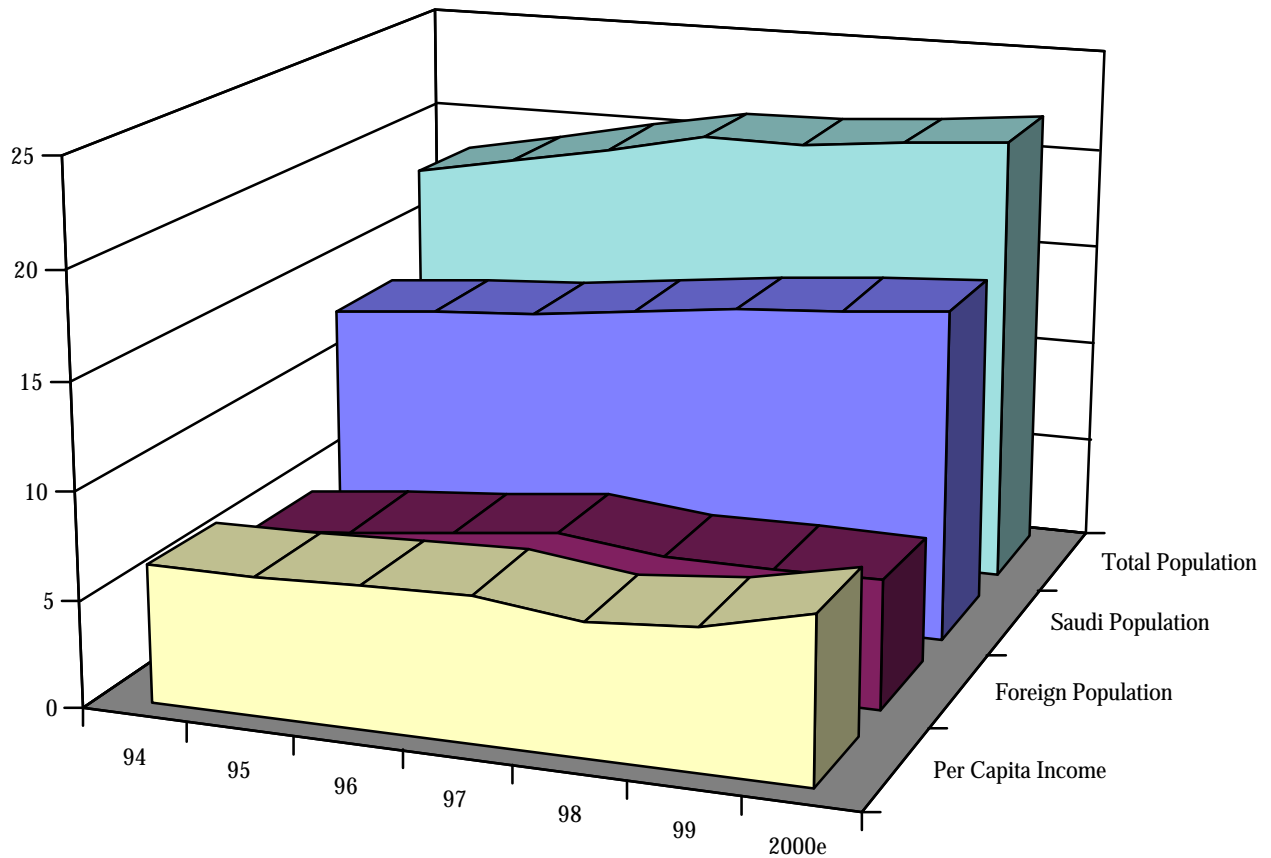


	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
■ Per Capita Income	2.4	2.6	6.3	8.6	12	14	13	13	16	19	15	11	9.8	7.9	6.6	7.7	7.2	7.2	8.3	8.8	8.7	7.8	7.3	7.2	7.4	7.3
■ Population	6.5	6.8	7	7.3	7.7	8.2	8.8	9.5	10	11	11	12	13	13	14	15	15	16	16	16	17	17	18	19	19	20

Adapted by Anthony H. Cordesman from data in various editions of World Military Expenditures and Arms Transfers.

**Chart 4.6**

**Recent Trends in the Saudi Population and GDP Per Capita in Current Dollars: The View of the Saudi American Bank**  
 (Population in Millions; Per Capita Income on 1,000s of Current \$USD)

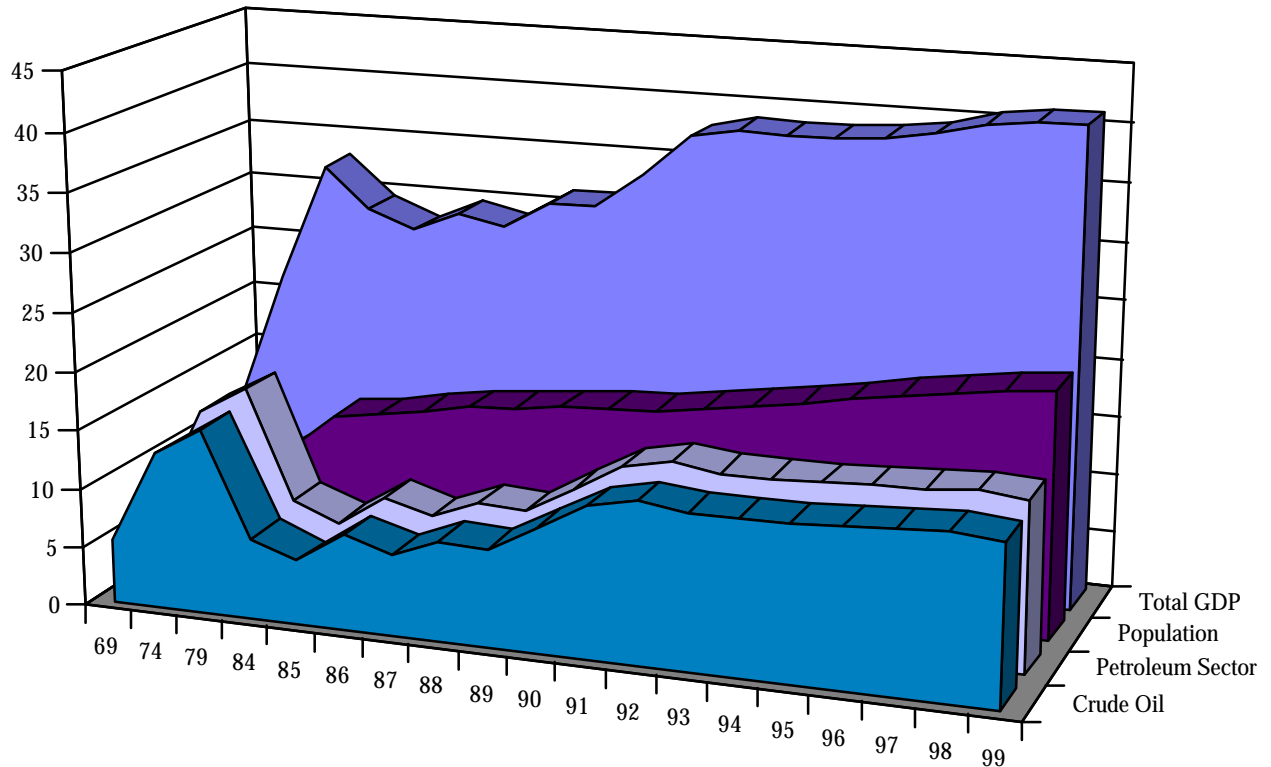


	94	95	96	97	98	99	2000e
■ Per Capita Income	6.47	6.47	6.7	6.8	6.2	6.6	7.7
■ Foreign Population	5	5.5	6	6.5	6	6	6
■ Saudi Population	13.2	13.6	14	14.5	15	15.4	15.8
■ Total Population	18.2	19.1	20	21	21	21.4	21.8

Adapted by Anthony H. Cordesman from data in Saudi American Bank, The Saudi Economy: Mid-Year 2000 Update, Saudi American Bank, August 2000.

Chart 4.7

Boom and Bust in Per Capita Oil Wealth: Saudi Arabia: Population Growth in Millions and Total Oil Income and GDP in Constant 1989 Riyals  
 (Population in Millions; Economic data in 10 Billions of Constant Saudi Riyals)

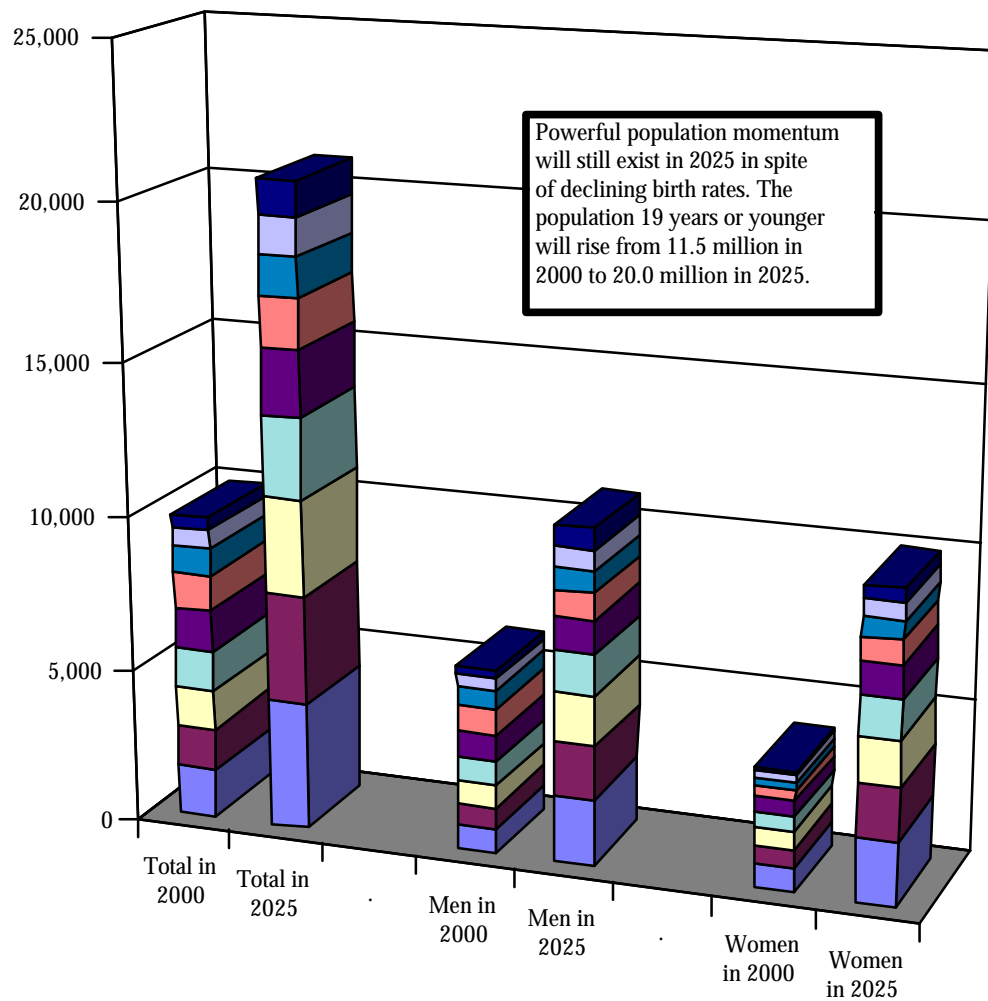


	69	74	79	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
■ Crude Oil	5.5	13.3	15.8	6.9	5.4	8.1	6.9	8.5	8.4	10.5	12.8	13.7	13.2	13.2	13.3	13.6	13.8	14.1	13.6
■ Petroleum Sector	6.5	14.7	17	7.8	6.2	8.9	7.7	9.2	9.1	11.4	13.7	14.5	14	14	14.1	14.3	14.5	14.8	14.5
■ Population	5.2	7	9.5	12.8	13.4	14.1	14.8	15.1	15.6	15.9	16.1	16.7	17.4	18	18.7	19.4	20.1	20.7	21.1
■ Total GDP	11.5	22.6	32.8	29.3	27.7	29.5	28.6	31	31.1	34.2	37.7	38.5	38.3	38.5	38.7	39.3	40.3	40.9	40.9

Adapted by Anthony H. Cordesman from data in Saudi Arabian Monetary Agency, Thirty-Sixth Annual Report, 1421H (2000G), Riyadh, SAMA, 2000, Tables 4 and 5, and population estimates taken from data provided by the US State Department.

Chart 4.8

The Challenge to Come: Growth in the Saudi Labor Force: 2000 versus 2025  
(In Thousands in Prime Working Age)



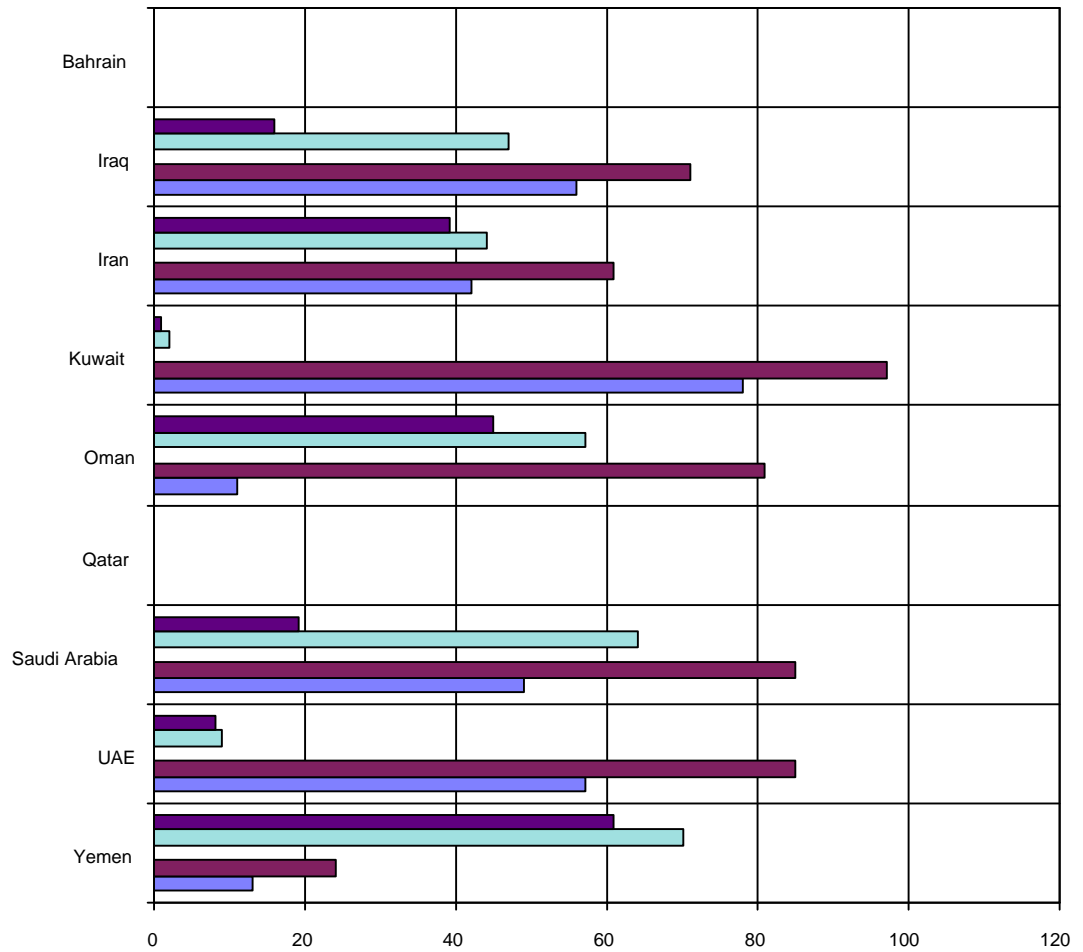
	Total in 2000	Total in 2025		Men in 2000	Men in 2025		Women in 2000	Women in 2025
■ Age 60-64	415	1,143		265	683		151	460
□ Age 55-59	616	1,220		421	677		195	543
■ Age 50-54	888	1,291		621	688		266	603
■ Age 45-49	1,165	1,597		802	839		363	758
■ Age 40-44	1,332	2,139		874	1102		457	1038
■ Age 35-39	1,308	2,643		796	1346		511	1297
■ Age 30-34	1,309	3,100		728	1590		581	1511
■ Age 25-29	1,318	3,543		692	1809		626	1733
■ Age 20-24	1,588	4,153		818	2119		771	2034

Source: Adapted by Anthony H. Cordesman from US Census Bureau on line demographic data for Saudi Arabia, accessed May, 2001.

**Chart 4.9**

**Massive On-Going Pressures for Social Change: Massive Urbanization and Sharp Decline in the Role of Agriculture**

(Labor in Agriculture in Percentages of labor force and Urbanization as Percent of Total Population)

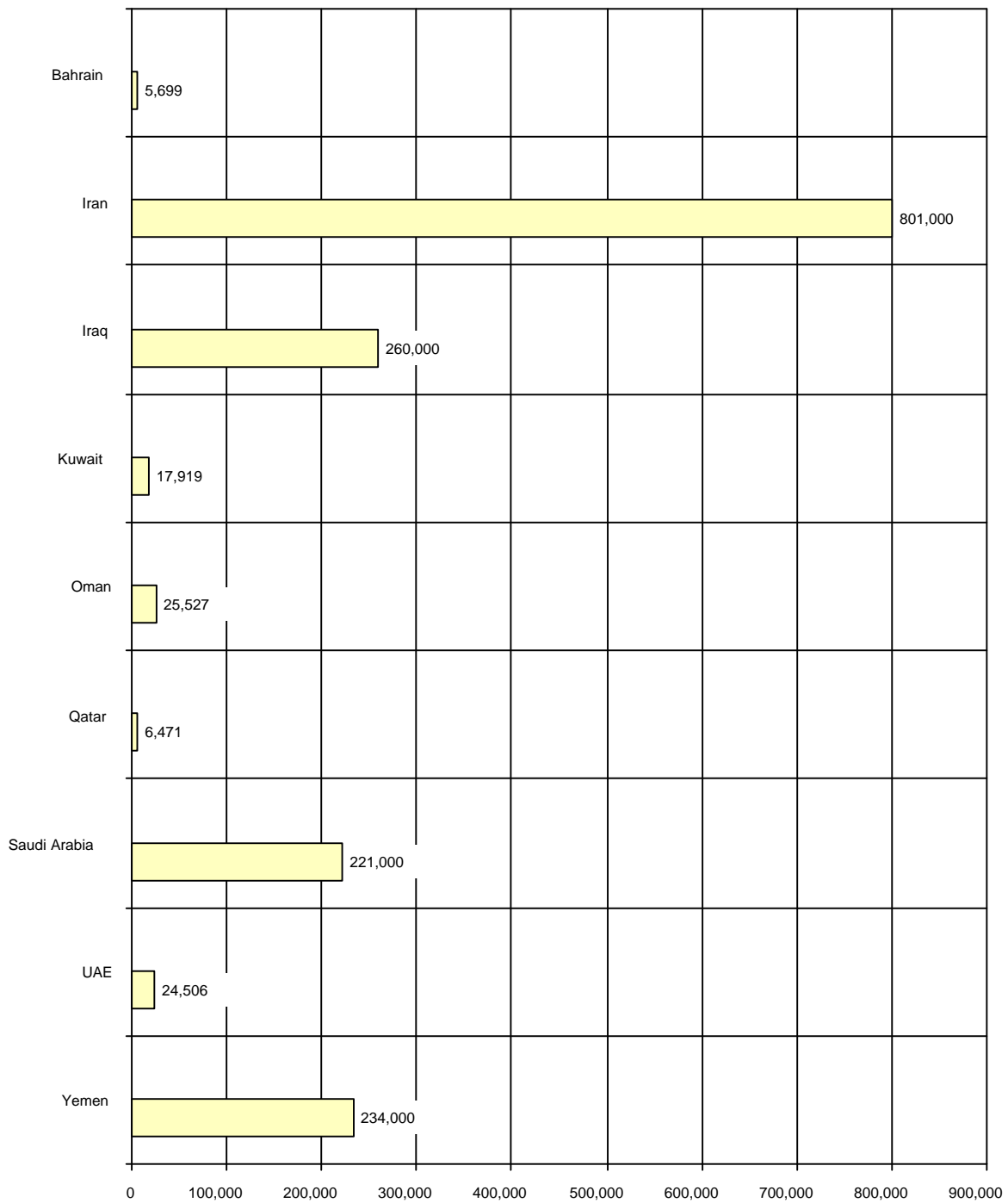


	Yemen	UAE	Saudi Arabia	Qatar	Oman	Kuwait	Iran	Iraq	Bahrain
■ Labor in Agriculture in 1998	61	8	19	-	45	1	39	16	-
■ Labor in Agriculture 1970	70	9	64	-	57	2	44	47	-
■ .									
■ Urbanization in 1998	24	85	85	-	81	97	61	71	-
■ Urbanization in 1970	13	57	49	-	11	78	42	56	-

Source: Adapted by Anthony H. Cordesman World Bank, World Development Indicators, 2000, pp. 26-28

Chart 4.10

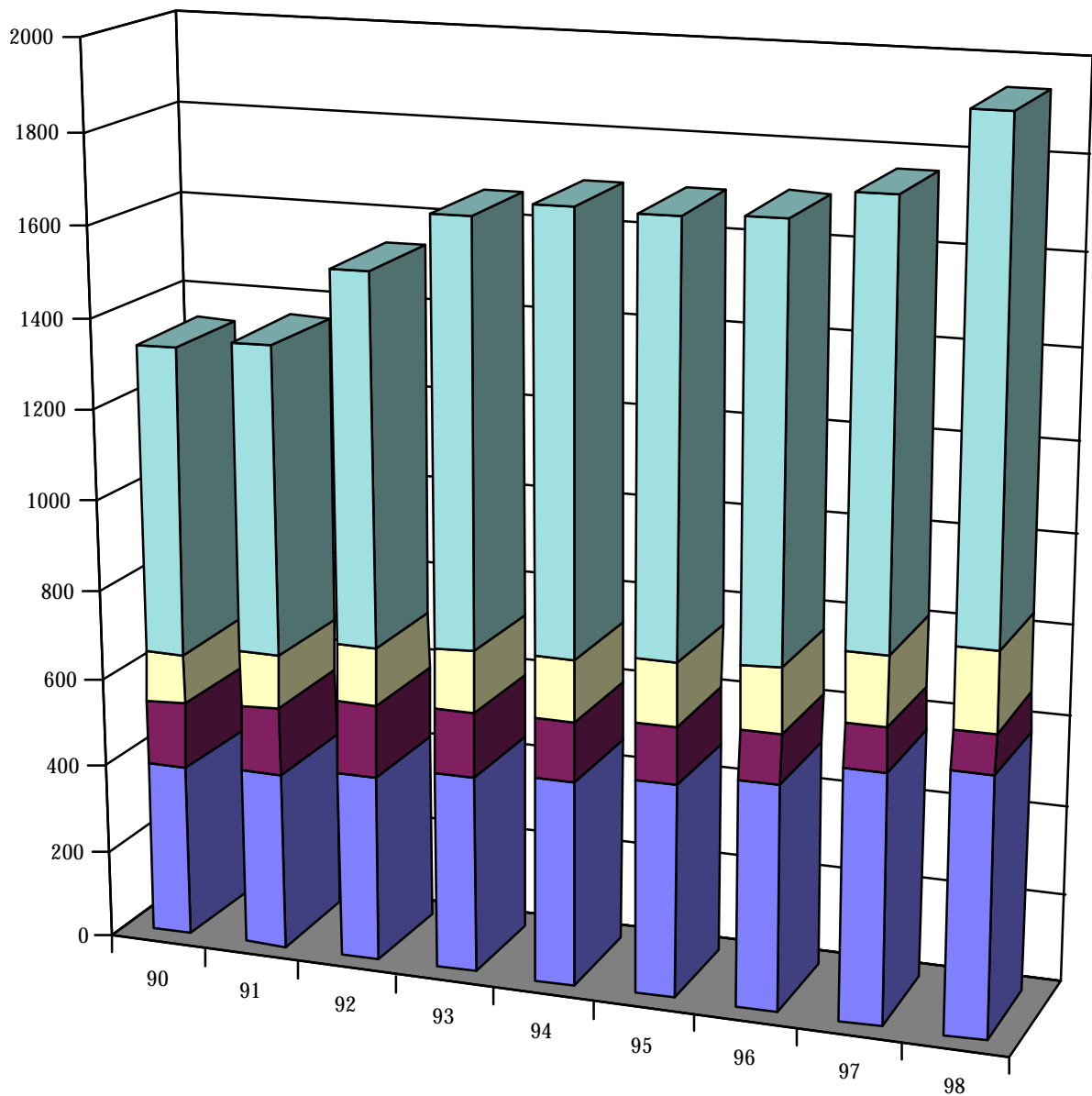
The Search for Jobs: CIA Estimate of Number of Young Males Entering the Labor Market Each Year



Adapted by Anthony H. Cordesman from CIA, World Factbook, 2000

Chart 4.11

**Recent Trends in the Saudi Labor Force: Saudisation is Failing in the Private Sector**  
(In Thousands)



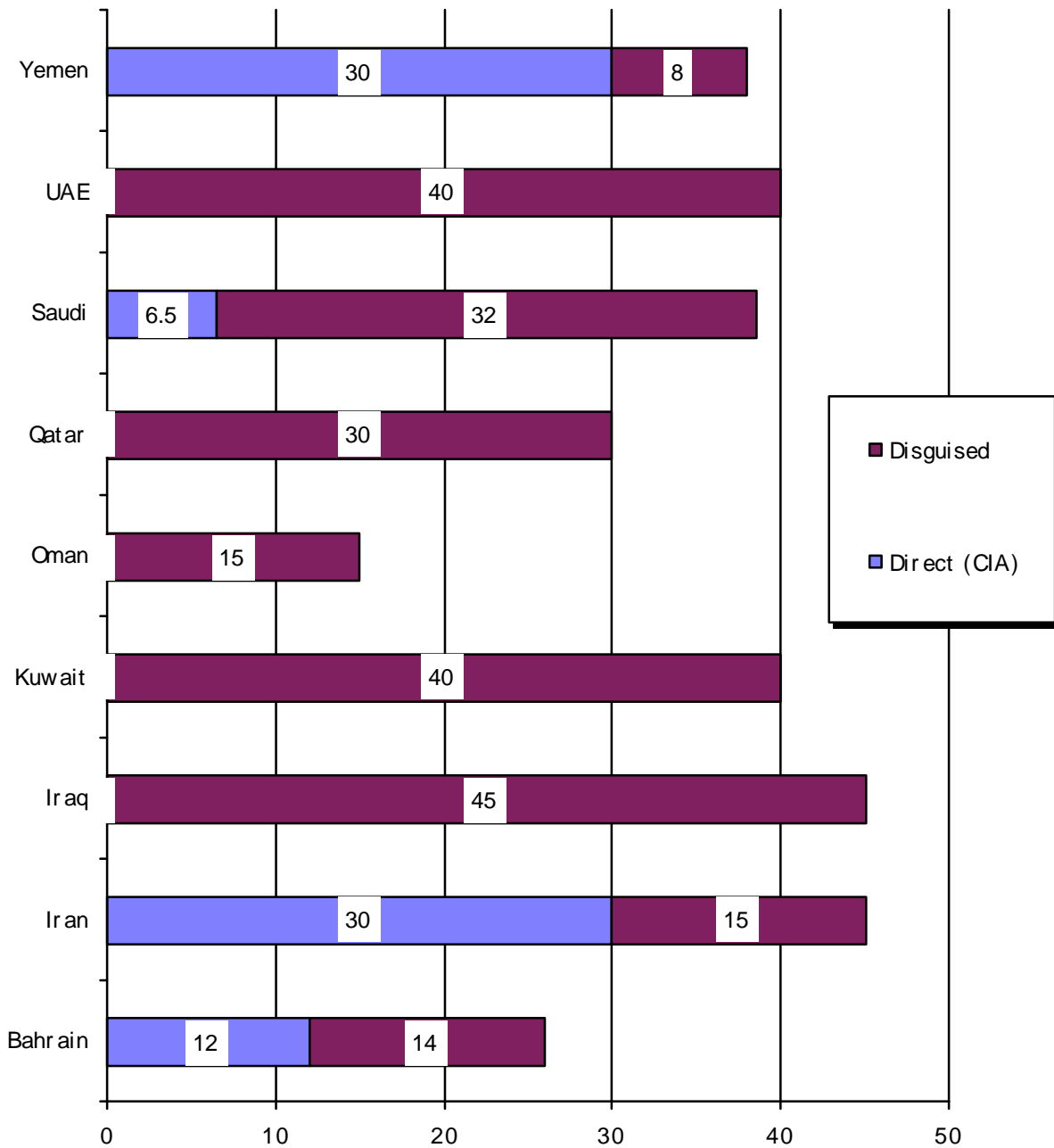
	90	91	92	93	94	95	96	97	98
■ Foreigners in Private Sector	686.2	686	822.2	938.1	964.4	945	940.8	949.6	1097.8
■ Saudis in Private Sector	114.2	122.2	128.9	136	137.1	137.6	142.7	155.3	173.6
■ Foreigners in Government	147.9	151.6	159.6	144.9	133	128.7	109.7	96	89
■ Saudis in Government	386.8	396.9	420.7	444.4	460.8	480.3	506.6	560.7	579.4

Adapted by Anthony H. Cordesman from data in Saudi Arabian Monetary Agency, *Thirty-Sixth Annual Report, 1421H (2000G)*, Riyadh, SAMA, 2000, Tables 4 and 5, and population estimates taken from data provided by the US State Department.

Chart 4.12

Over-dependence on Non-Productive Government Jobs Has a Cost: Estimated Comparative Direct and Disguised Unemployment Rate in the Middle East; A Rough Estimate

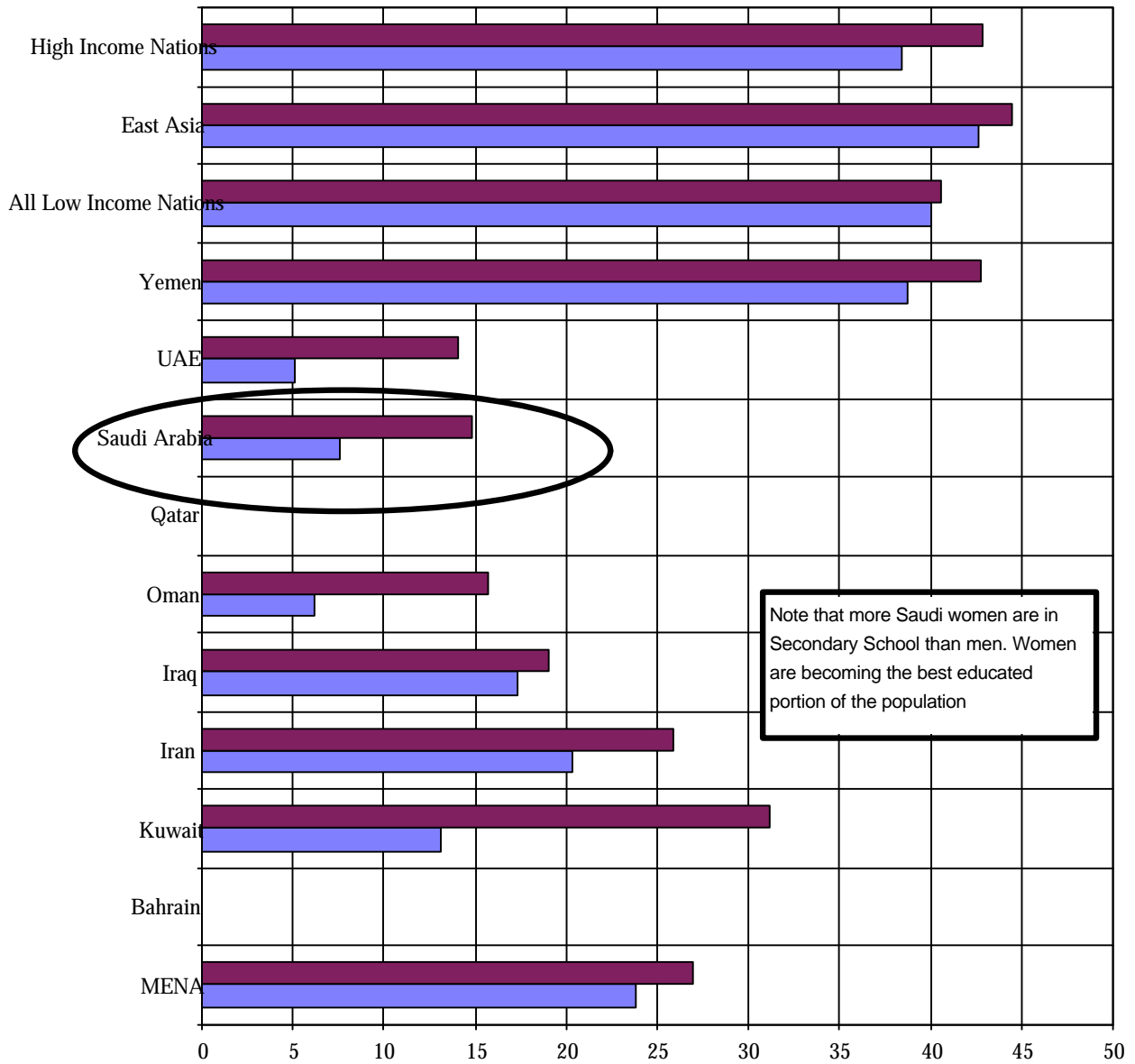
(Rate measured in Percent)



Rough estimate by Anthony H. Cordesman based on CIA and World Bank estimates for 1999. Disguised includes public sector, civil service, and private sector jobs with no use economic output.

Chart 4.13

Women as a Percent of the Labor Force: Pace of Social Change

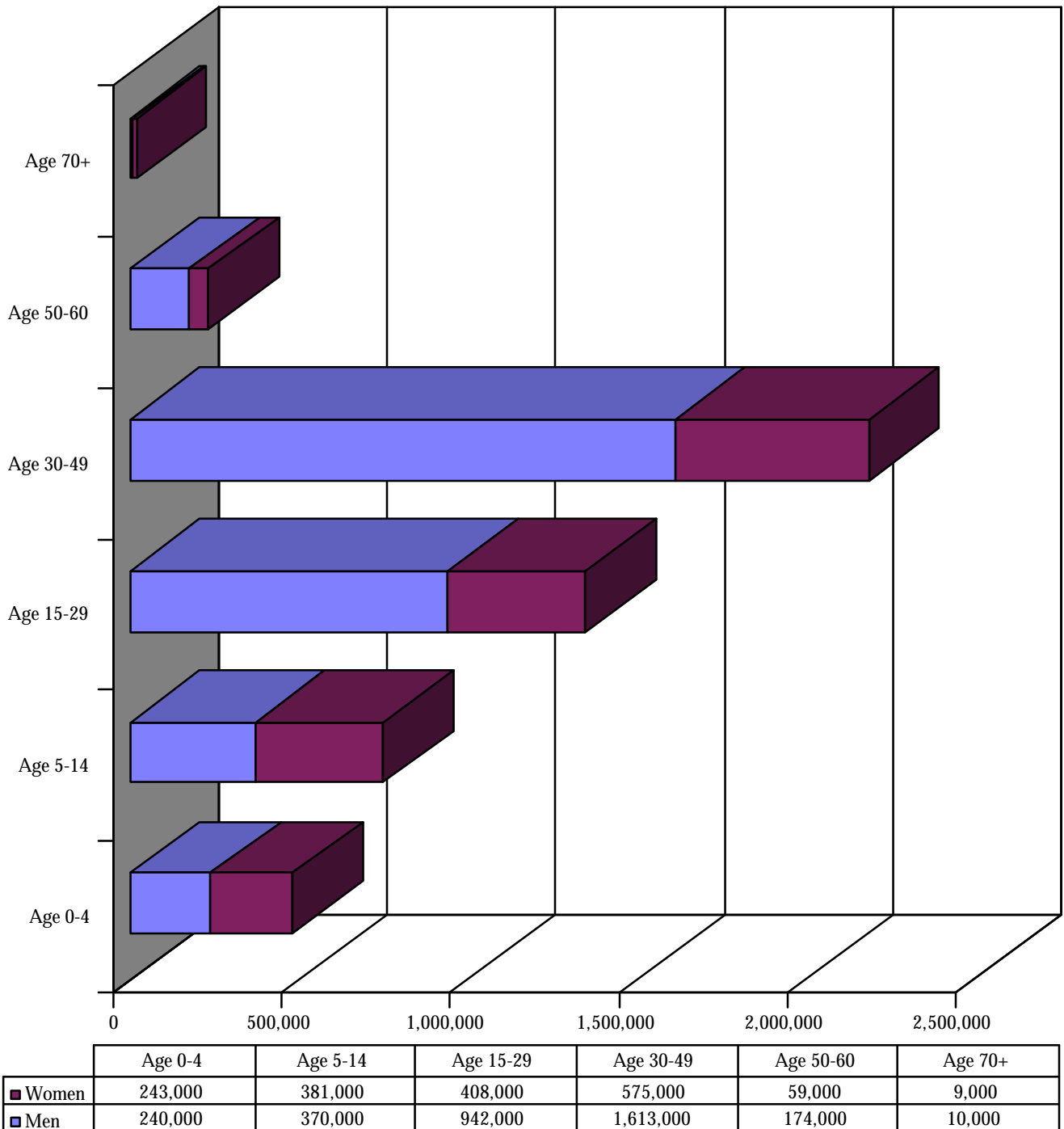


	MENA	Bahrain	Kuwait	Iran	Iraq	Oman	Qatar	Saudi Arabia	UAE	Yemen	All Low Income Nations	East Asia	High Income Nations
■ 1998	26.9	-	31.2	25.9	19	15.7	-	14.8	14.1	42.7	40.6	44.5	42.9
■ 1980	23.8	-	13.1	20.4	17.3	6.2	-	7.6	5.1	38.7	40	42.6	38.4

Adapted by Anthony H. Cordesman from World Bank, World Development Indicators, 2000, pp. 46-48.

Chart 4.14

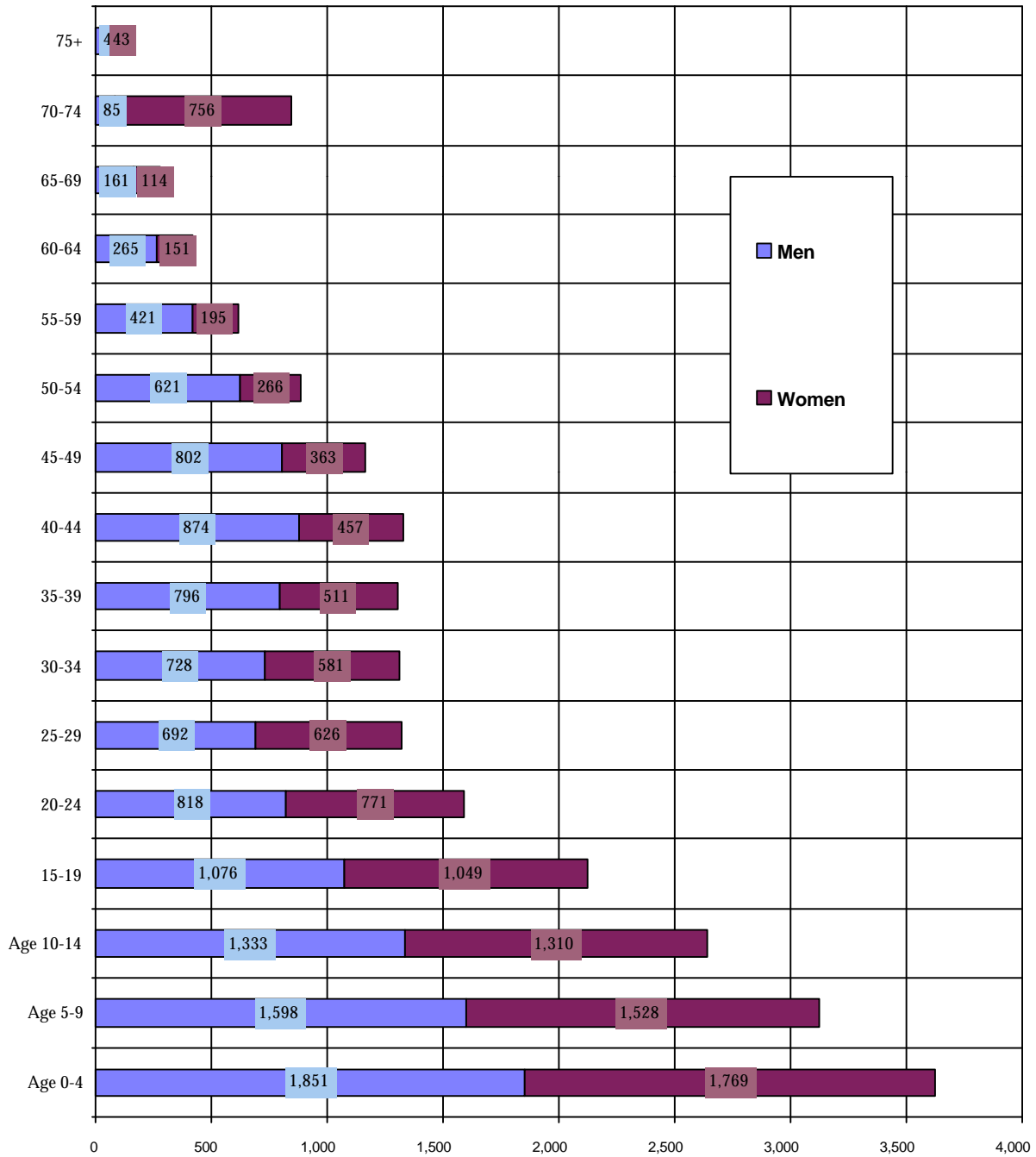
The Challenge of Saudisation is Greater than it Appears: Far Too Many Current Jobs are Now Held by Foreign Women, Many as Servants



Adapted by Anthony H. Cordesman from data in Saudi Arabian Monetary Agency, Thirty-Sixth Annual Report, 1421H (2000G), Riyadh, SAMA, 2000, Table 16.3.

Chart 4.15

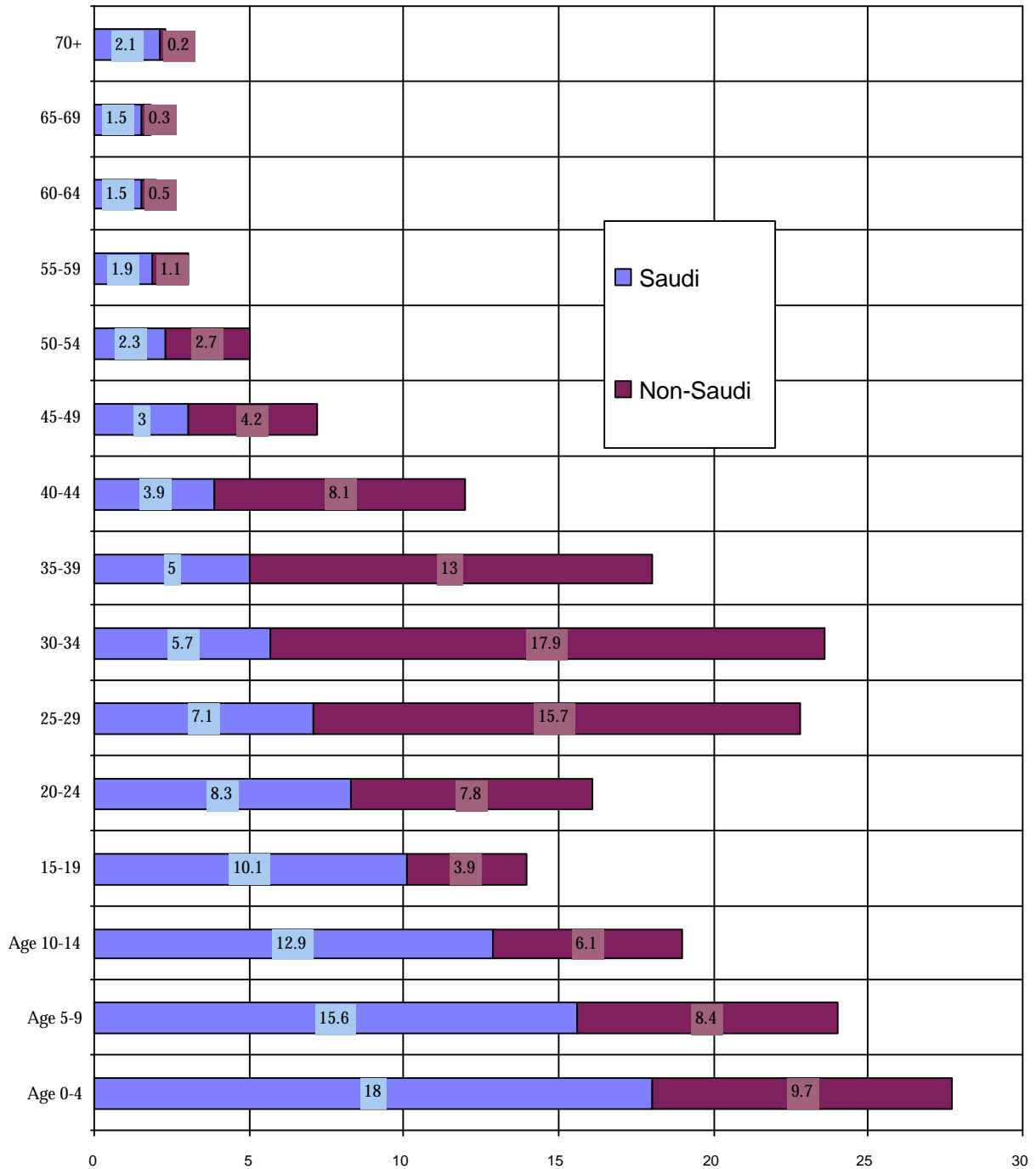
The “Youthening” of Saudi Arabia: US Census Bureau Estimate of the Distribution of the Total Native and Foreign Population by Age and Sex in 2000  
(In Thousands)



U.S. Census Bureau, IDB Summary Demographic Data for Saudi Arabia, May, 2001, [www.census.gov/cgi-bin/ipc/idbsum?cty=SA](http://www.census.gov/cgi-bin/ipc/idbsum?cty=SA).

Chart 4.16

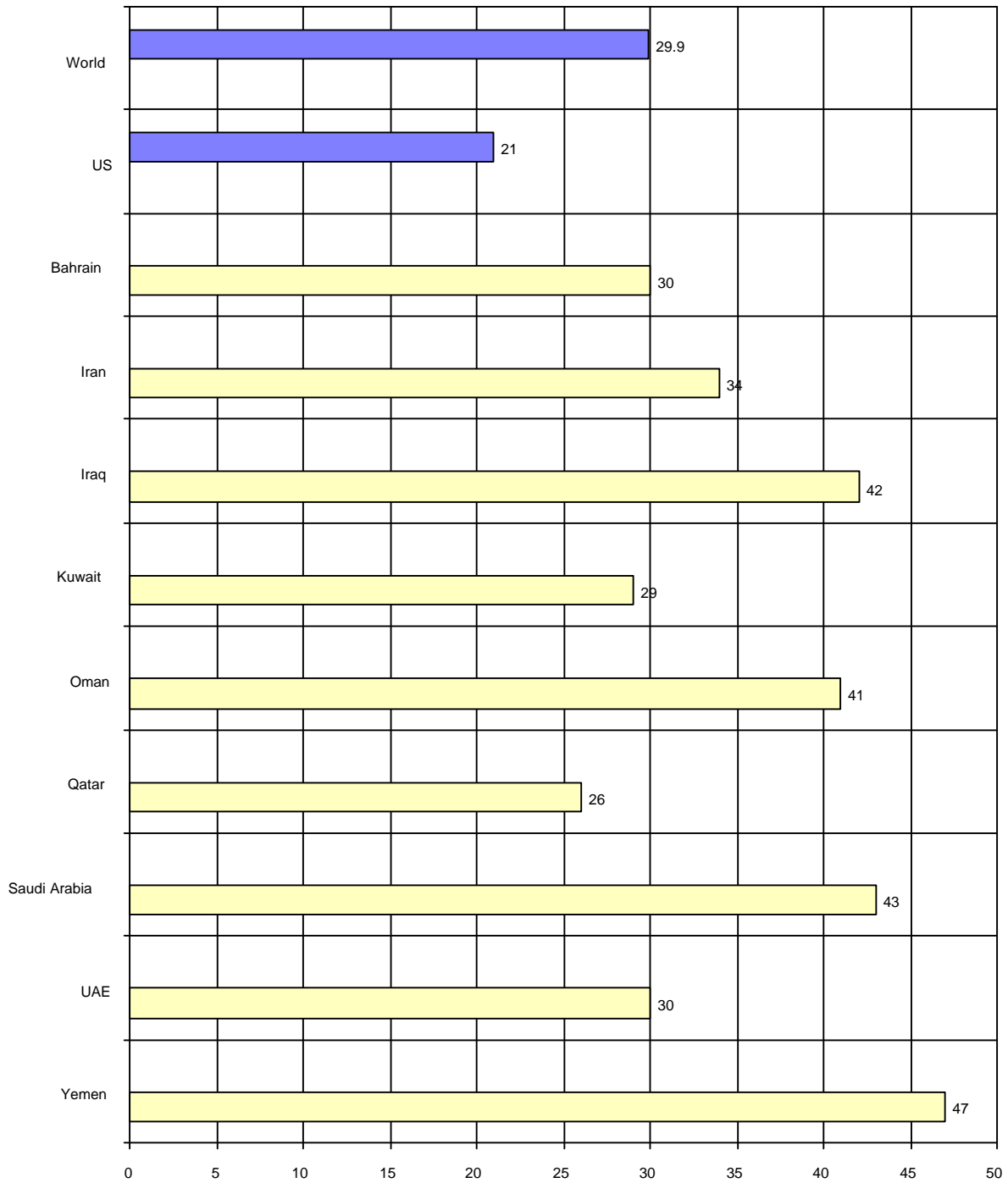
The “Youthening” of Saudi Arabia: Saudi Estimate of the Distribution of the Native and Foreign Population by Age and Sex in 1999  
(In millions)



Adapted by Anthony H. Cordesman Saudi Arabian Monetary Agency, *Thirty-Sixth Annual Report, 1421H (2000G)*, Riyadh, SAMA, 2000, pp. 250-257. Figures do not total 100% because they had to be extrapolated by the author from graphic data.

Chart 4.17

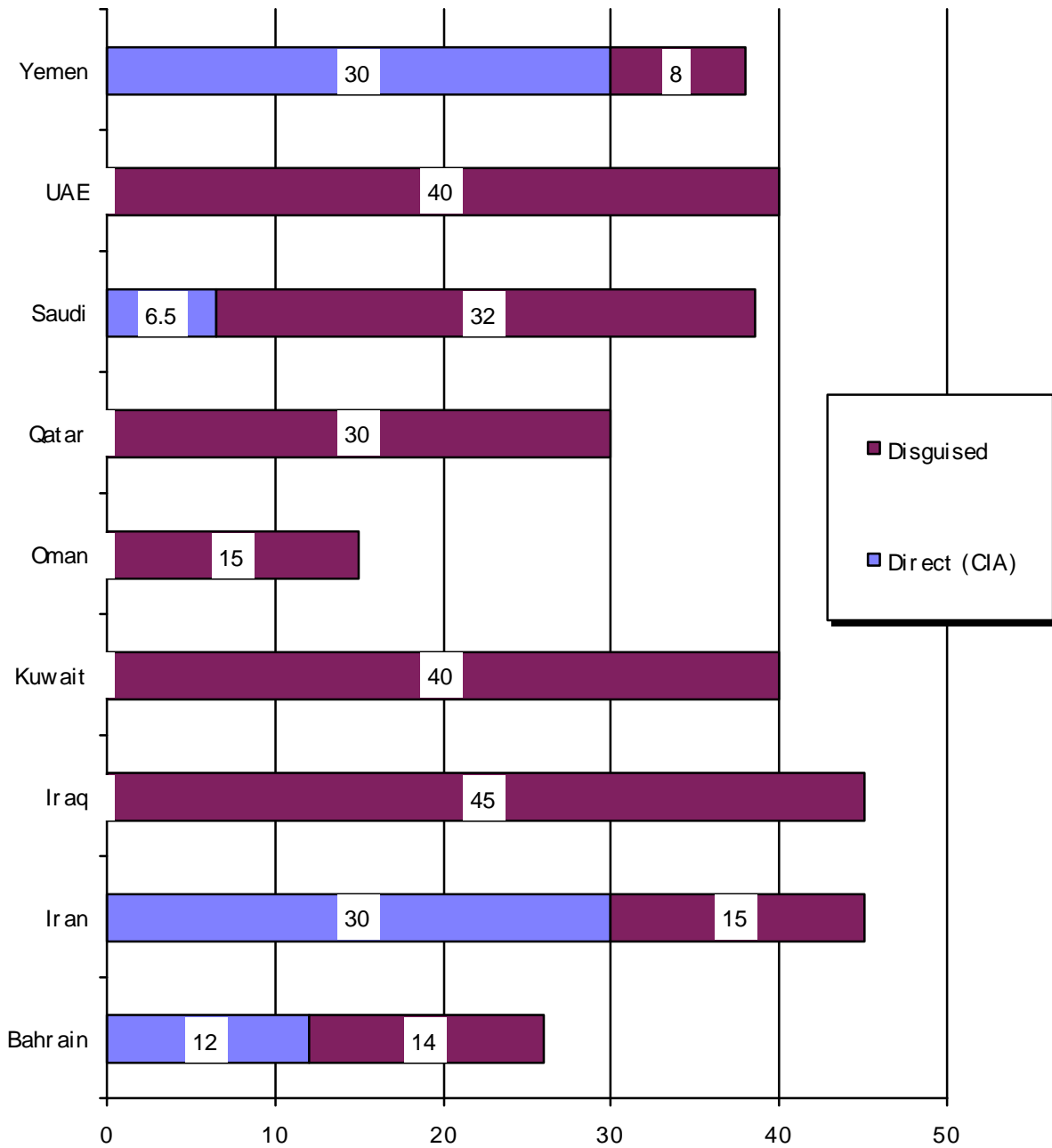
Population Momentum and Pressure on the Job Market: CIA Comparative Estimate of the “Youth Rate”  
 (Percentage of the Population Aged 14 Years or Less in 2000)



Adapted by Anthony H. Cordesman from CIA, World Factbook, 2000

Chart 4.18

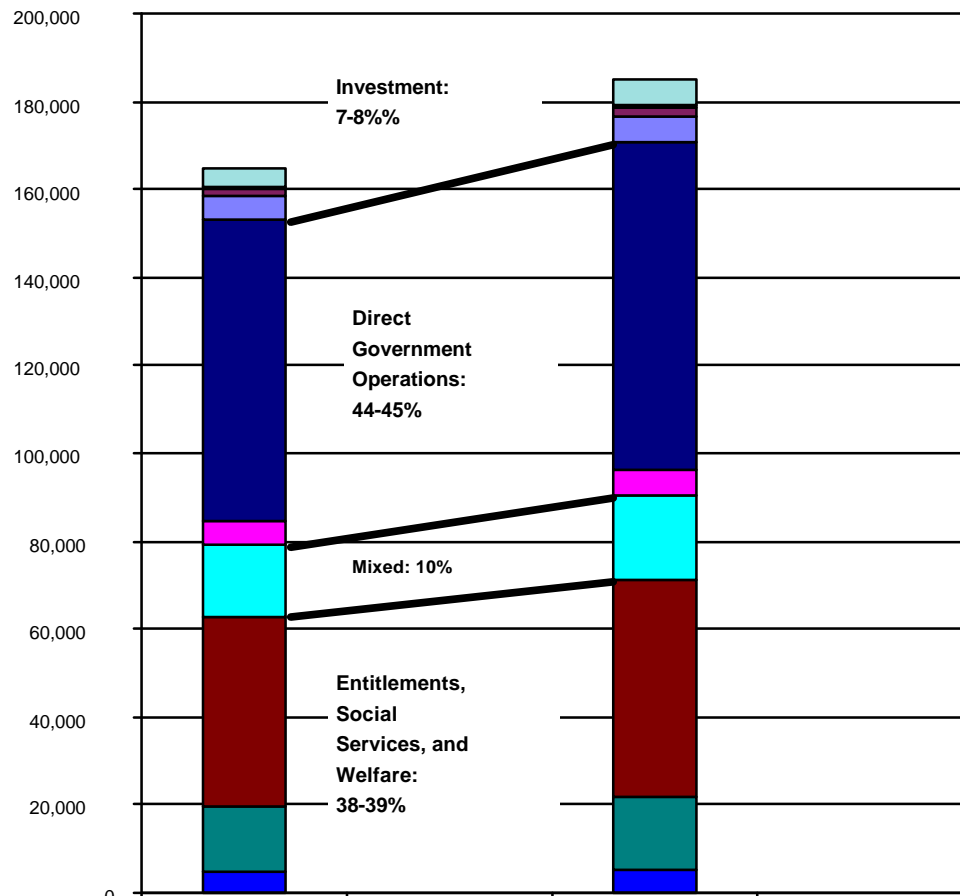
Estimated Comparative Direct and Disguised Unemployment Rate in the Middle East; A Rough Estimate  
(Rate measured in Percent)



Rough estimate by Anthony H. Cordesman based on CIA and World Bank estimates for 1996. Disguised includes public sector, civil service, and private sector jobs with no use economic output.

Chart 4.19

Pressures on the Saudi Budget: How the Budget is Spent  
(In billions of Saudi Riyals)



	1999 Total	1999 % Share	2000 Budget	2000 % Share
■ Investment and Development				
■ Economic Resource Development	4,418	*2.68	5,955	*3.22
■ Specialized Development Funds	420	*0.26	436	*0.23
■ Infrastructure Development	1,707	*1.03	2,067	*1.12
■ Transport and Communications	5,197	*3.15	5,534	*2.99
■ Direct Government Operations				
■ Defense and National Security	68,700	*41.64	74,866	*40.47
■ Minicipal Services	5,400	*3.27	5,710	*3.09
■ Government Operations, Investment and Entitlements				
■ Public Administration, Utilities, and General Items	16,458	*9.98	19,277	*10.42
■ Entitlements, Social Services, and Welfare				
■ Human Resources Development	42,792	*25.93	49,284	*26.64
■ Health Services and Social Development	15,152	*9.18	16,381	*8.85
■ Domestic Subsidies	4,756	*2.88	5,490	*2.97

Source: Adapted by Anthony H. Cordesman from US-Saudi Business Brief, winter, 1998, p. 1, and Reuters, December 28, 1998, 1728.

Chart 4.20

Pressures on the Saudi Budget: The Downtrend Following the Crash in Oil Prices in Late 1997  
(In billions of Saudi Riyals)

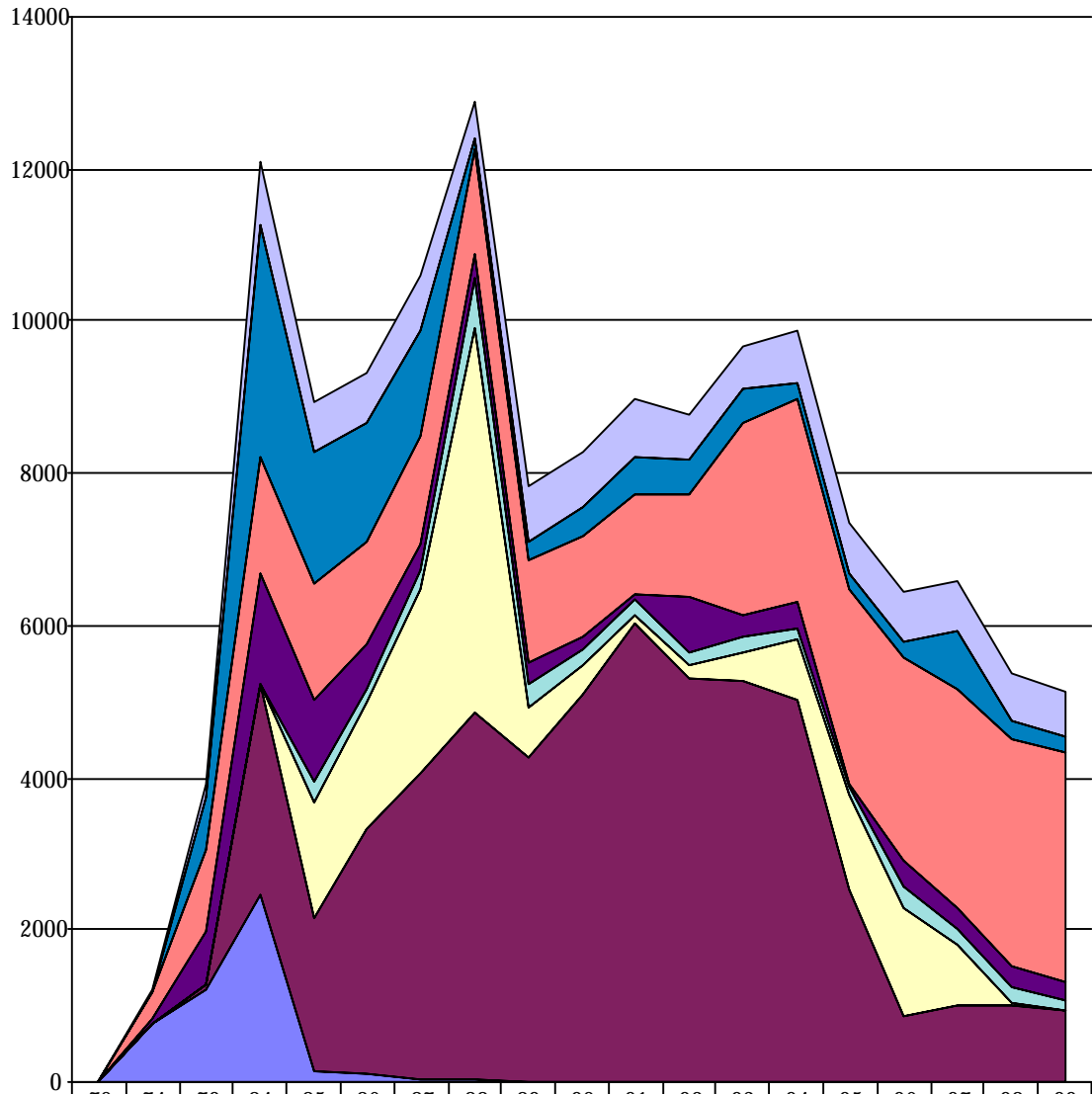


	1998	1999	% Change
Spec. Deve Funds	6.4	5	-22%
Indust., Elec. & Infra	10.7	8.5	-20%
Trans & Commo	11.8	5.2	-55.90%
Munin Services & Water	7.6	6.6	-12.70%
Health & Community Dev.	19.7	18.7	-5%
Education	45.6	42.9	-6%
Aid to Social Activities	5	4.8	-4.90%

Source: Adapted by Anthony H. Cordesman from US-Saudi Business Brief, winter, 1998, p. 1, and Reuters, December 28, 1998, 1728.

Chart 4.21

Pressures on the Saudi Budget: The Subsidy Problem Does Not Increase with Population but is Still Significant  
(Million Riyals)

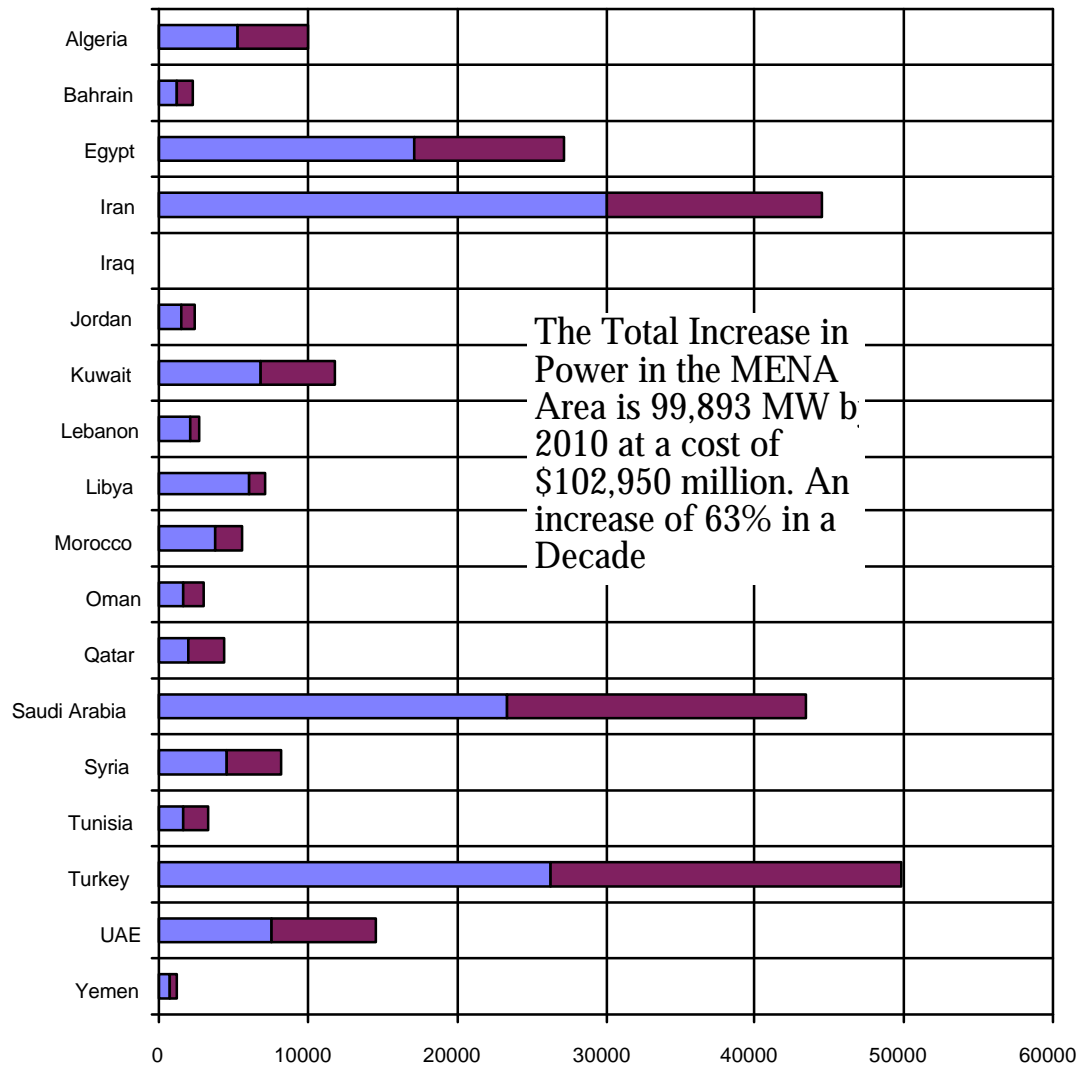


	70	74	79	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Others	-	20	163	816	658	666	712	460	741	736	780	589	571	707	656	642	661	632	587
Electric Companies	-	2	695	3051	1750	1536	1400	157	210	374	451	451	451	210	210	210	746	210	210
Social Security	17	358	1083	1540	1511	1352	1427	1396	1380	1315	1323	1333	2514	2654	2573	2693	2891	2998	2990
Agricultural	-	69	704	1449	1081	594	334	304	282	199	82	723	283	368	23	336	267	276	247
Poultry Feed	-	-	-	-	267	173	238	666	283	212	210	190	212	139	115	272	211	194	142
Imported Barley	-	-	-	-	1525	1672	2420	5041	660	362	115	181	369	802	1241	1425	795	41	0
Local Wheat & Barley	-	-	45.1	2775	2004	3239	4037	4829	4256	5087	6005	5280	5269	5001	2536	853	1005	1006	931
Food	-	750	1226	2457	148	89	28	27	17	11	10	11	12	12	5	8	9	6	8

Source: Adapted by Anthony H. Cordesman from Ministry of Planning, Achievements and Development Plans, 1390-1420 (1970-2000), Riyadh, Ministry of Planning, 2001, Table Twenty-Six.

Chart 4.17

The Infrastructure Challenge will Be Acute During the Coming Decades: Electric Power as a Case Example

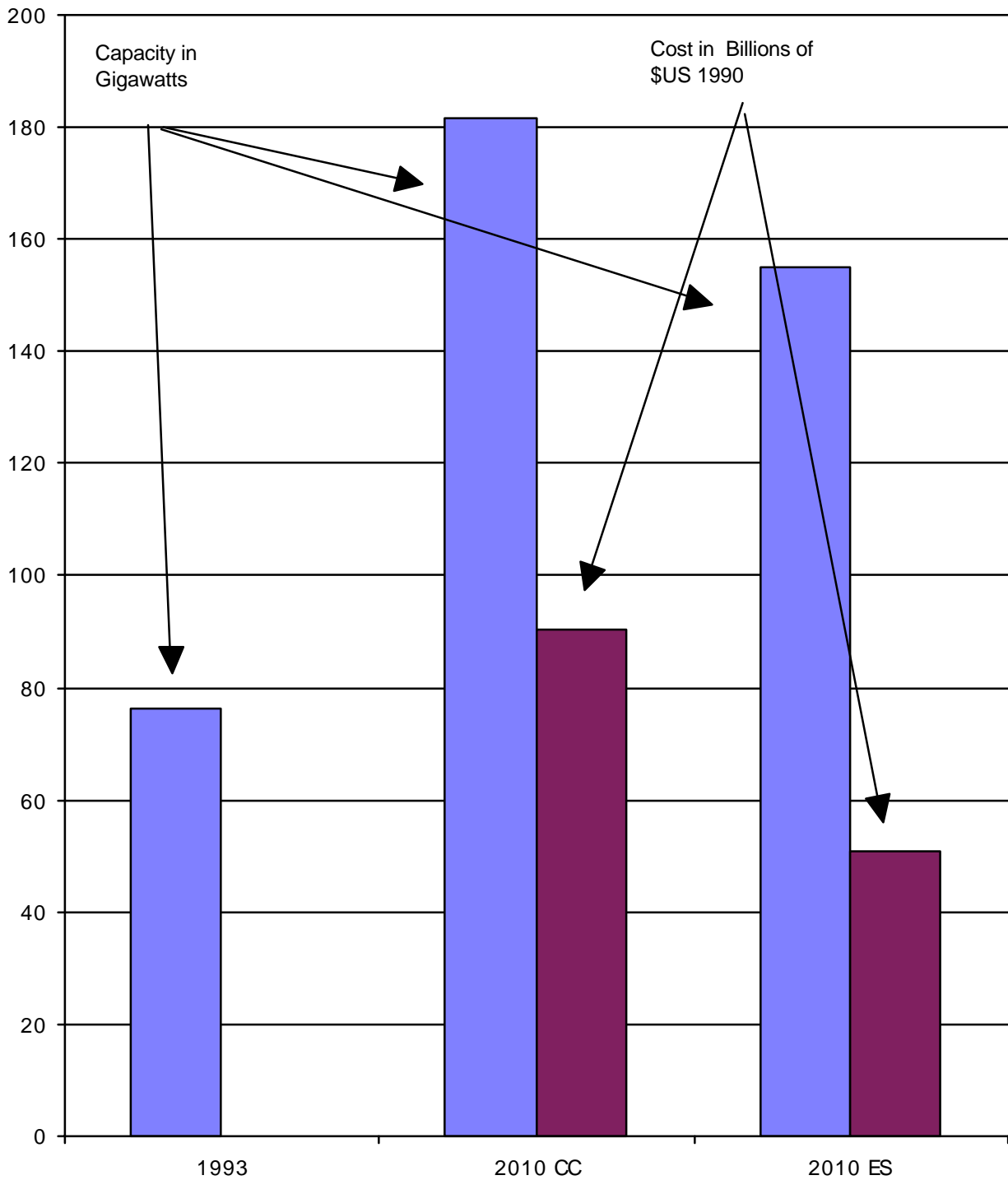


	Yemen	UAE	Turkey	Tunisia	Syria	Saudi Arabia	Qatar	Oman	Morocco	Libya	Lebanon	Kuwait	Jordan	Iraq	Iran	Egypt	Bahrain	Algeria
■ Demand Growth Rate in %	-	7.1	8.1	7	7	5.5	10	4.5	6	6	7	7	6.4	-	7	7	5	5
□ Projected Cost in \$Billions	*0.6	*8.0	*27.	*1.0	*2.5	*30.	*3.0	*0.8	*2.9	*1.8	*0.2	*3.6	*1.0	-	*7.5	*7.5	*1.0	*4.0
■ Additional MW Needed by 2010	500	7000	2360	1700	3600	2000	2500	1250	1900	1200	500	5000	900	-	1450	1000	1000	4740
■ Installed Capacity in MW	700	7600	2622	1600	4600	2343	1933	1735	3750	6000	2200	6900	1500	-	3000	1715	1260	5300

Adapted by Anthony H. Cordesman from Middle East Economic Digest, January 26, 2001, p. 24.

Chart 4.18

Saudi Arabia's Massive Needs for Infrastructure Investment:  
Electric Power as a Test Case



CC = Capacity Constrained or maximum production ES = Energy Savings, or reduced energy use.  
Source: Adapted by Anthony H. Cordesman from IEA, World Energy Outlook, 1996, pp. 189-191.

Table 5.1

**Recent Trends in the Saudi Economy**  
(Costs in Billions of Current Saudi Riyals Unless Otherwise Stated)

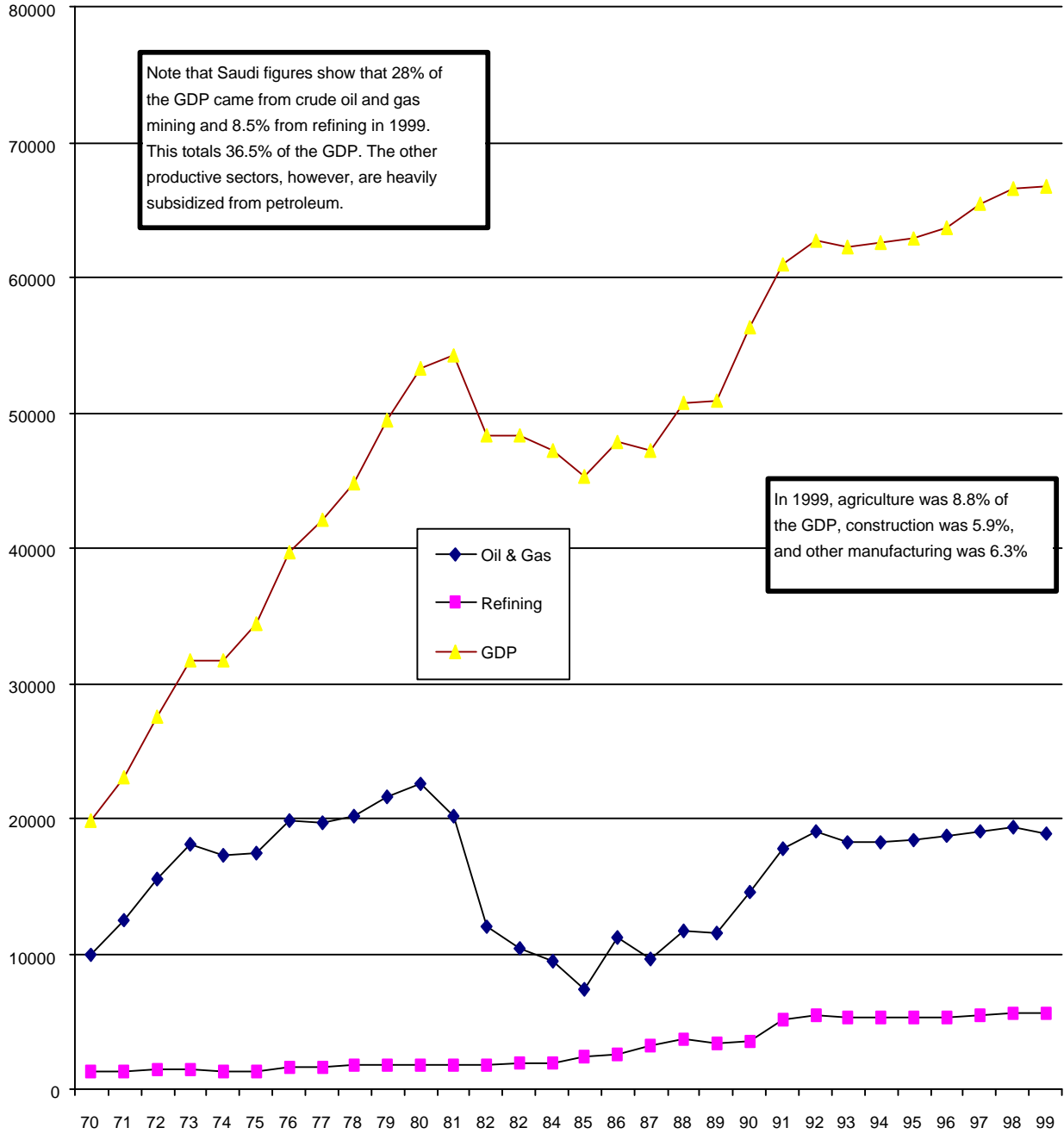
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
GDP	392.0	442.0	461.4	443.8	450.0	478.7	529.3	548.6	480.8	522.0	(601.9)
Real GDP (% Change)	9/9	10.9	2.0	-0.6	0.5	0.3	1.4	2.6	1.5	0.2	(4.1)
Oil	25.2	20.4	6.3	-3.8	0.2	0.3	2.0	1.4	2.1	-2.6	(7.04)
Non-oil Private	4.2	1.5	1.1	-1.0	0.9	0.5	0.9	3.6	1.3	0.2	(2.5))
Government	2.0	13.2	-2.8	5.1	0.2	-0.2	1.2	3.0	0.9	4.1	(1.0)
Total Budget											
Revenues	154.7	161.9	165.4	141.4	129	146.5	179.1	205.5	141.6	147.5	248.0
Petroleum Revenues	118.1	*118.1	127.1	106.0	95.5	105.7	136.0	160.0	80.0	104.5	-
Other Revenues	36.6	*36.6	38.3	35.5	33.5	40.8	43.1	45.5	61.6	43.0	-
Total Budget Expenditures	476.8	*476.8	232.5	205.5	163.8	173.9	198.1	221.3	190	183.8	203.0
Budget Deficit	-160.2	*-160.2	-67.2	-64.1	-34.8	-27.4	-19.0	-15.8	-48.5	-36.3	+45
Budget Deficit as % of GDP	19.2%	19.2%	14.6%	14.4%	7.7%	5.7%	3.6%	2.9%	10.1%	7.0%	-
Exports	166.3	178.6	188.3	158.8	159.6	187.4	227.4	227.4	145.4	181.1	-
Oil Exports	149.6	162.8	173.7	144.2	142.4	162.6	202.6	199.2	121.6	159.2	-
Imports	90.3	108.9	124.6	105.7	87.4	105.2	104.0	107.7	112.4	105.0	-
Unemployment	-	-	-	-	-	-	-	-	-	-	14%
Current Account											
Receipts	212.1	222.1	228.9	194.3	187.2	219.1	257.0	265.0	184.9	222.9	-
Disbursements	227.7	325.6	295.4	259.0	226.5	239.1	254.5	263.8	234.1	229.3	-
Balance	-15.5	-103.5	-66.4	-64.7	-39.3	-19.9	2.5	1.1	-49.2	-6.4	-
As % of GDP	-	-	-	-	-8.83	-4.29	0.45	0.21	-10.18	-2.81	9.22
Government Domestic Debt	-	-	-	-	336	384	422	468	566	612	610
As % of GDP	-	-	-	-	76	83	84	87	116	115	101

\* Saudi Arabia changed its annual budget cycle in 1991, and reports 1990 and 1991 as one year.

Adapted by Anthony H. Cordesman from material provided by SAMA, and Ministry of Planning, Kingdom of Saudi Arabia: Achievements of the Development Plans 1390-1418 (1970-1998), Facts and Figures, 16<sup>th</sup> Issue, Riyadh, 1999, and Kingdom of Saudi Arabia, Ministry of Planning, Achievements of the Development Plans 1970-2000, Facts and Figures, Riyadh, Ministry of Planning, 2000, Part One (F). p. 20; and Brad Bourland, The Saudi Economy: 2000 Performance:2001 Forecast, Riyadh, Saudi American Bank, February 2001.

Chart 5.1

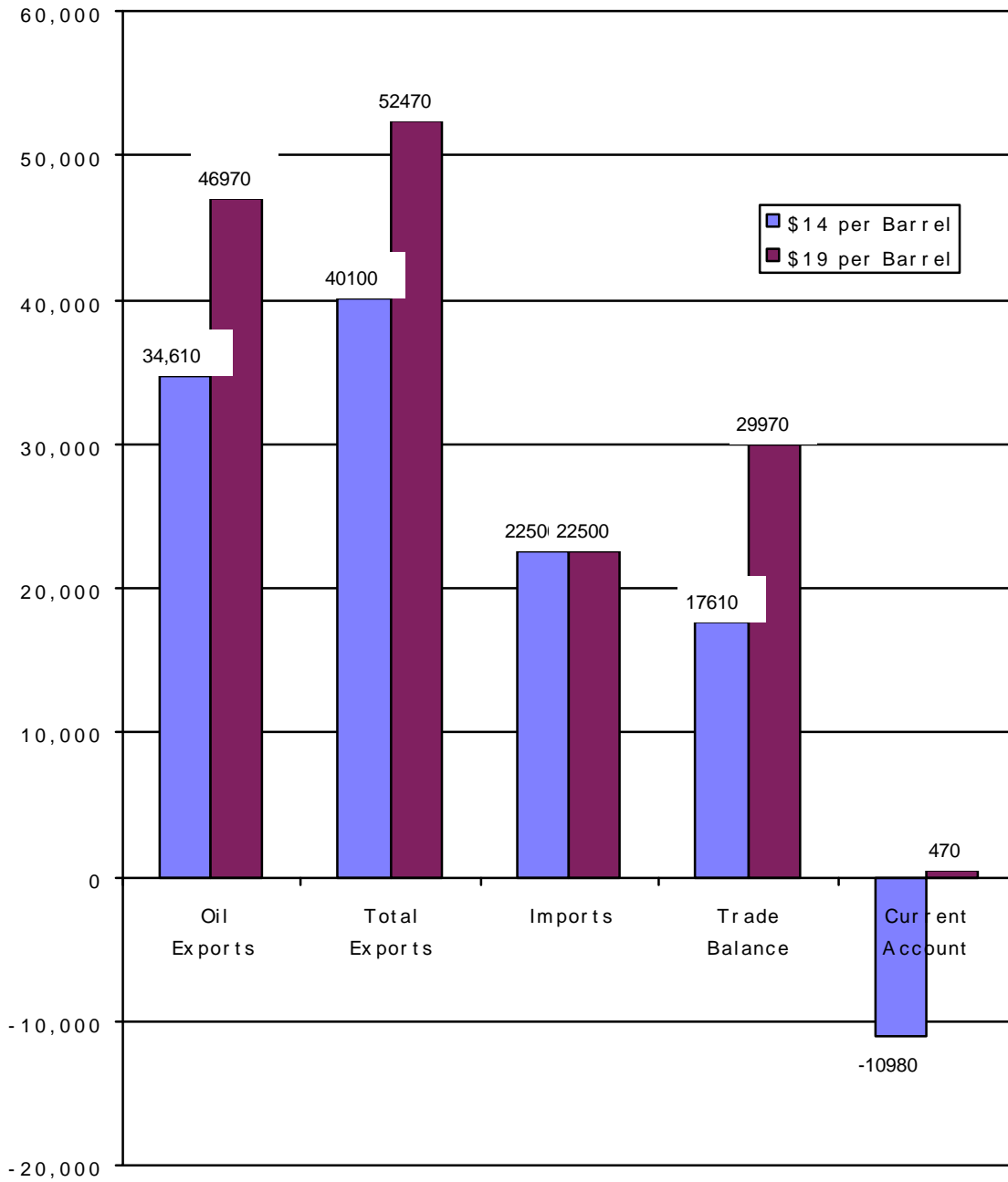
Oil and Petroleum as a Share of the Saudi GDP: 1970-1999  
 (Million Riyals at producers' values at constant prices: 1970=100)



Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, Thirty-Sixth Annual Report (2000), SAMA, Research and Statistics Department, 2000, pp. 346-348.

Chart 5.2

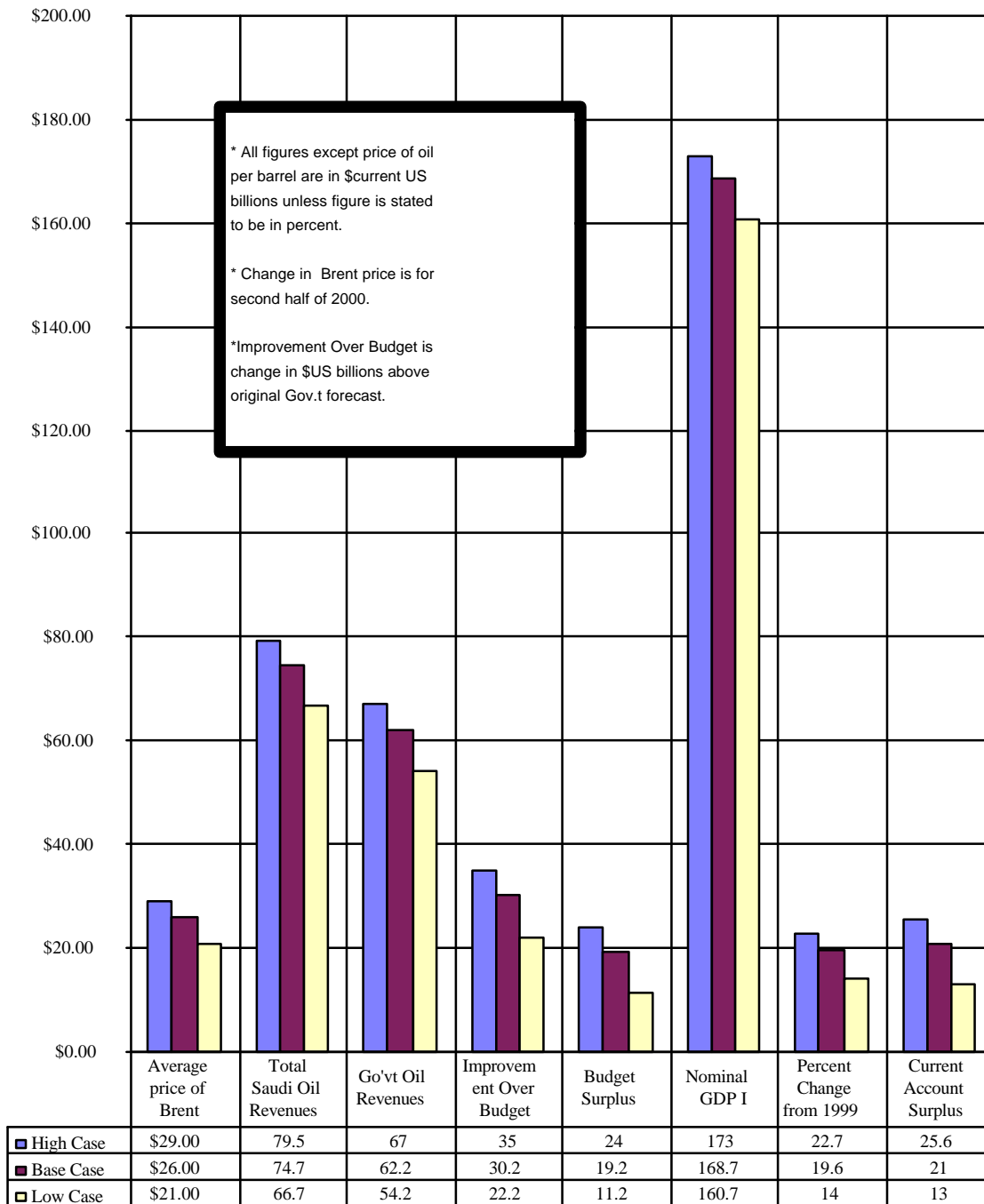
The Impact of Oil Prices on the Saudi Economy – Part One  
(In Current \$US in Thousands)



Source: Adapted from Middle East Economic Digest, September 27, 1996, p. 5

Chart 5.2

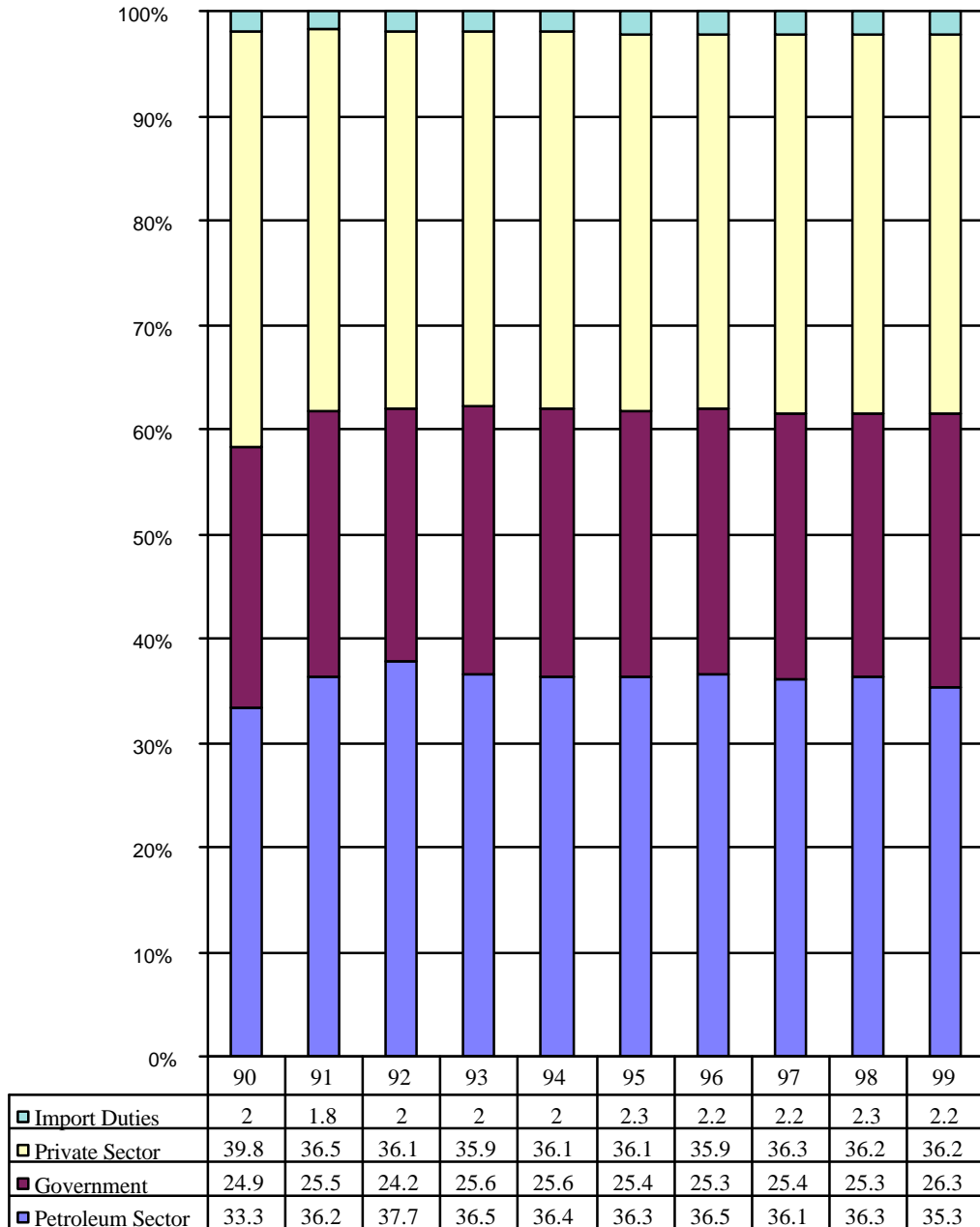
The Impact of Oil Prices on the Saudi Economy – Part Two  
(In Current \$US in Thousands)



Source: Adapted from Brad C. Bourland, The Saudi Economy: Mid-2000 Update, Riyadh, Saudi American Bank, August, 2000. Pp. 4-8.

**Chart 5.3**

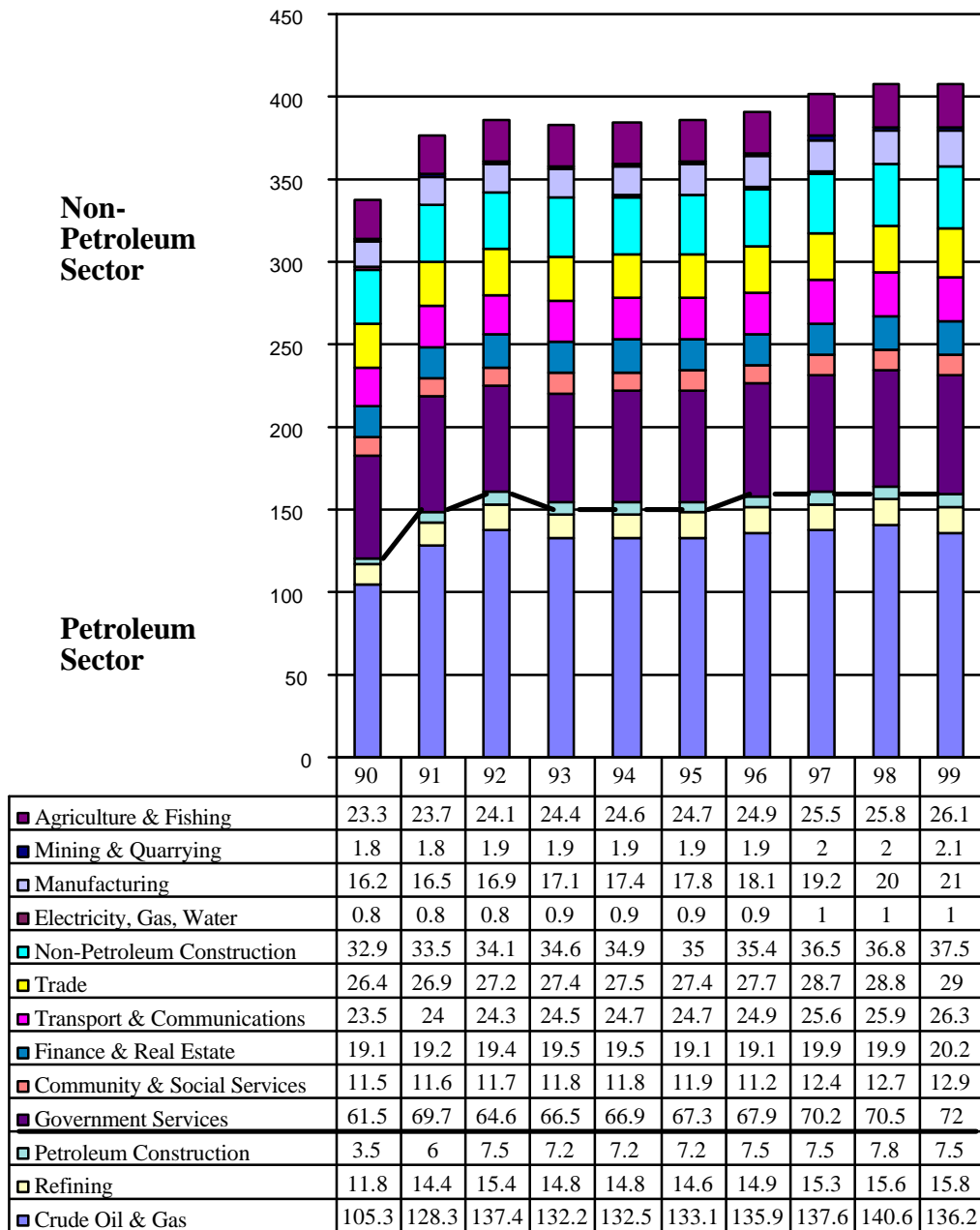
**Saudi Oil Production, Government Expenditures, and Other Economic Activity as a Percent of GDP at Constant 1989 Prices**



Source: Adapted by Anthony H. Cordesman from Ministry of Planning, *Achievements of the Development Plans, 1390-1420 (1970-2000), Facts and Figures*, Ministry of Planning, 18<sup>th</sup> Edition, 2001, Tables 9 and 10.

Chart 5.4

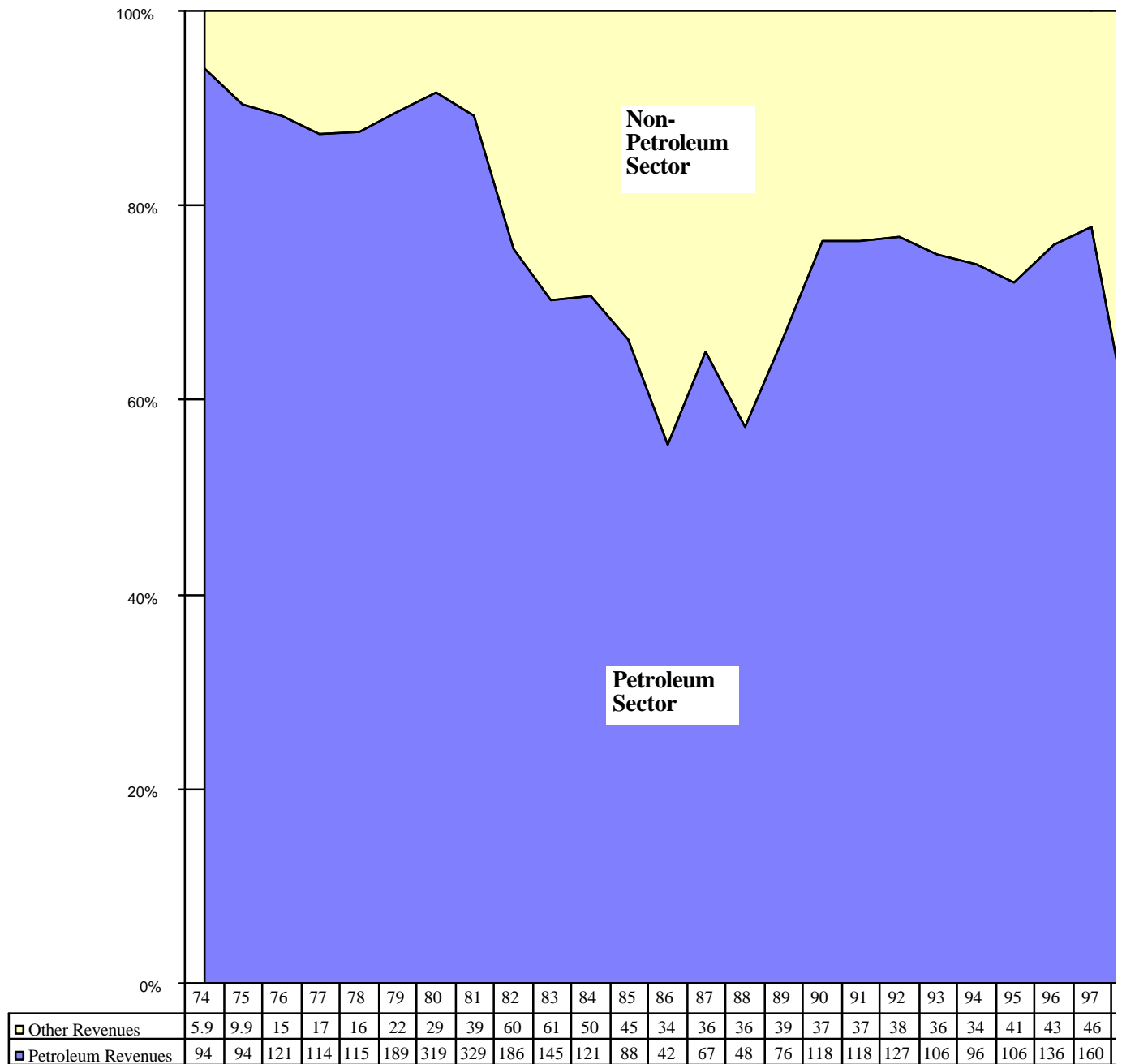
The Composition of the Saudi Economy by Sector  
(In Billions of Constant \$1989 Riyals)



Source: Adapted by Anthony H. Cordesman from Ministry of Planning, Achievements of the Development Plans, 1390-1420 (1970-2000), Facts and Figures, Ministry of Planning, 18<sup>th</sup> Edition, 2001, Tables 11 and 12.

Chart 5.5

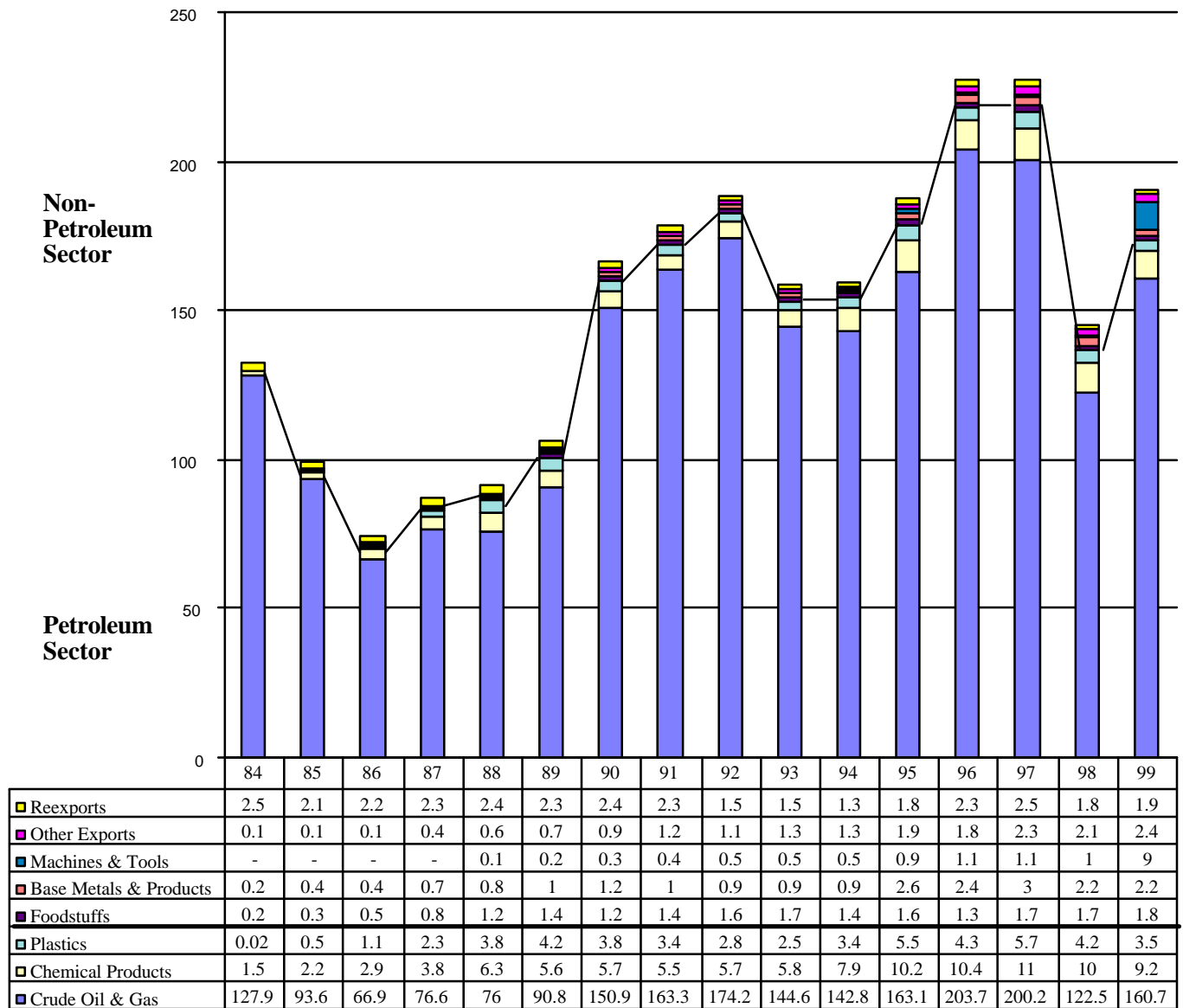
Saudi Oil Exports as a Percent of Total Government Revenues: 1974-1999  
(In Current Billions of Riyals)



Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, 36<sup>th</sup> Annual Report- 1421H (2000G), Riyadh, SAMA, 2001, pp. 360-361.

Chart 5.6

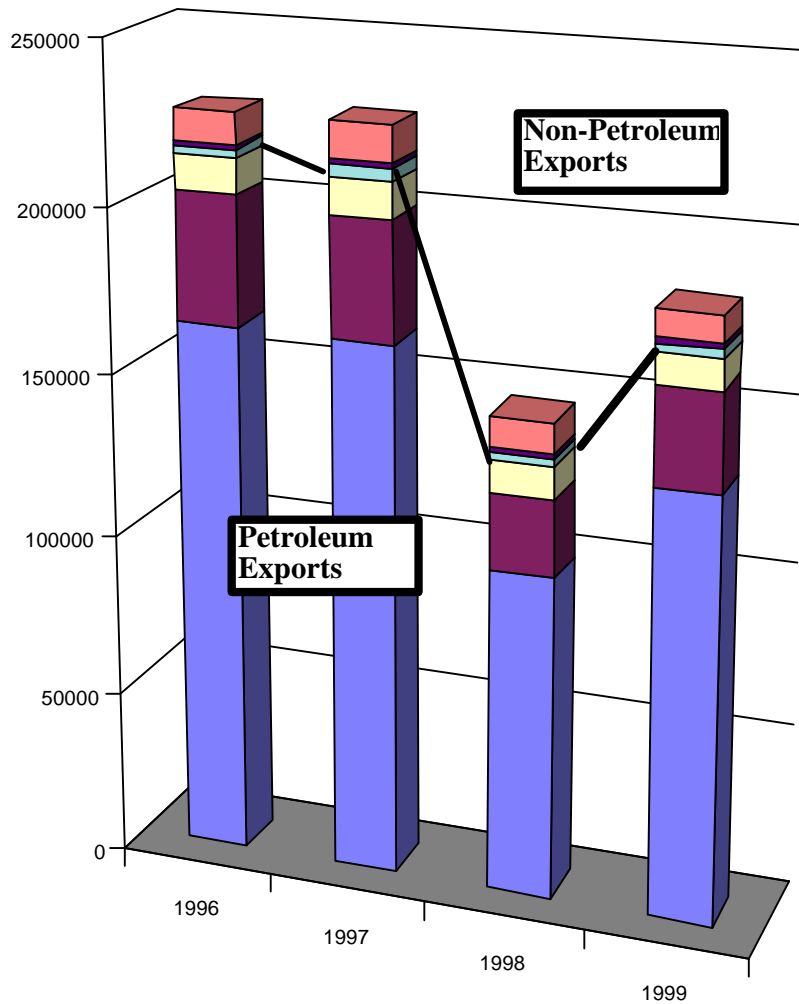
**Saudi Petroleum Exports Relative to Total Exports**  
(In Current Billions of Riyals)



Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, 36<sup>th</sup> Annual Report- 1421H (2000G), Riyadh, SAMA, 2001, pp. 360-361.

Chart 5.7

Saudi Non-Oil Exports Had Almost No “Smoothing” Impact During the “Oil Crash” in 1997-1999  
(Value in Millions of Riyals)



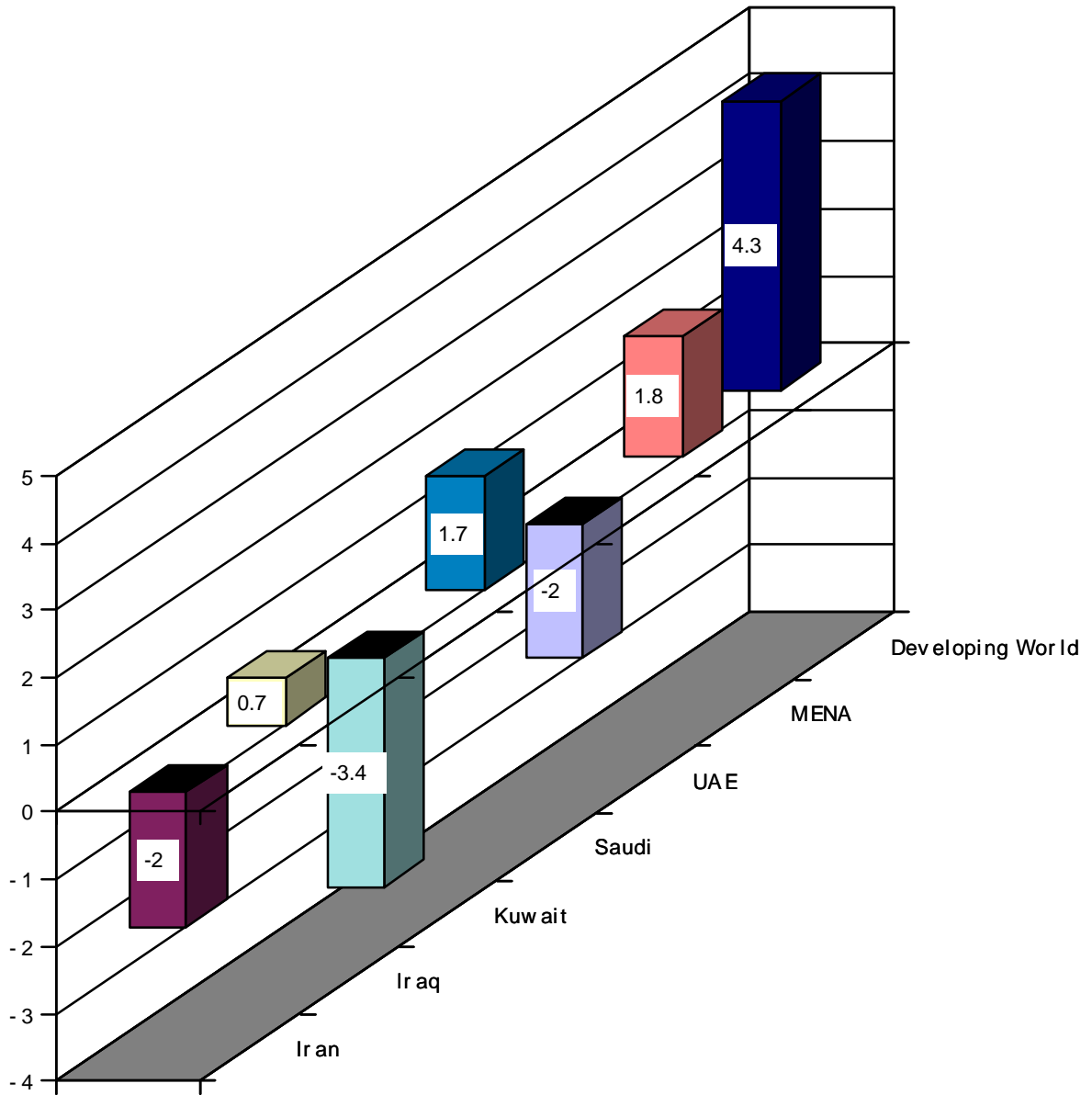
	1996	1997	1998	1999
Others	9443	11385	9055	8099
Agriculture/Food	1339	1660	1663	1768
Construction Materials	2964	3593	2737	2808
Petrochemicals	10435	11036	9961	9189
Refined	39965	36755	23133	30289
Crude Oil	163282	163016	98740	129413

Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, 36<sup>th</sup> Annual Report- 1421H (2000G), Riyadh, SAMA, 2001, pp. 360-361.

Chart 5.8

GDP Growth of the Major Oil Exporting States Lagged Behind the Other MENA States During the 1980s

(Percent of Real Annual Change during 1979-1988)

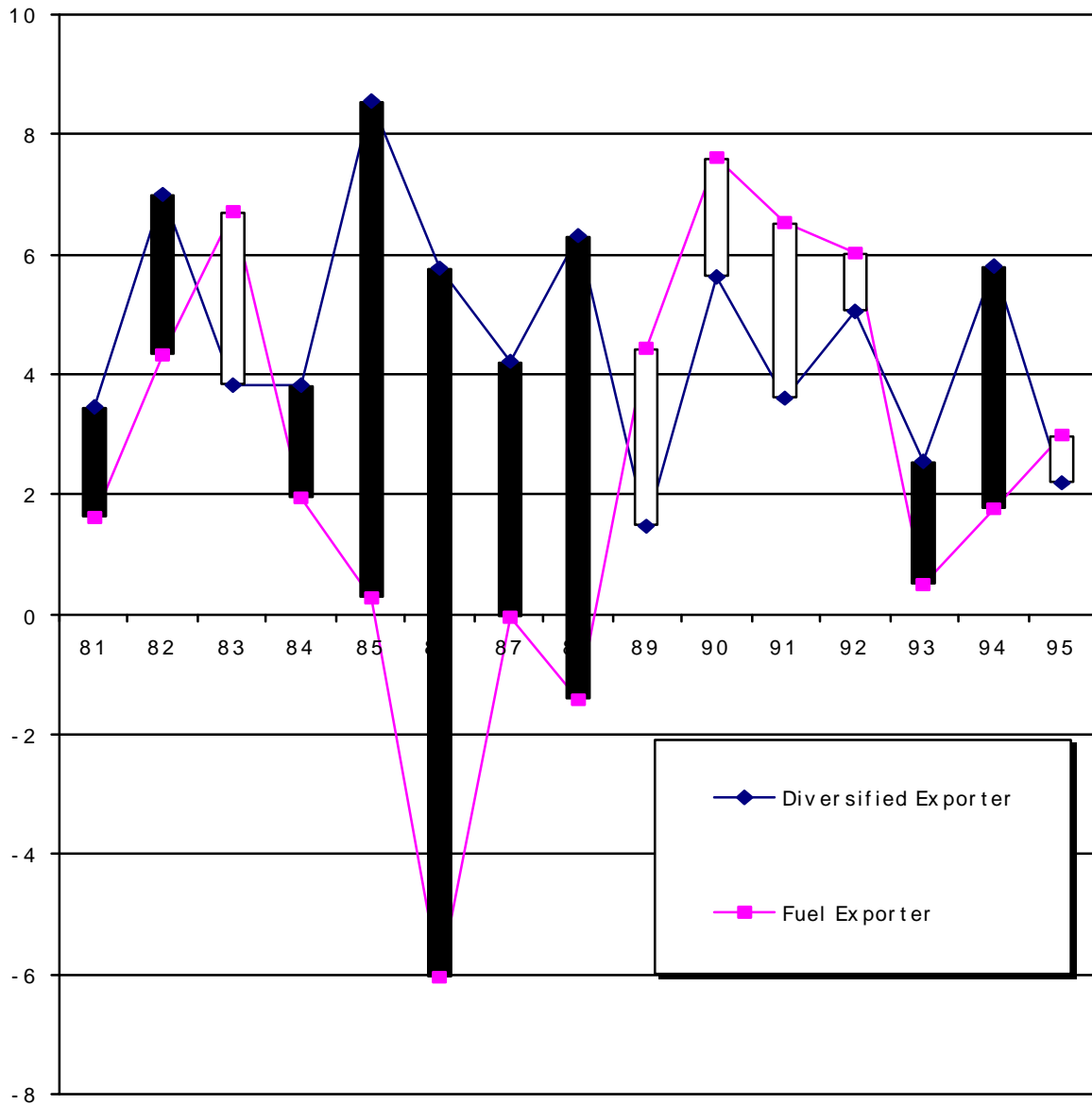


Adapted by Anthony H. Cordesman from IMF, World Economic Outlook, May, 1997, pp. 138-139.

Chart 5.9

GDP Growth of the MENA Oil Exporters Lagged Behind that of the Diversified Exporters and Was Far More Vulnerable to Oil Prices

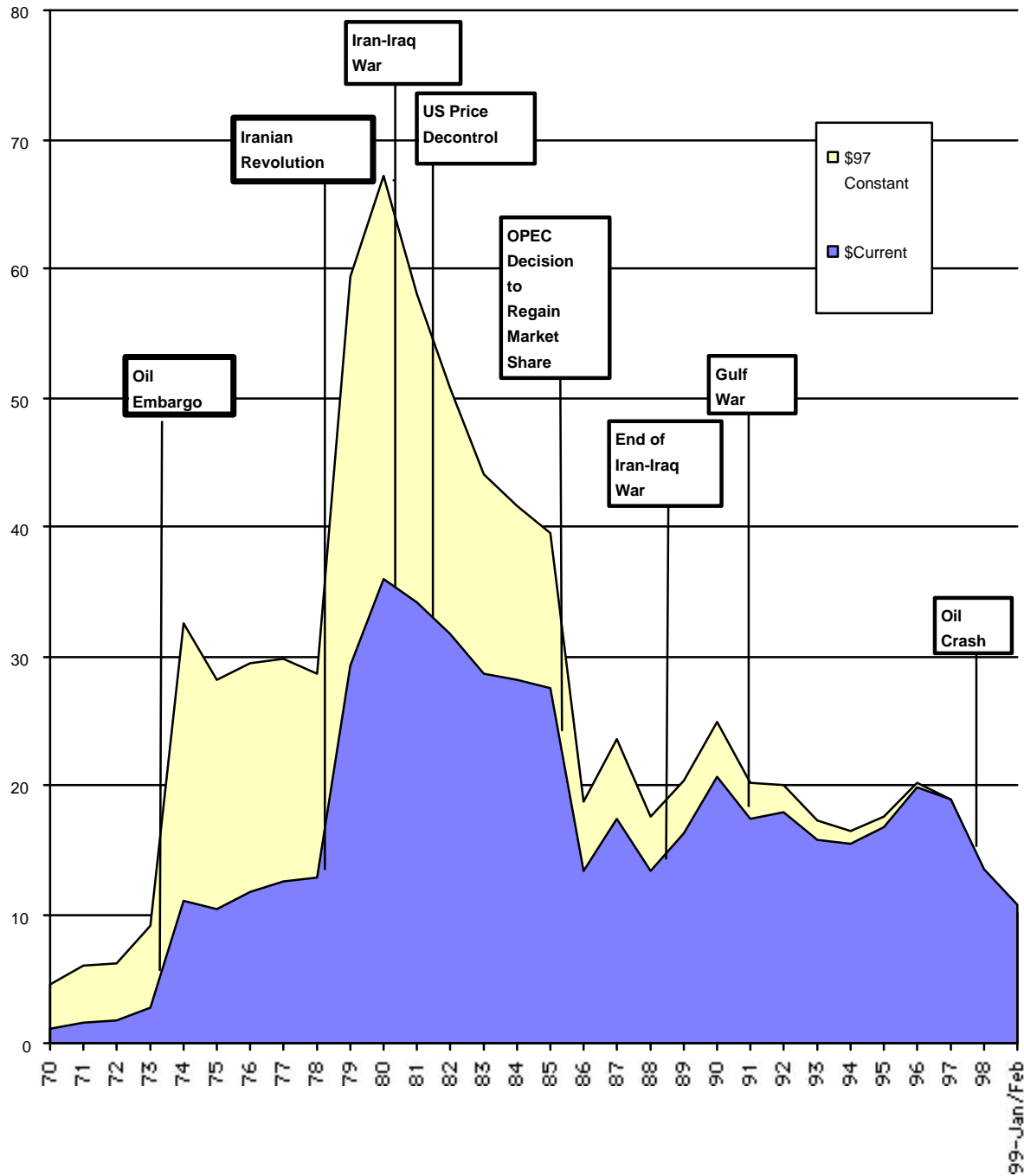
(Percent of GDP Growth)



Diversified exporter = Egypt, Israel, Jordan, Morocco, Syria, and Tunisia.  
 Fuel exporter = Algeria, Bahrain, Iran, Kuwait, Oman, Qatar, Saudi Arabia, and the UAE.  
 Adapted by Anthony H. Cordesman from IMF, World Economic Outlook, Washington, IMF, May, 1996, pp. 98-105.

Chart 5.10

**Politics, War, and the Trends in the Price of Saudi Arabia Light Crude: 1970-1999**  
 (\$US Current and \$US 1997 Constant)

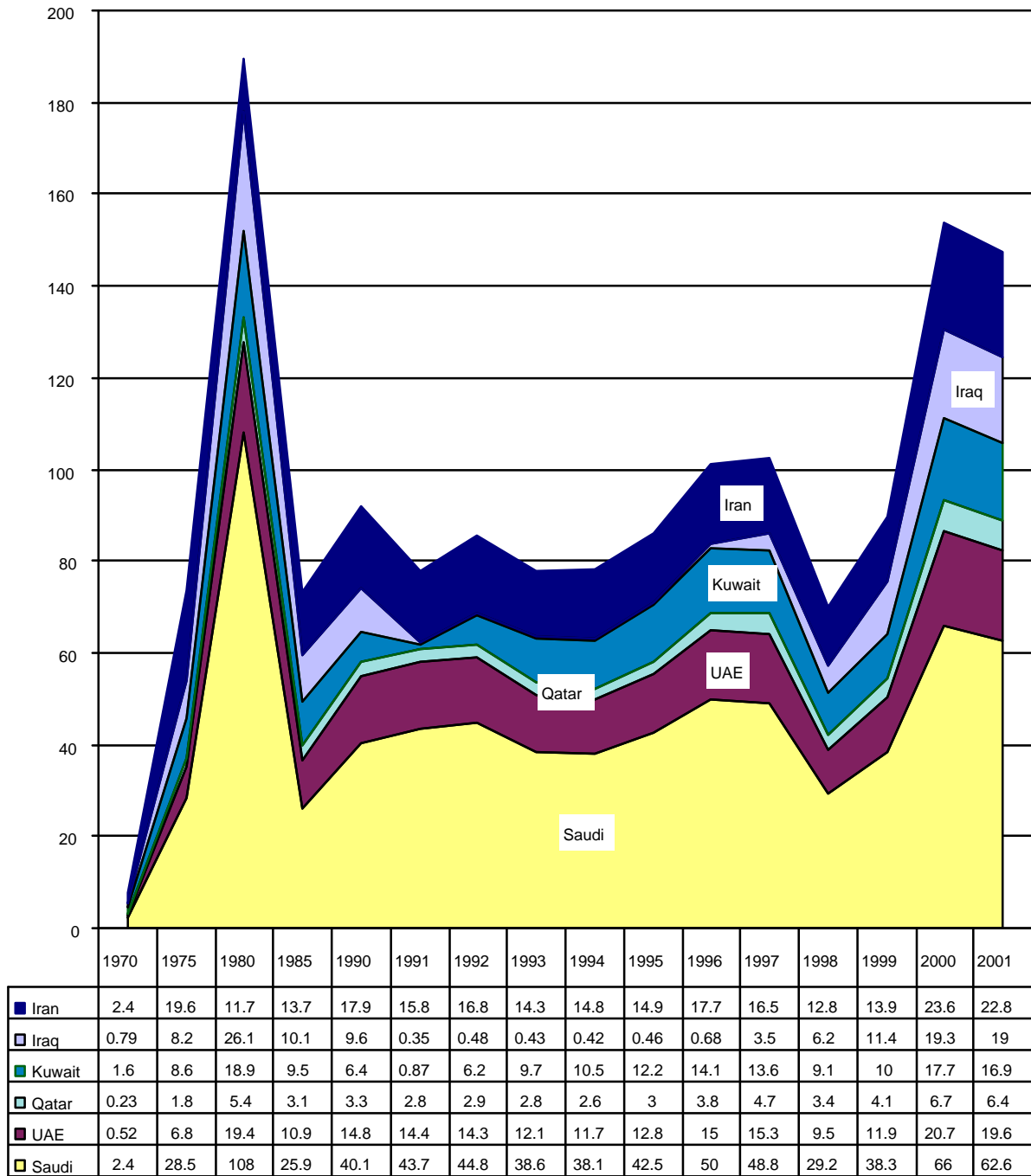


Total ME												
OPEC	13/31	18/87	17/91	9/53	15/19	14.77	15.99	16.75	16.84	16.99	17.18	18.30
Total ME	13.95	19.57	18.40	10.25	16.49	16.19	17.43	18.34	18.59	18.84	19.08	20.16

Adapted by Anthony H. Cordesman from Cambridge Energy Associates, *World Oil Trends, 1998*, Cambridge, Mass., 1998, pp. 26-27.

Chart 5.11

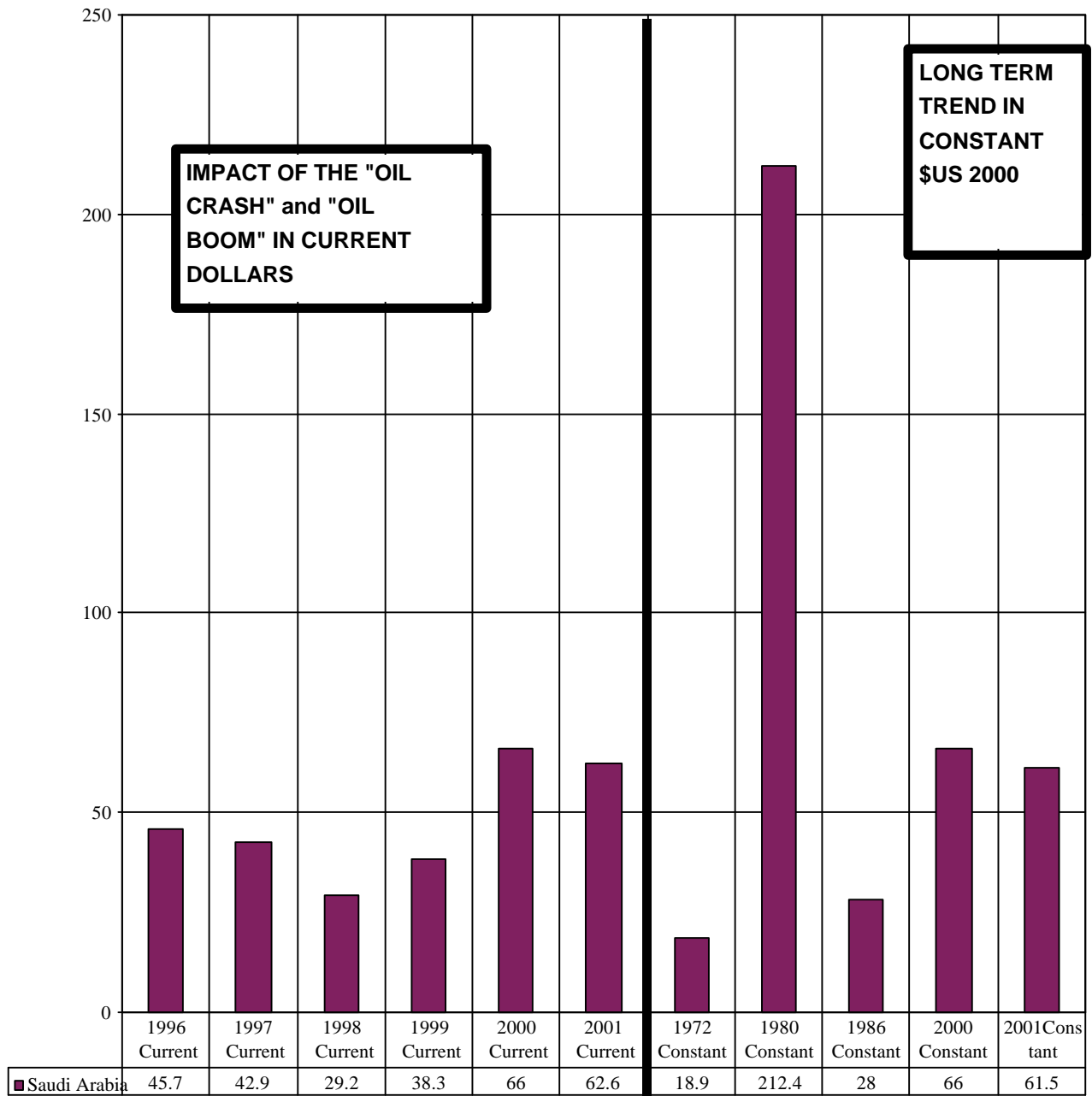
The Combined Impact of War, Politics, and Global Market Forces has been Massive Swings in Gulf Oil Revenues: 1970-2000  
 (\$Current Billions)



Adapted by Anthony H. Cordesman from Cambridge Energy Associates, World Oil Trends, 1998, Cambridge, Mass., 1998, pp. 26-27, and from projections by Energy Information Agency based on various editions of the "OPEC Revenues Fact Sheet," [www.eia.doe.gov/emeu/cabs/opecrev2.html](http://www.eia.doe.gov/emeu/cabs/opecrev2.html).

Chart 5.12

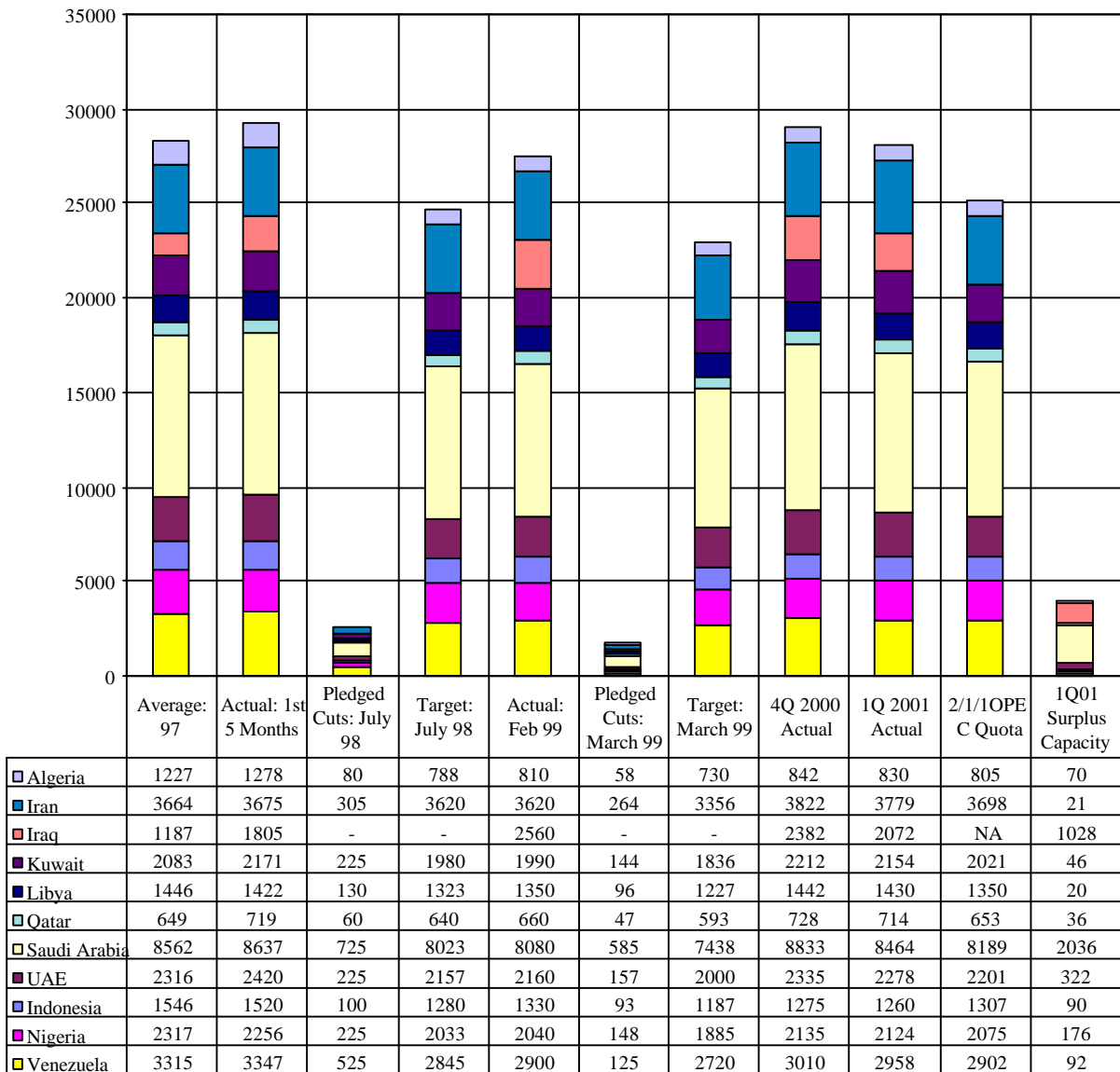
The Swings in Saudi Oil Export Revenues 1972-2001:  
Even the Current Boom is No Boom in Constant Dollars  
 (In \$US Current and 2000 Constant Billions)



Source: Adapted by Anthony H. Cordesman from data provided by the EIA as of March 2001 ([www.eia.gov/emeu/cabs/opecrev2.html](http://www.eia.gov/emeu/cabs/opecrev2.html).)

Chart 5.13

The OPEC Game Adds Another Uncertainty: Saudi Production Targets and Actual Output:  
1998-2001  
(In MMBBD)

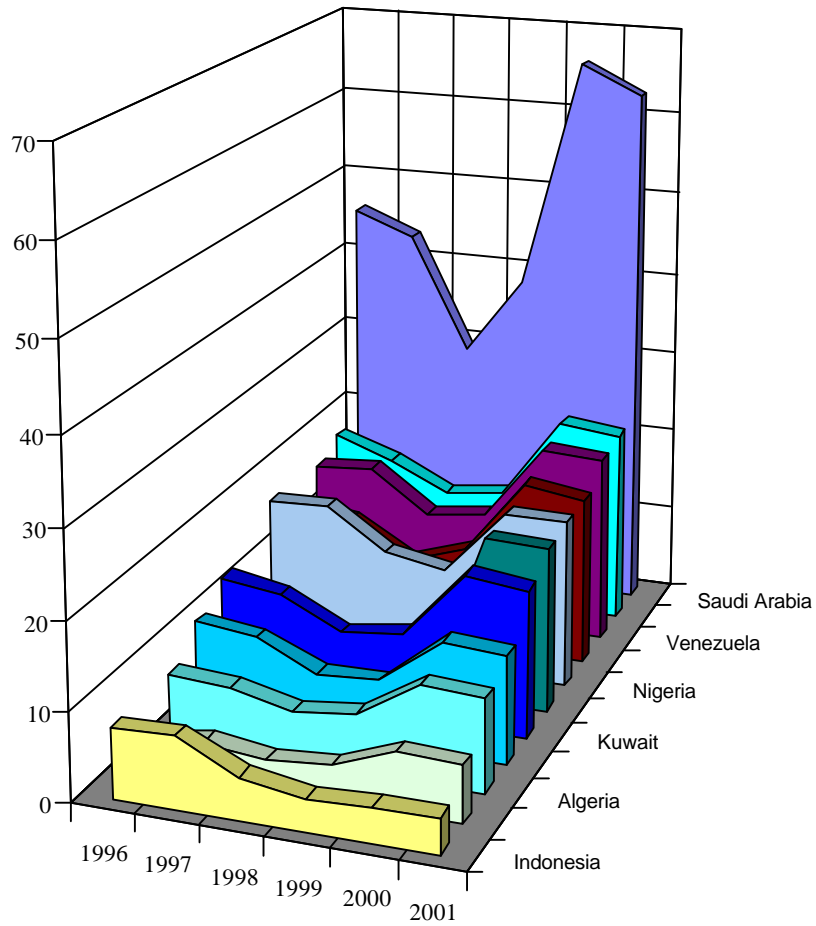


Total Gulf OPEC 18.7 20.9 21.6 24.4 28.6 38.4 49.8 - - -  
 Total MENA OPEC 21.5 23.8 24.7 27.9 32.5 42.1 53.3 31.7 30.8 - -

Source: Adapted from Middle East Economic Digest, March 26, 1999, p. 5; EIA, Monthly Energy Review, various editions, and [www.eia.doe.gov/emeu/cabs/ope2.html](http://www.eia.doe.gov/emeu/cabs/ope2.html) as of April 3, 2001.

Chart 5.14

“Oil Crash” to “Oil Boom” in 1996-2001: The Cumulative Impact on Saudi and OPEC Revenues  
(In US \$Current Billions)

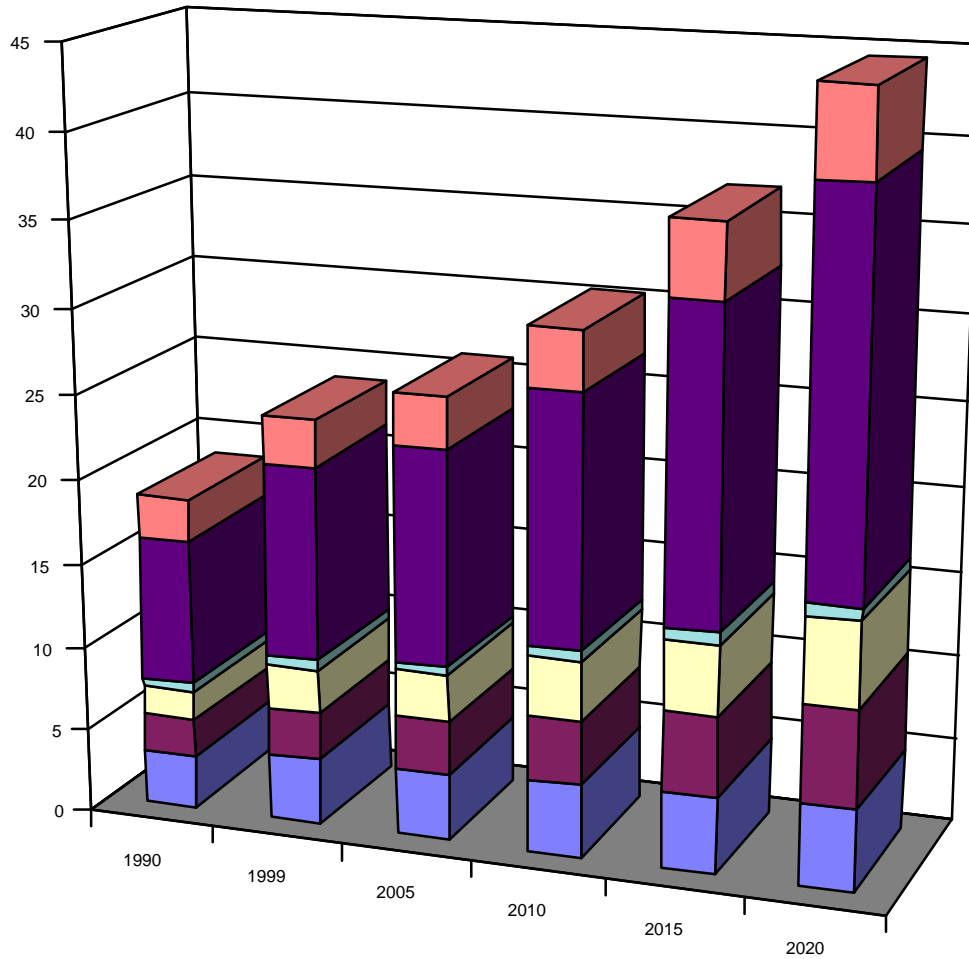


	1996	1997	1998	1999	2000	2001
Indonesia	7.9	8.1	4.8	3.7	4	4
Qatar	3.3	4.3	3.4	4.1	6.7	6.4
Algeria	7.9	7.5	5.7	6.5	11	10.7
Libya	11.1	10.2	7.1	7.4	12.9	12.5
Kuwait	13.5	12.4	9.1	10	17.7	16.9
Iraq	na	na	na	na	19.3	19
Nigeria	17.5	17.8	13.2	12	19.6	19.5
UAE	14.5	13.5	9.5	11.9	20.7	19.6
Venezuela	17.1	17.5	12.7	13.6	22.6	22.2
Iran	18.7	16.3	12.8	13.9	23.6	22.8
Saudi Arabia	45.7	42.9	29.2	38.3	66	62.6

Source: Adapted by Anthony H. Cordesman from projections by the EIA in various editions of its “OPEC Revenues Sheet”.

Chart 5.17

The US Projects Massive Increases in Saudi Oil Production Capacity and in Implied Oil Export Earnings  
(In Millions of Barrels Per Day)



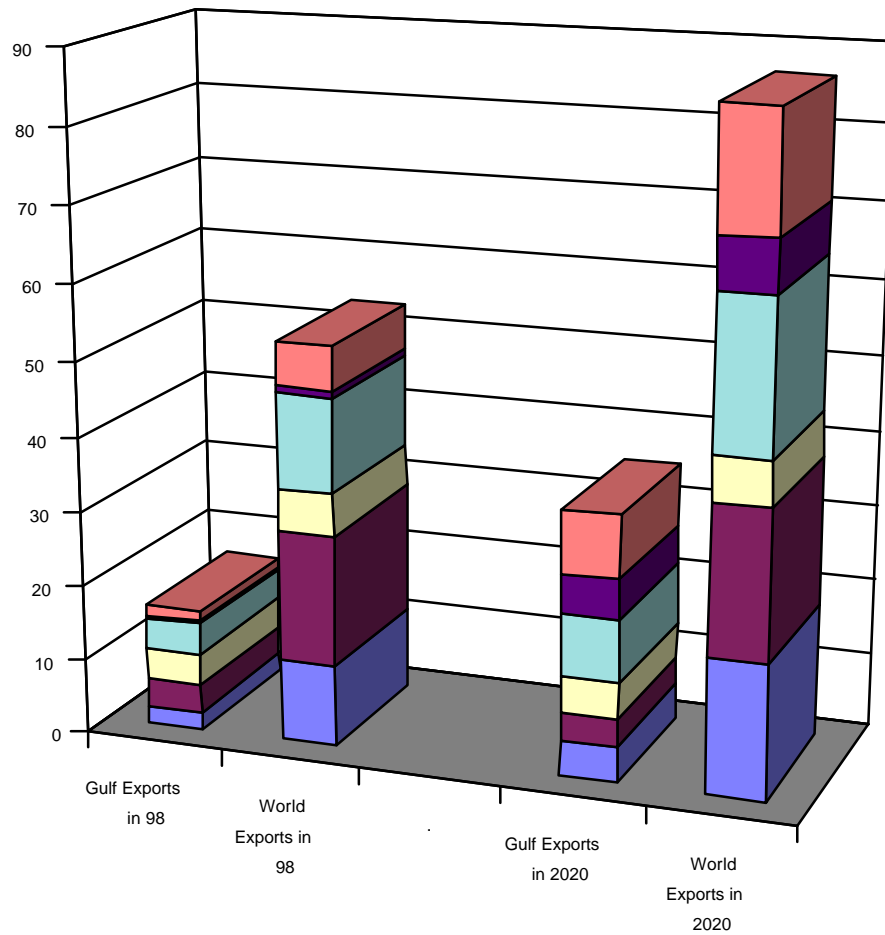
	1990	1999	2005	2010	2015	2020
■ UAE	2.5	2.7	3	3.5	4.4	5.1
■ Saudi Arabia	8.6	11.4	12.6	14.7	18.4	23.1
■ Qatar	0.5	0.6	0.5	0.6	0.7	0.7
■ Kuwait	1.7	2.6	2.8	3.5	4.1	5
■ Iraq	2.2	2.8	3.1	3.8	4.7	5.8
■ Iran	3.2	3.9	4	4.3	4.6	4.8

Total Gulf	27.2	34.2	38.5	44.3	52.5	62.4
Total World	69.4	78.7	87.9	97.4	109.2	122.4
Gulf as % of World	39%	43%	44%	45%	48%	51%

Source: Adapted by Anthony H. Cordesman from US Department of Energy, International Energy Outlook, 2001, Washington, Energy Information Agency, April 2001, Appendix D

Chart 5.18

The Same is True of US Projections of Actual Saudi Exports  
(In Millions of Barrels Per Day)



	Gulf Exports in 98	World Exports in 98		Gulf Exports in 2020	World Exports in 2020
Rest of World	1.3	5.9		8.3	15.7
China	0.4	0.9		5.3	6.7
Pacific Rim	4.2	12.6		8.2	20.4
Industrial Asia	4.1	5.5		4.8	5.9
Western Europe	4	17.4		3.7	19.8
North America	2.2	11		4.7	18

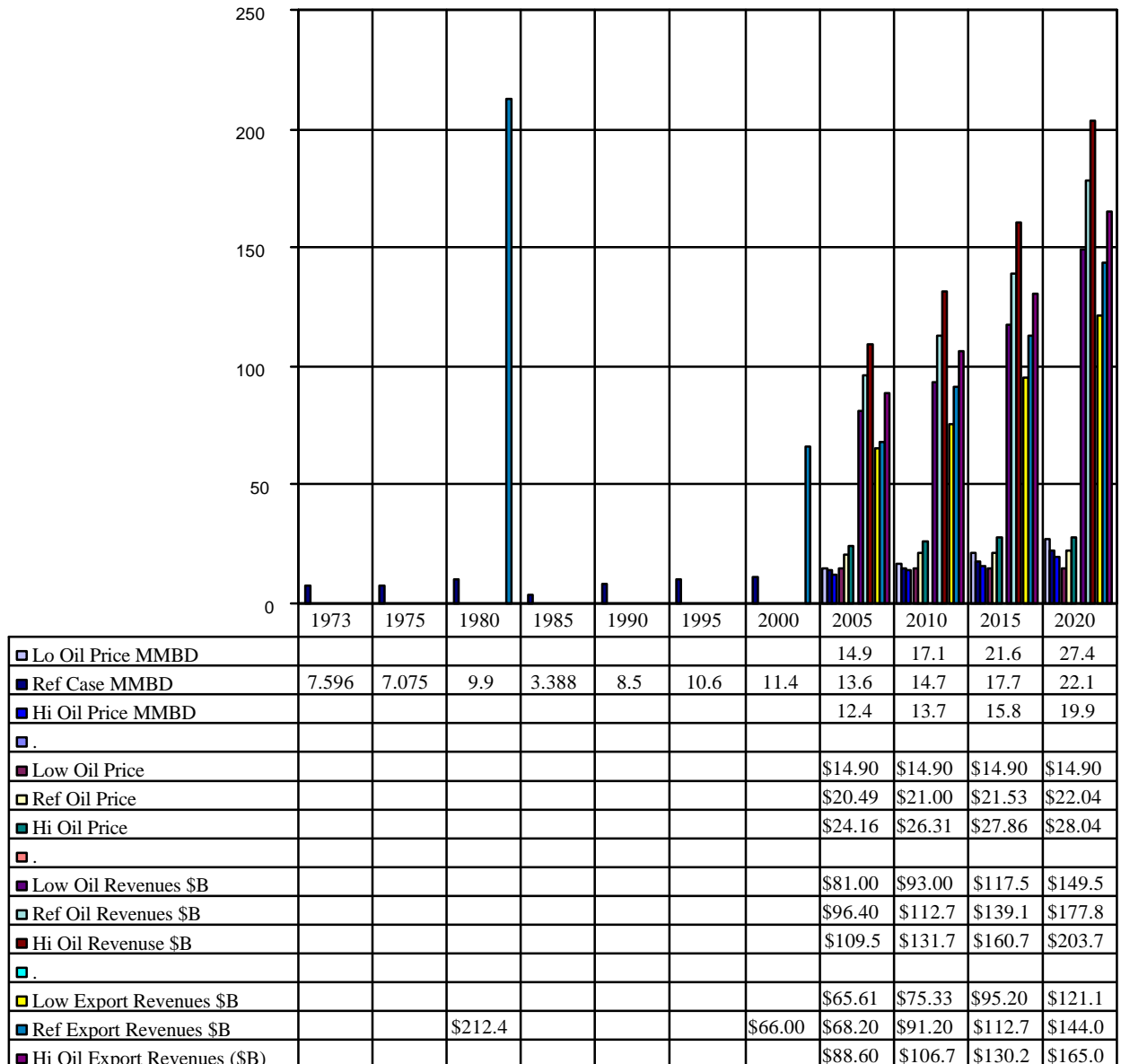
Total Gulf 16.2 35.0  
 Total World 53.3 86.5  
 Gulf as % of World 30.4% 40.5%

Source: Adapted by Anthony H. Cordesman from US Department of Energy, International Energy Outlook, 2001, Washington, Energy Information Agency, April 2001, Table 13, p. 39

Chart 5.19

Even Extremely Favorable Estimates of Future Saudi Oil Revenues Do Not Bring Them Back to the 1980 Peak

(EIA Cases. Revenues Equal Daily MMBD X 365 X oil price. Export Revenues equal 0.81 X Total Revenues. Prices in Constant \$US2000)



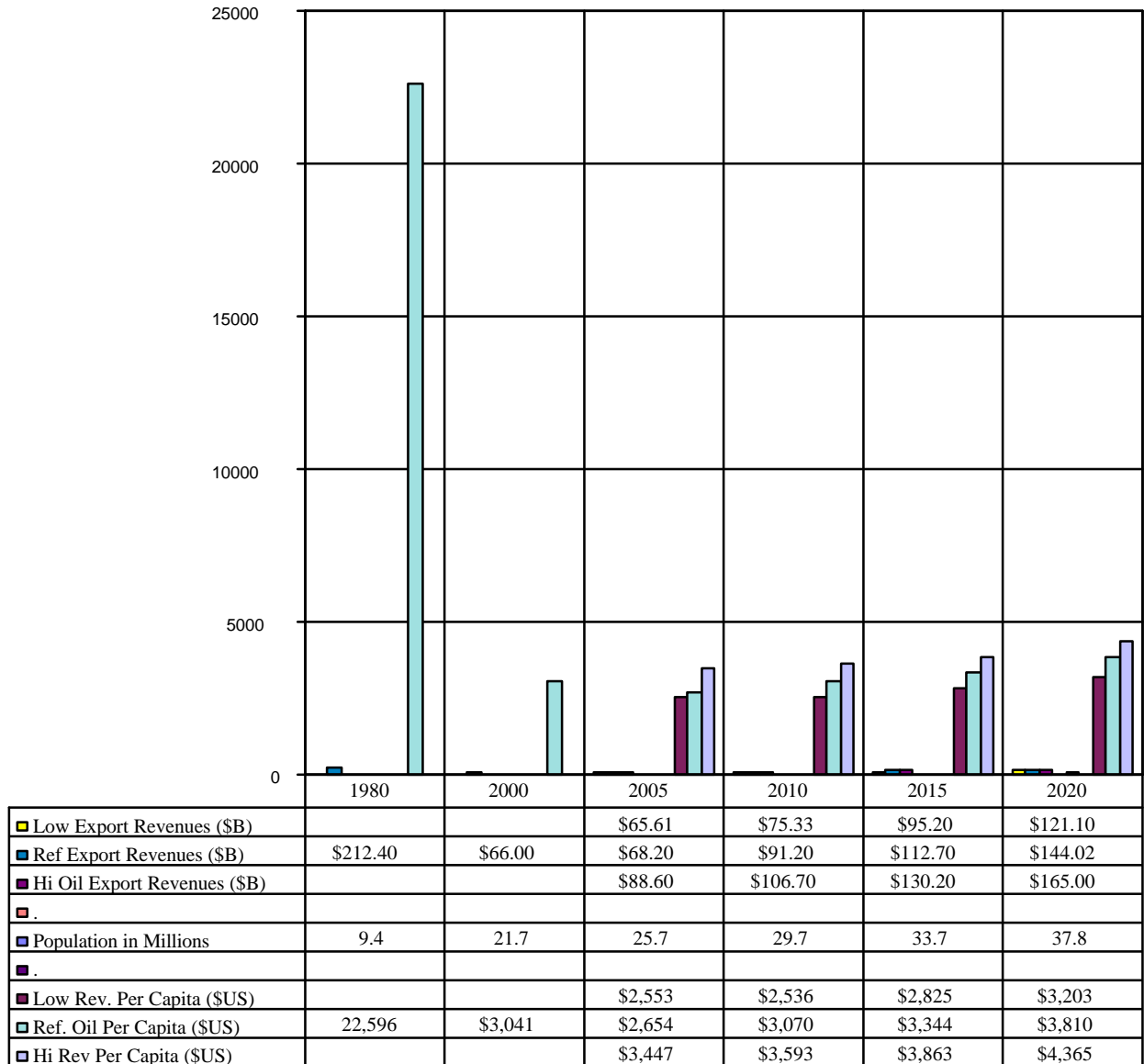
Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, DOE/EIA, DOE/EIA-0484 (2000), March 2000, pp. 38, 39, and Table D.

Chart 5.20

Rough Estimates of Future Saudi Oil Revenues, Population, and Exports Per Capita: World Bank

Population Data

(EIA Cases. Revenues Equal Daily MMBD X 365 X oil price. Export Revenues equal 0.81 X Total Revenues. Prices in Constant \$US2000. Revenues per capita are Total export Revenues Divided by Population)

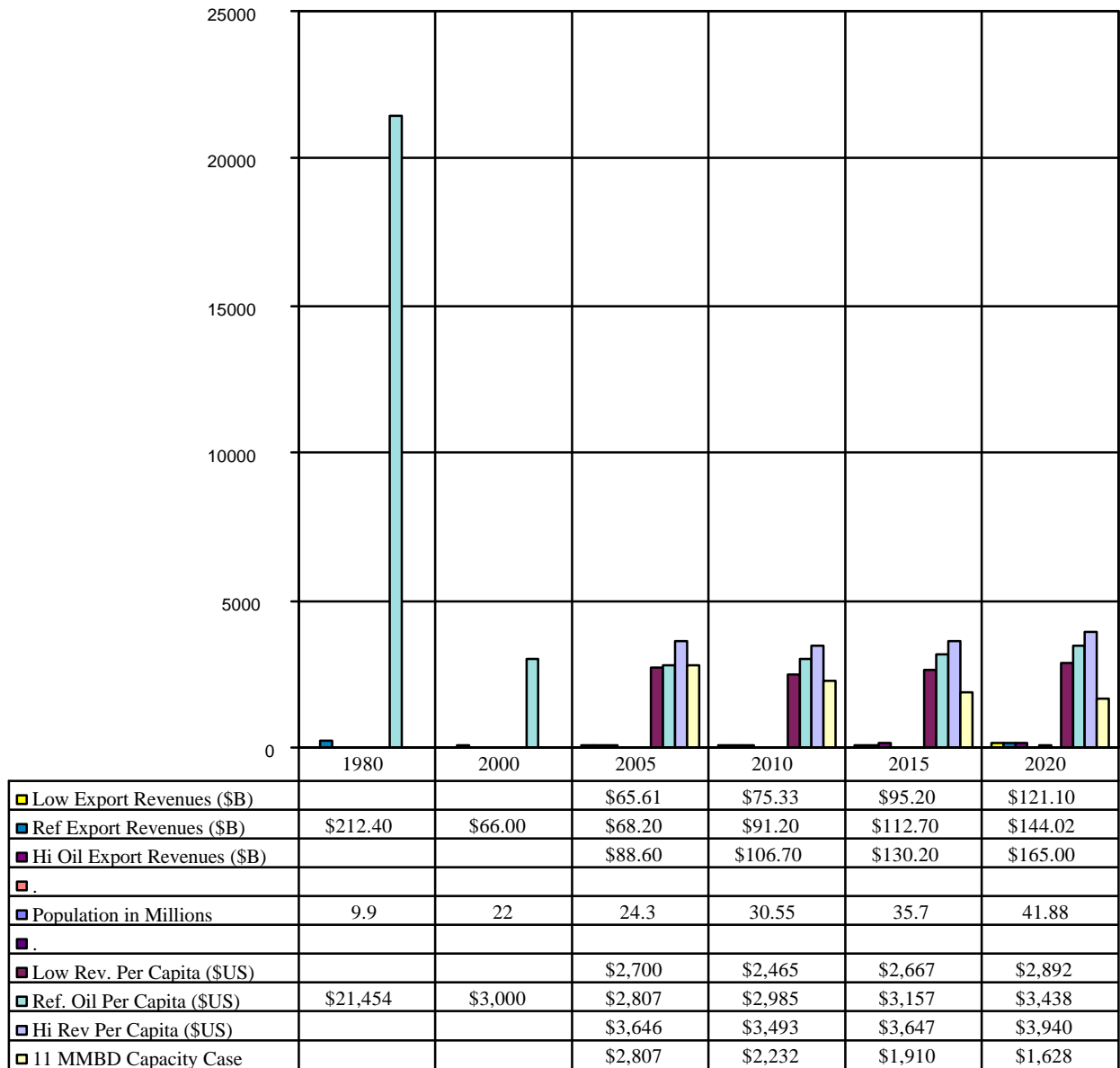


Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, DOE/EIA, DOE/EIA-0484 (2000), March 2000, pp. 38, 39, and Table D.

Chart 5.21

Rough Estimates of Future Saudi Oil Revenues, Population, and Exports Per Capita: US Census Bureau Data Population Data

(EIA Cases. Revenues Equal Daily MMBD X 365 X oil price. Export Revenues equal 0.81 X Total Revenues. Prices in Constant \$US2000. Revenues per capita are Total export Revenues Divided by Population)

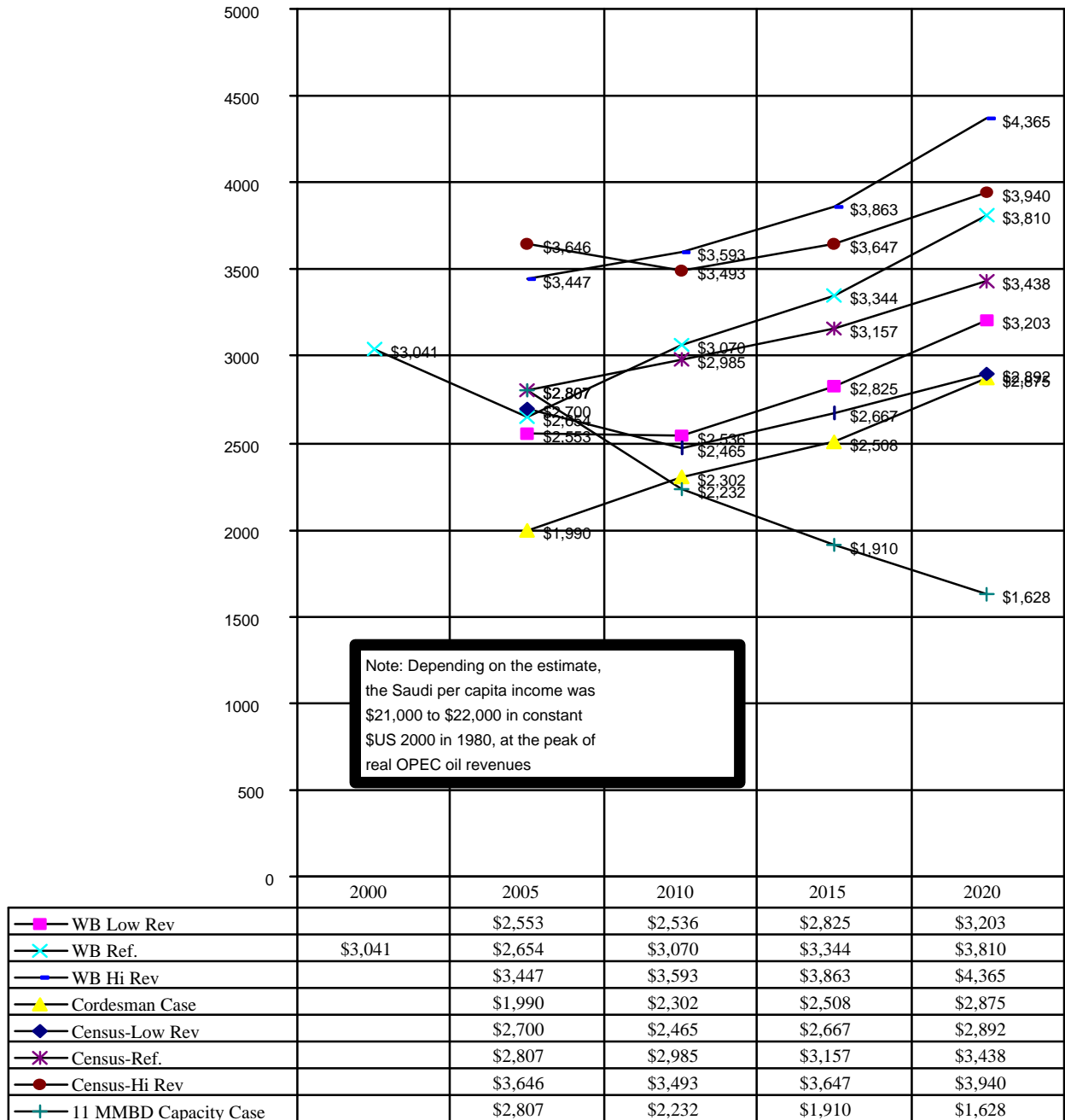


Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, DOE/EIA, DOE/EIA-0484 (2000), March 2000, pp. 38, 39, and Table D.

Chart 5.22

**Oil “Wealth” Equals Oil “Adequacy” or Oil “Poverty”: Future Saudi Oil Exports Per Capita: 2000-2020**

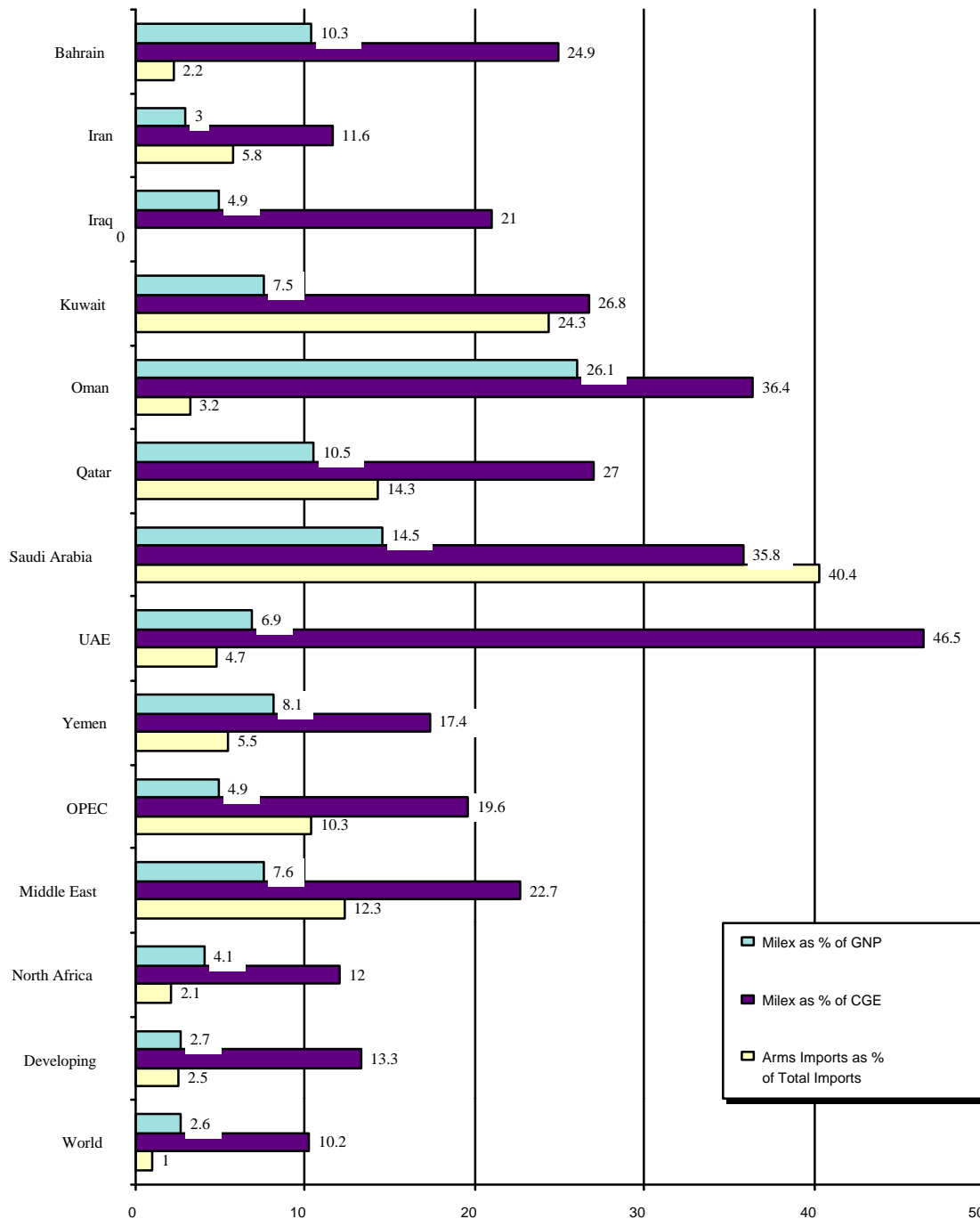
(EIA Cases. Revenues Equal Daily MMBD X 365 X oil price. Export Revenues equal 0.81 X Total Revenues. Prices in Constant \$US2000. Revenues per capita are Total export Revenues Divided by Population. Cordesman case is 75% of Reference Case)



Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, DOE/EIA, DOE/EIA-0484 (2000), March 2000, pp. 38, 39, and Table D.

Chart 5.23

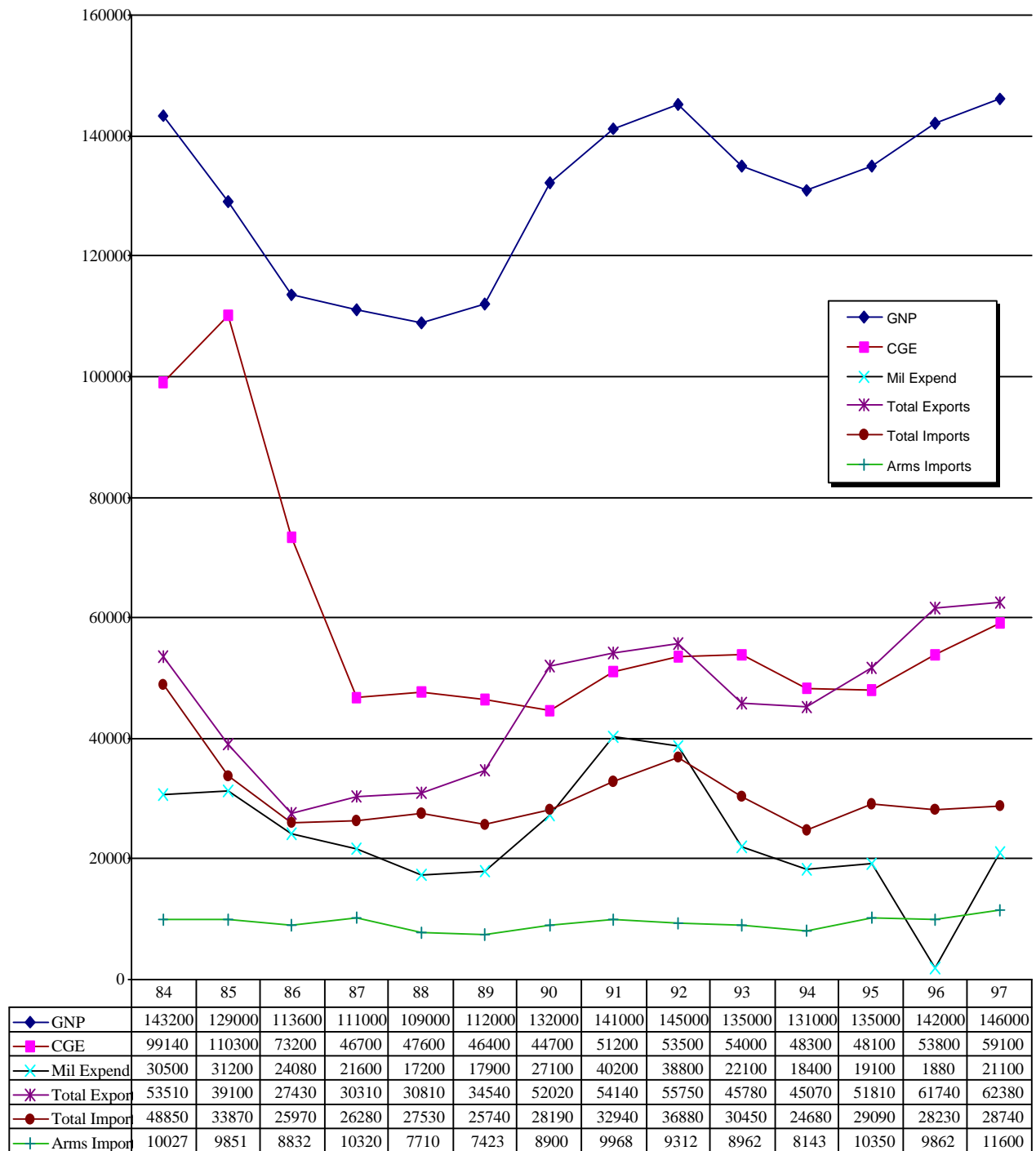
**Military Expenditures and Arms Transfers as an Aspect of “Statism” in the Gulf**  
 (Military spending as a percent of Central Government Expenditures (CGE) and Gross National Product (GNP), and Arms Imports as a Percent of Total)



Source: Adapted by Anthony H. Cordesman from US State Department, World Military Expenditures and Arms Transfers, 1998, Bureau of Arms Control, Washington, 1999.

Chart 5.24

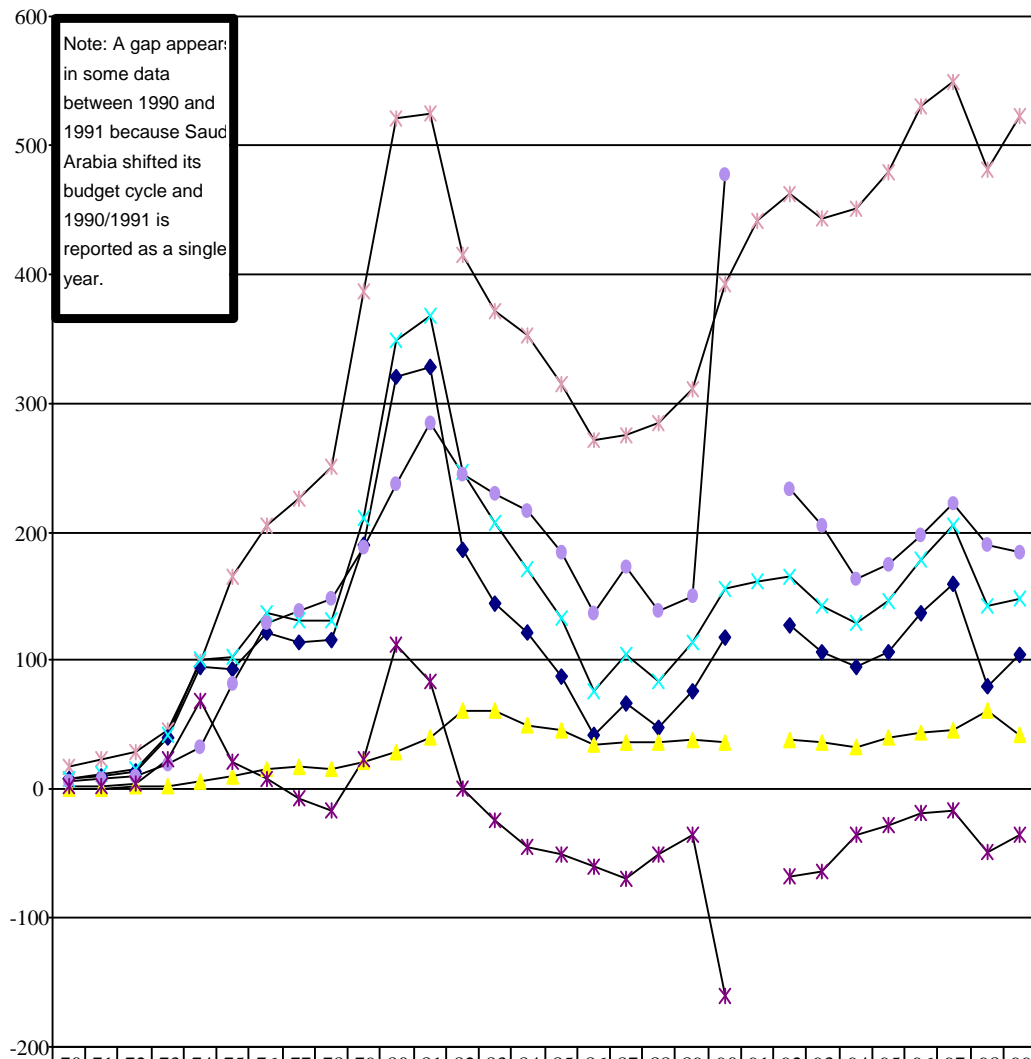
Saudi Gross National Product, Central Government Expenditures, Military Expenditures, Total Exports, Total Imports and Arms Import Deliveries: 1984-1997  
(Constant \$97 millions)



Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, 1995, ACDA/GPO, Washington, 1996 and US State Department, World Military Expenditures and Arms Transfers, 1998, Bureau of Verification and Compliance, Washington, 2000.

Chart 5.25

Saudi Arabian Government Oil and Total Revenue versus Total Expenditures and Surplus/Deficit



	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	
—x— GDP	17	23	28	47	99	165	205	225	250	386	521	525	415	372	351	314	271	276	283	311	392	442	461	444	450	479	529	549	481	522	
—◆— Petroleum Revenues	7.1	9.7	14	39	94	121	114	115	189	319	329	186	145	121	88	42	67	48	76	118	*11	127	106	96	106	136	160	80	105		
—▲— Other Revenues	0.8	1.4	1.9	2.4	5.9	9.9	15	17	16	22	29	39	60	61	50	45	34	36	36	39	37	*36	38	36	34	41	43	46	62	43	
—x— Total Revenues	7.9	11	15	42	100	103	136	131	132	211	348	368	246	206	172	134	77	104	85	115	153	162	165	141	129	147	179	206	142	148	
—●— Total Expenditures	6.4	8.3	10	19	32	82	128	138	148	188	237	285	245	230	216	184	137	174	139	150	477	*47	233	206	164	174	198	221	190	184	
—x— Budget Deficit	1.5	2.8	5.2	23	68	22	7.7	-7.4	-17	23	112	83	1.3	-24	-45	-50	-61	-70	-50	-35	-16	*	-67	-64	-35	-27	-19	-16	-49	-36	
—●— Budget Deficit as % of GDP																*12	*16	*22	*25	*17	*11	*19	*19	*14	*14	*7	*5	*3	*2	*10	*7

Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, 36<sup>th</sup> Annual Report- 1421H (2000G), Riyadh, SAMA, 2001, pp. 343-346, 360-361, 393-395. Note that the Saudi budget cycle was changed in 1990, and the budget period from 1990-1991 is reported as a single year.

Table 5.2Saudi Arabia's Annual Budgets: 1990-2001

<u>Fiscal Year</u>	<u>Revenues</u>		<u>Expenditures</u>		<u>Deficit</u>		
	<u>B Riyals</u>	<u>B \$US</u>	<u>B Riyals</u>	<u>B \$US</u>	<u>B Riyals</u>	<u>B \$US</u>	
1990	118		31.5	143	38.1	-25	-6.7
1991*	118		31.5	143	38.1	-25	-6.7
1992	151		40.3	181	48.3	-30	-8.0
1993	169		45.1	197	52.5	-27.8	-7.4
1994	120		32.0	160	42.7	-40	-10.7
1995	135		36.0	150	40.0	-15	-4.0
1996 - (Original Draft)	131.5		35.07	150	40.0	-18.5	-4.9
1996 - Actual	177		47.2	194	51.73.	-17.00	-4.53
1997	204		54.40	210	56.00	-6.00	-1.60
1998 – Estimate 12/97	178		47.5	196	53.3	-18.00	-4.80
1998 - Actual	143		38.13	189.0	50.40	-46.00	-12.26
1999	147.0		39.20	181.1	48.27	-33.7	-9.06
2000	248.0		66.13	203.00	54.13	45.00	12.00
2001 - Estimate	215.0		57.33	215.0	57.33	0	0

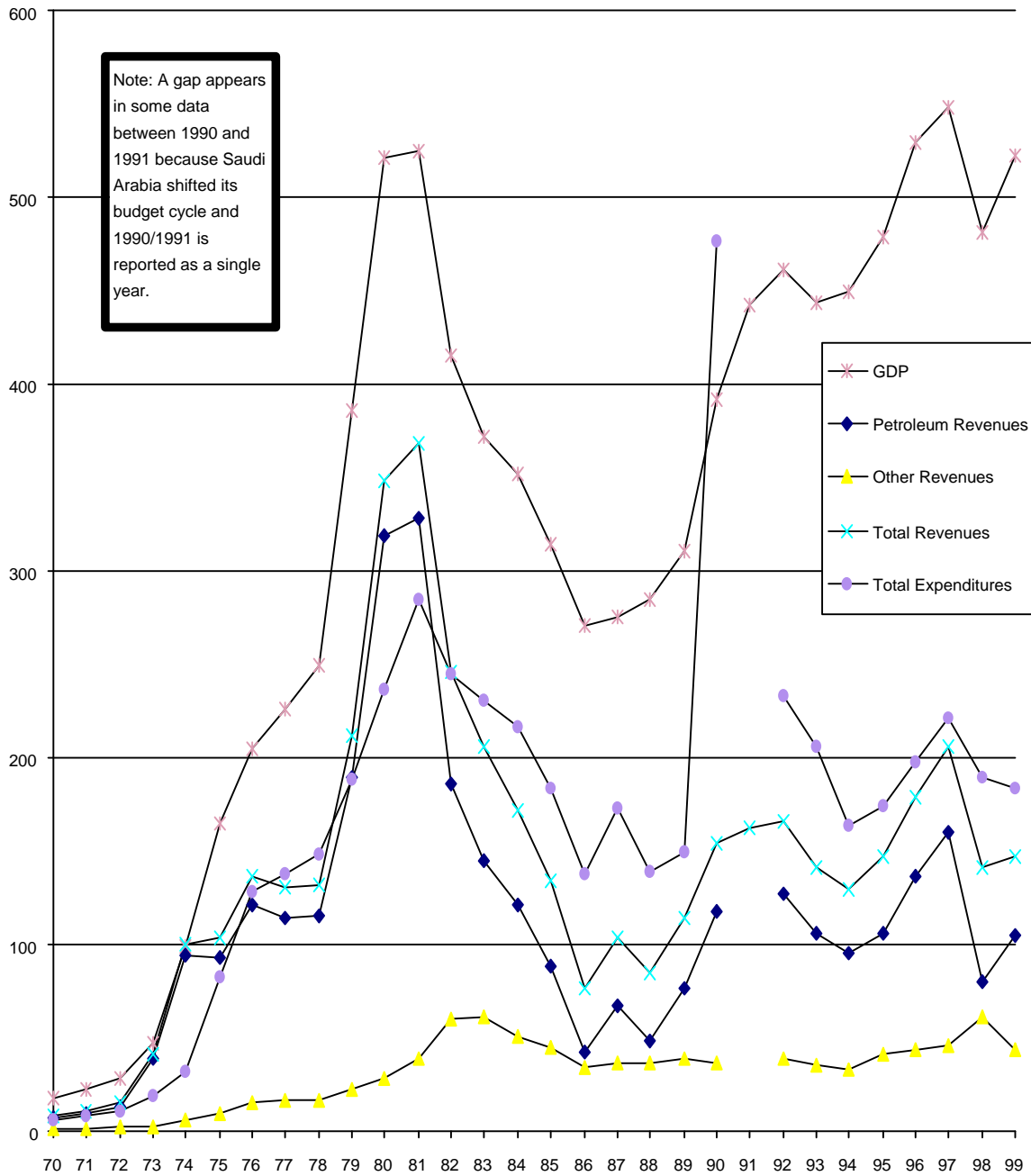
3.75 Saudi Riyals = \$1

\* Major off-budget expenditures to finance Gulf War

Source: Data for 1990-1995 are adapted from data provided in the monthly newsletter of the Information Office, Royal Embassy of Saudi Arabia, Volume 12, Number 2, February, 1995, p. 3. Data for 1996-1998 have been adapted from IMF Article IV report 1994, Saudi Arabia, Volume 14, Number 2, February, 1997, p. 3; and Saudi Arabia, Vol. 18, No. 1, January 2001, p. 2.

Chart 5.26

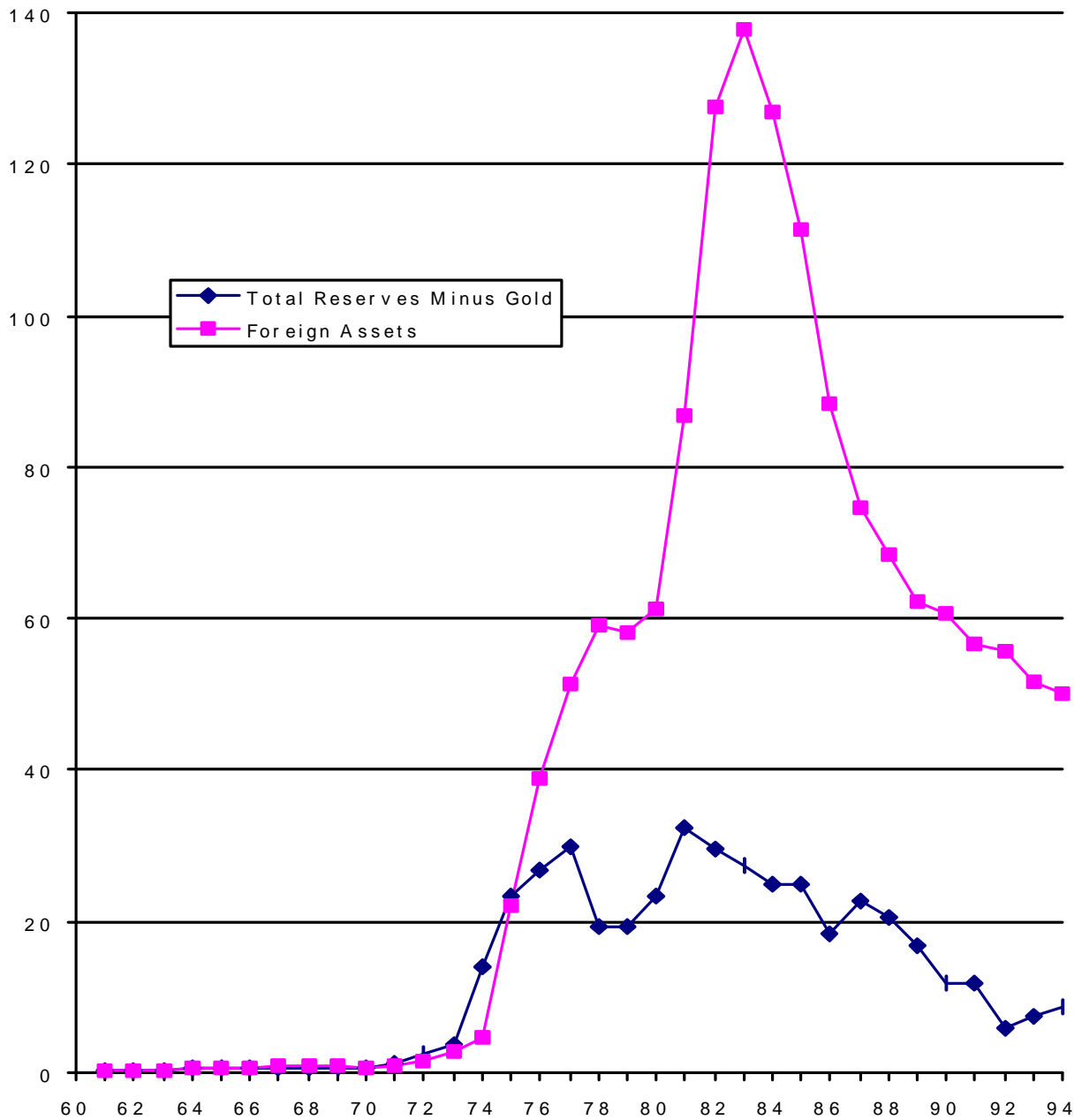
Saudi Arabian Government Oil and Total Revenue versus Total Expenditures and Surplus/Deficit



Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, 36<sup>th</sup> Annual Report- 1421H (2000G), Riyadh, SAMA, 2001, pp. 343-346, 360-361, 393-395

Chart 5.27

Saudi Arabia: Liquidity in Billions of US Dollars: 1960-1994

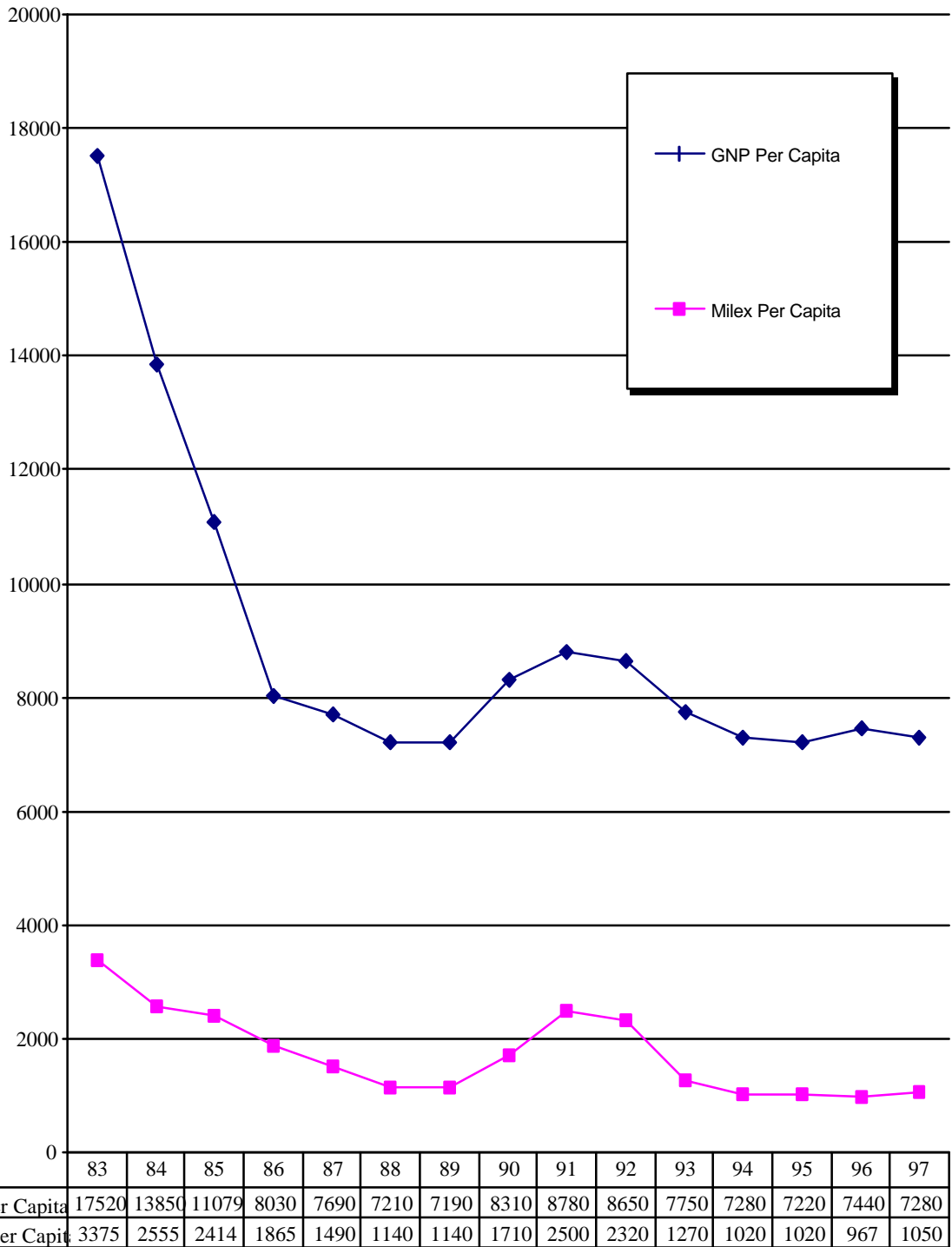


Note: No data on foreign assets after 1992.

Source: Adapted by Anthony H. Cordesman from International Energy Agency (IEA) Middle East Oil and Gas, Paris, 1995, pp. 305-309, and based on IMF, International Financial Statistics.

Chart 5.18

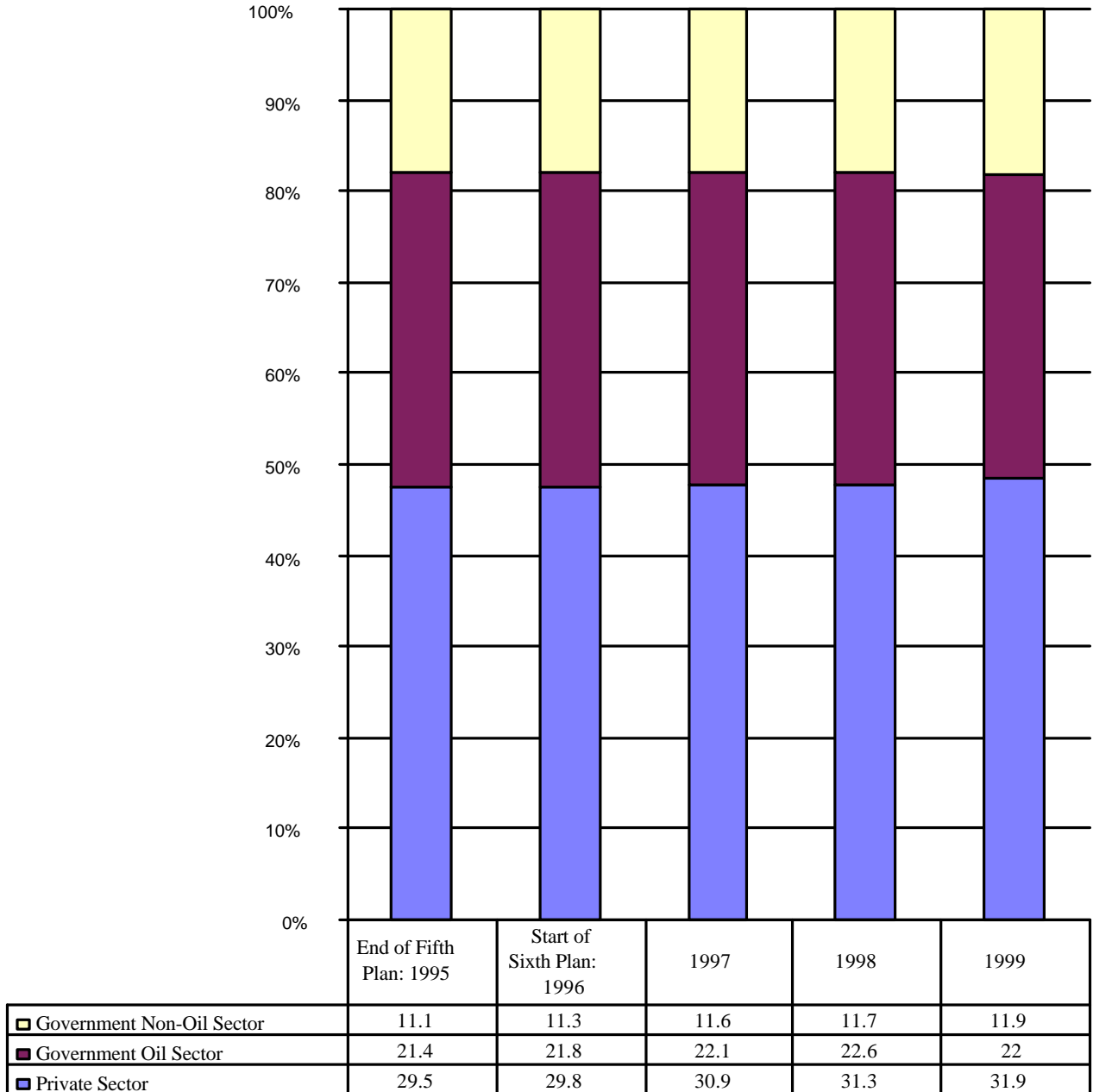
Saudi GNP Per Capita Versus Military Expenditures Per Capita: 1983-1997  
(Constant \$97)



Source: Adapted by Anthony H. Cordesman from ACDA, World Military Expenditures and Arms Transfers, 1995, ACDA/GPO, Washington, 1996 and US State Department, World Military Expenditures and Arms Transfers, 1998, Bureau of Arms Control, Washington, 1999.

Chart 5.19

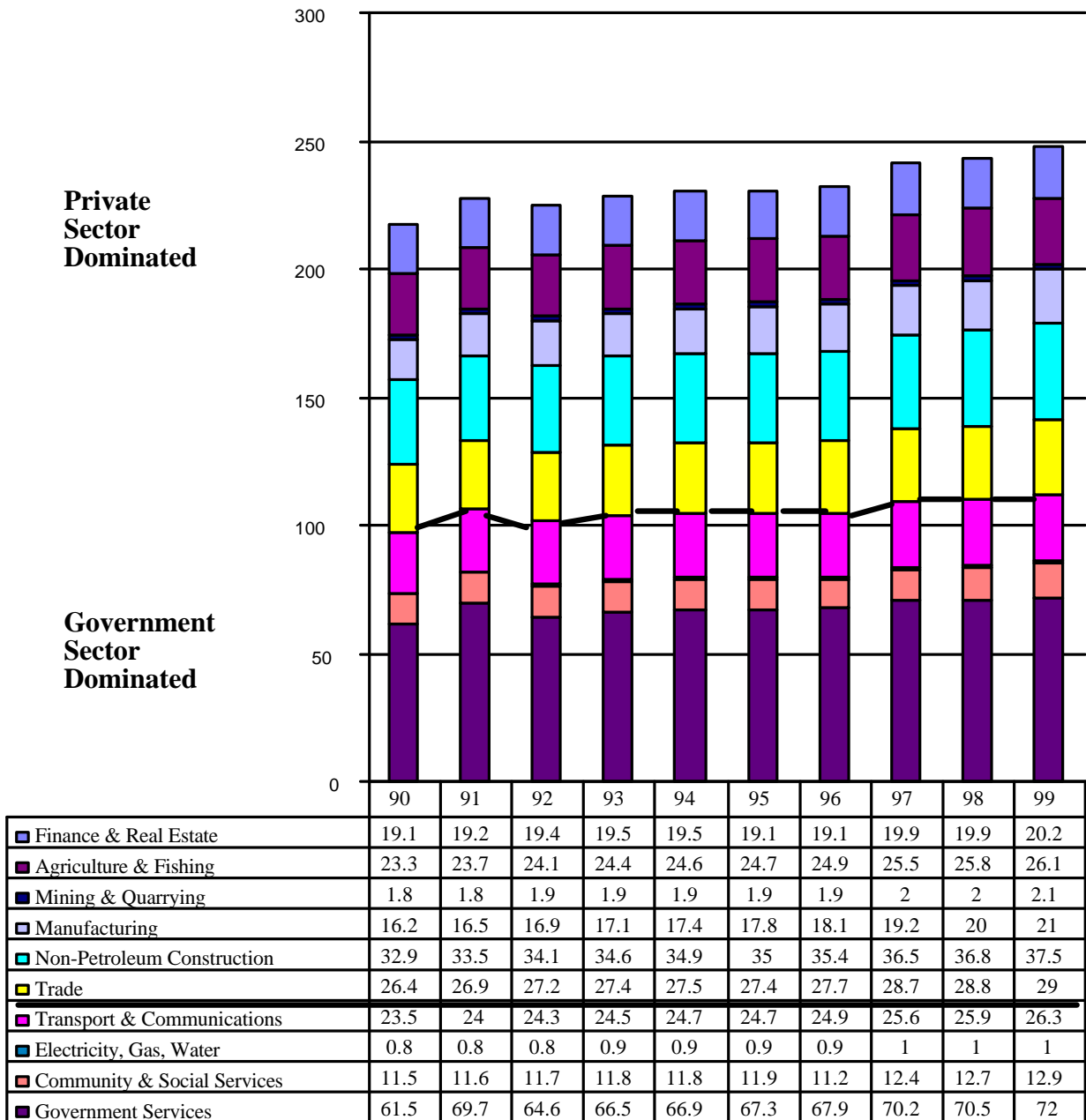
**Private vs. Public Sector Share of the Saudi Economy**  
(In Billions of Riyals at Constant 1970 Prices)



Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, 36<sup>th</sup> Annual Report- 1421H (2000G), Riyadh, SAMA, 2001, pp. 190-192.

Chart 5.20

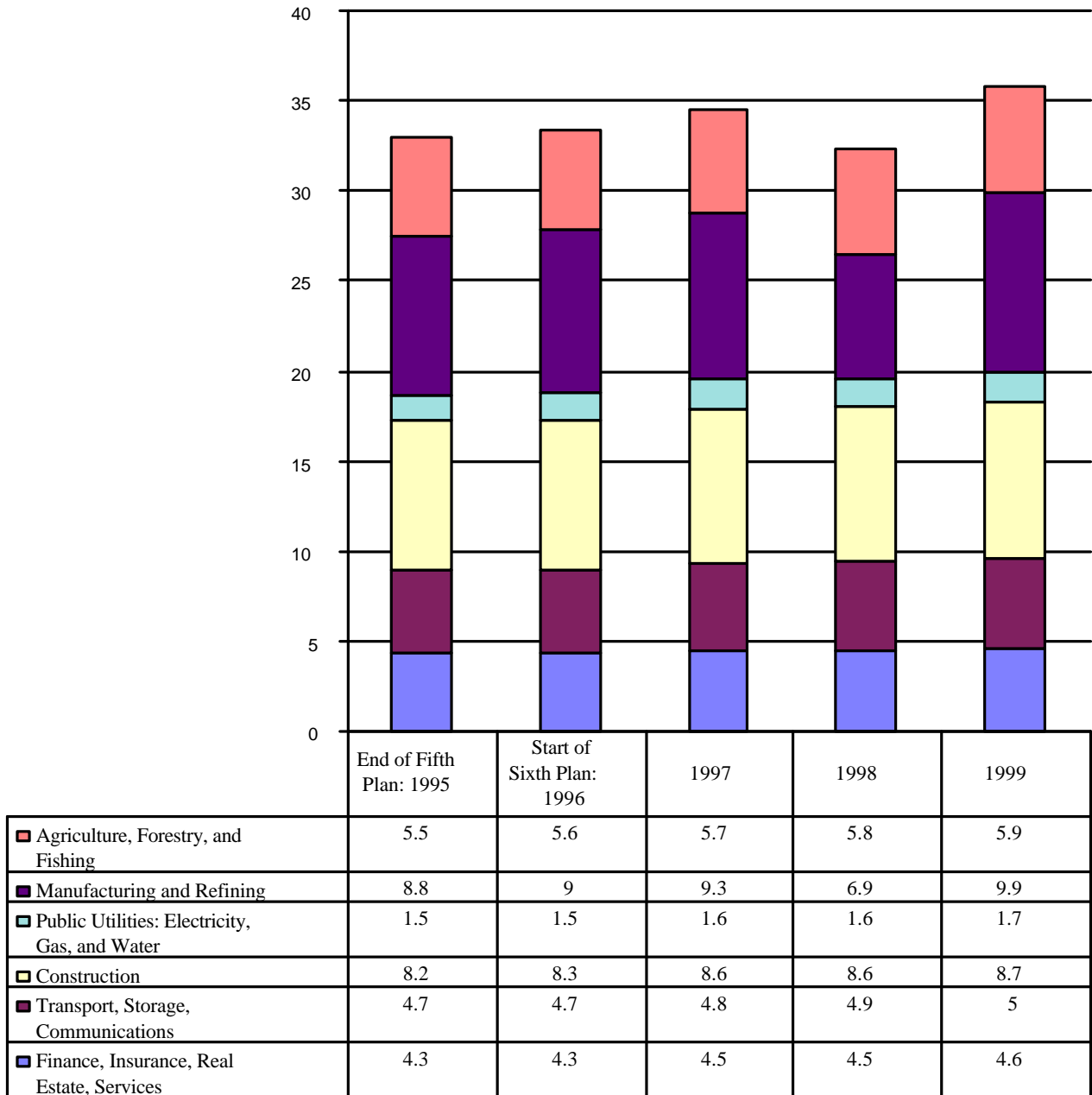
Non-Petroleum Activity in the Saudi Economy by Sector  
(In Billions of Constant \$1989 Riyals)



Source: Adapted by Anthony H. Cordesman from Ministry of Planning, Achievements of the Development Plans, 1390-1420 (1970-2000), Facts and Figures, Ministry of Planning, 18<sup>th</sup> Edition, 2001, Tables 11 and 12.

Chart 5.21

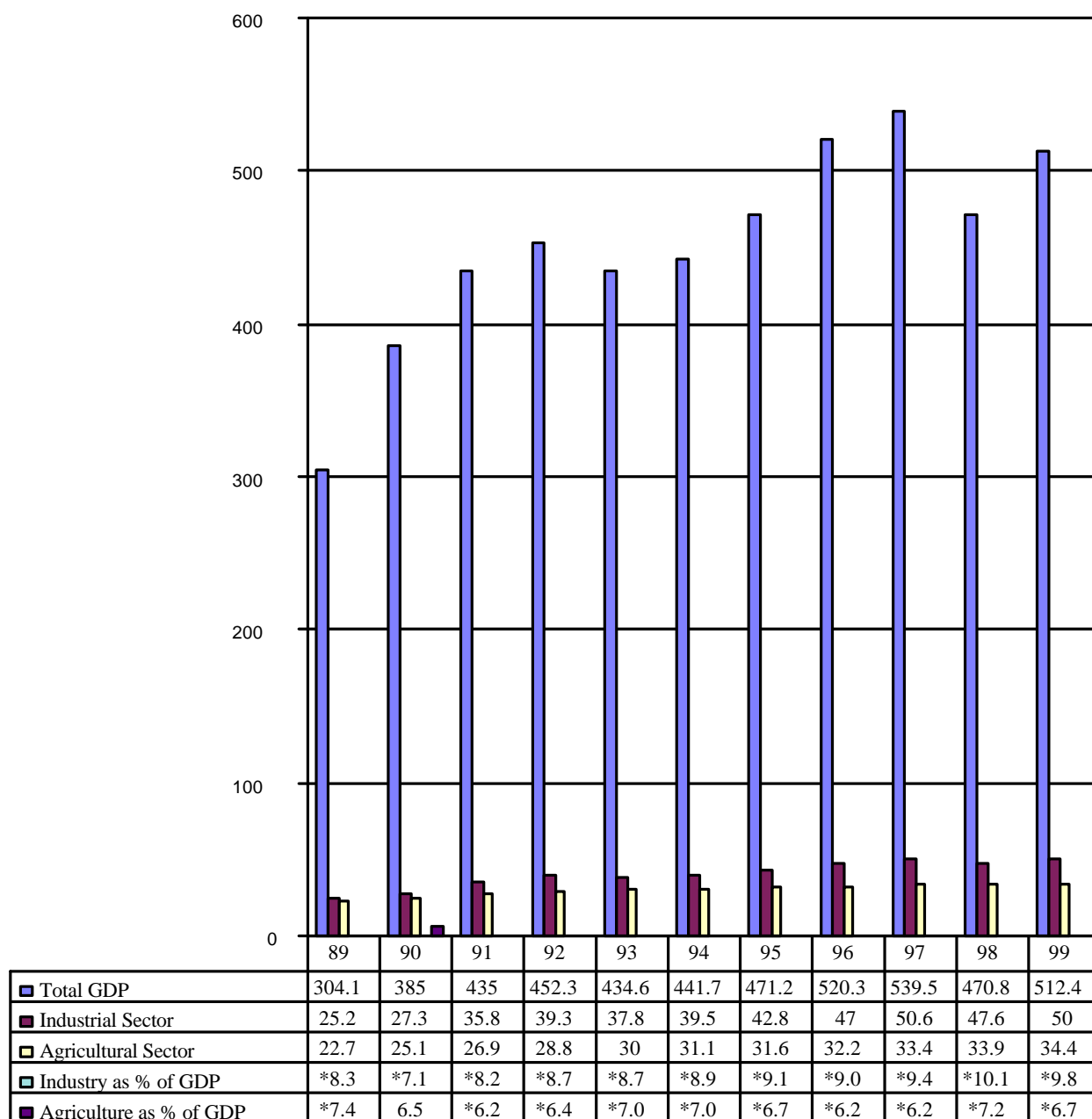
Private vs. Public Sector Share of Non-Petroleum Activity in the Saudi Economy  
(In Billions of Riyals at Constant 1970 Prices)



Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, 36<sup>th</sup> Annual Report- 1421H (2000G), Riyadh, SAMA, 2001, pp. 193-194.

Chart 5.22

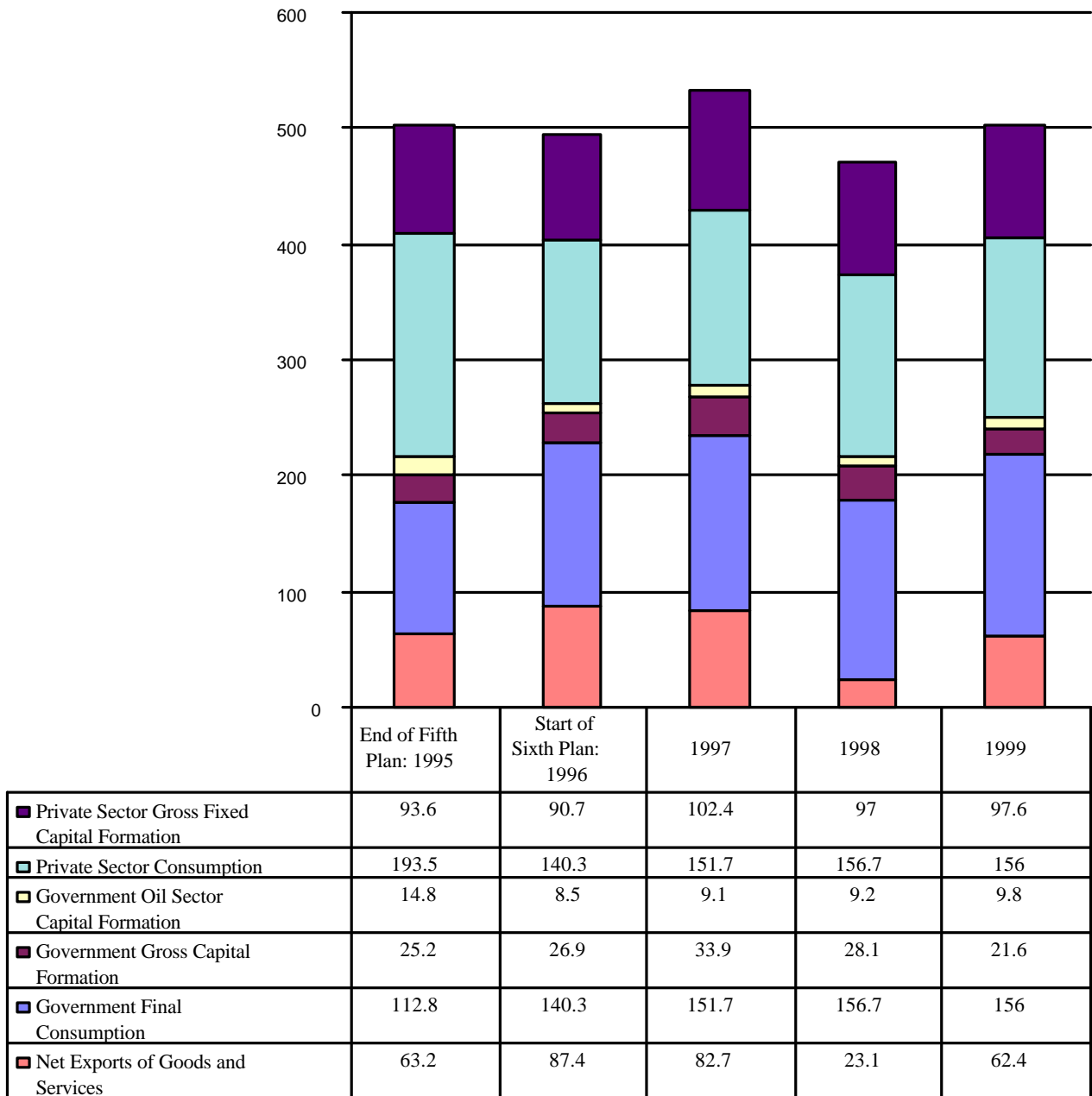
**Saudi Industrial and Agricultural Activity as Share of GDP**  
(In Billions of Riyals at Current Prices)



Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, 36<sup>th</sup> Annual Report- 1421H (2000G), Riyadh, SAMA, 2001, pp. 194-196.

Chart 5.23

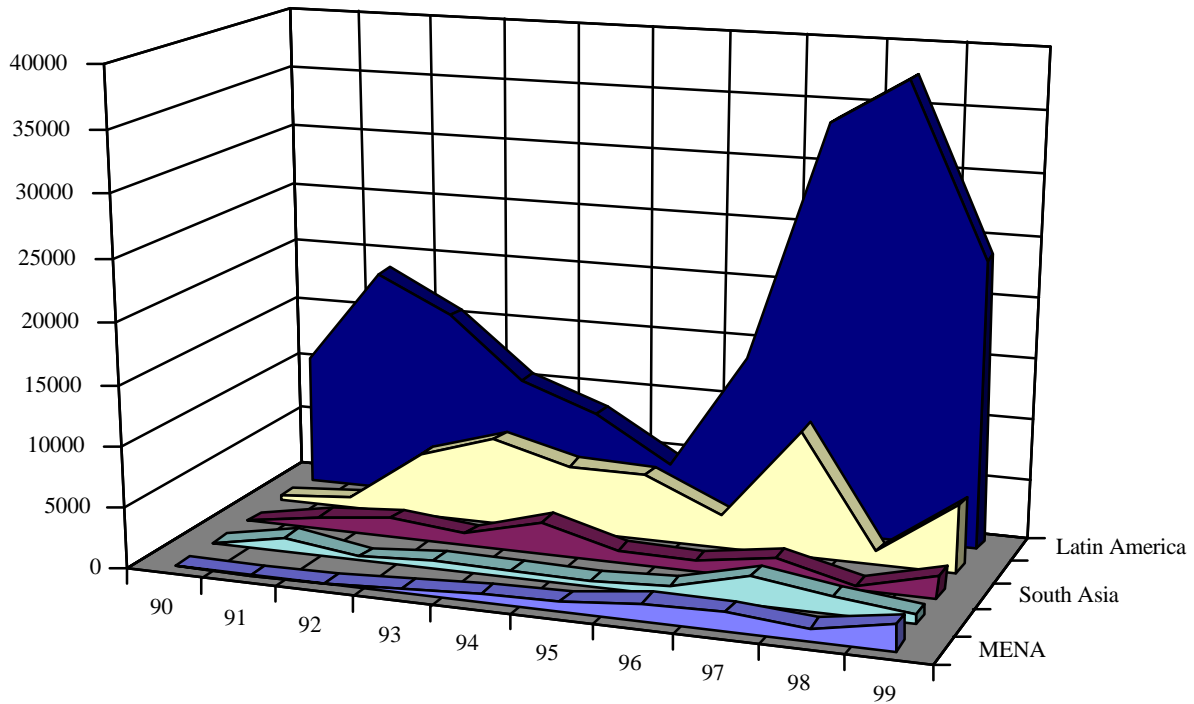
Private vs. Public Sector Share of Gross Domestic Expenditure and Gross Capital Formation  
(In Billions of Riyals at Current Prices)



Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, 36<sup>th</sup> Annual Report- 1421H (2000G), Riyadh, SAMA, 2001, pp. 193-194.

Chart 5.24

Privatization Revenues Have Lagged Badly Behind Other Regions: 1990-1999  
 (Transfer of Productive Assets from State to Private Investors: \$US Current Millions)

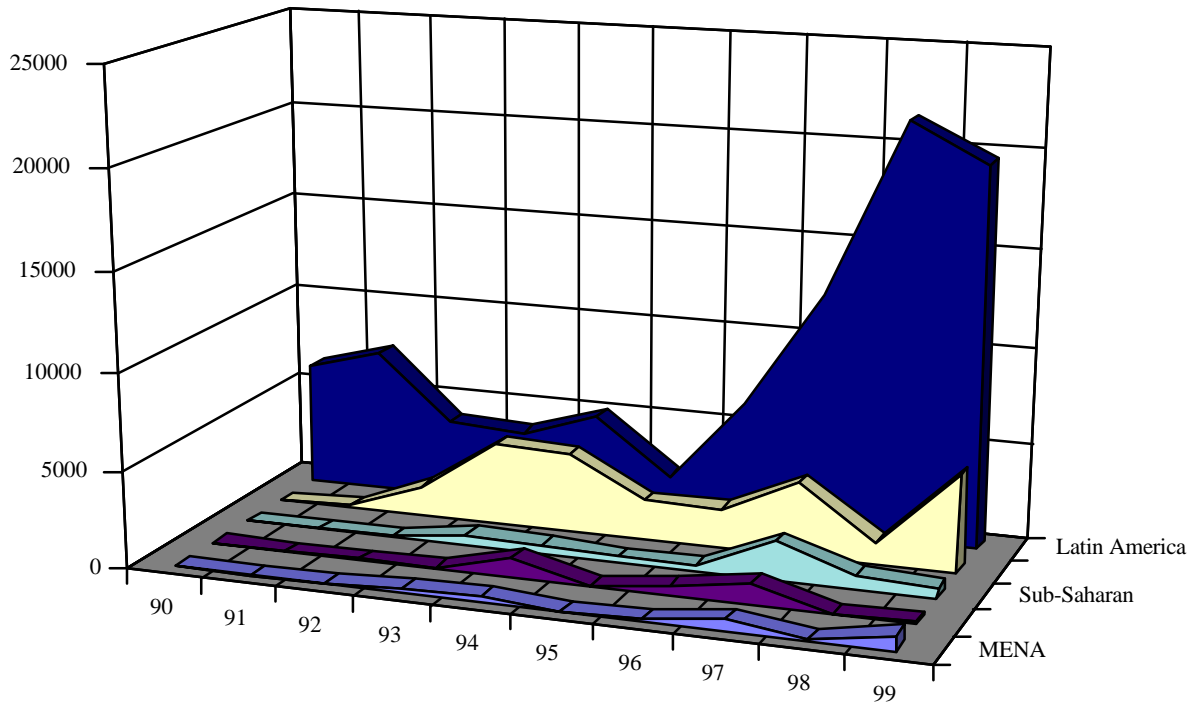


	90	91	92	93	94	95	96	97	98	99
■ MENA	2	17	69	417	782	746	1478	1612	1000	2074
■ Sub-Saharan	74	1121	307	641	605	473	745	2348	1356	694
■ South Asia	29	996	1557	974	2666	916	889	1794	174	1859
■ E.Asia/Pacific	376	834	5161	7155	5508	5410	2680	10385	1091	5500
■ Latin America	10915	18723	15560	10488	8199	4616	14142	33897	37685	23614

Source: Adapted by Anthony H. Cordesman from World Bank, Global Development Finance, 2001, Washington, World Bank, 2001, pp. 180-190

Chart 5.25

Negligible Regional Foreign Participation in Privatization: 1990-1999  
 (Transfer of Productive Assets from State to Private Investors: \$US Current Millions)

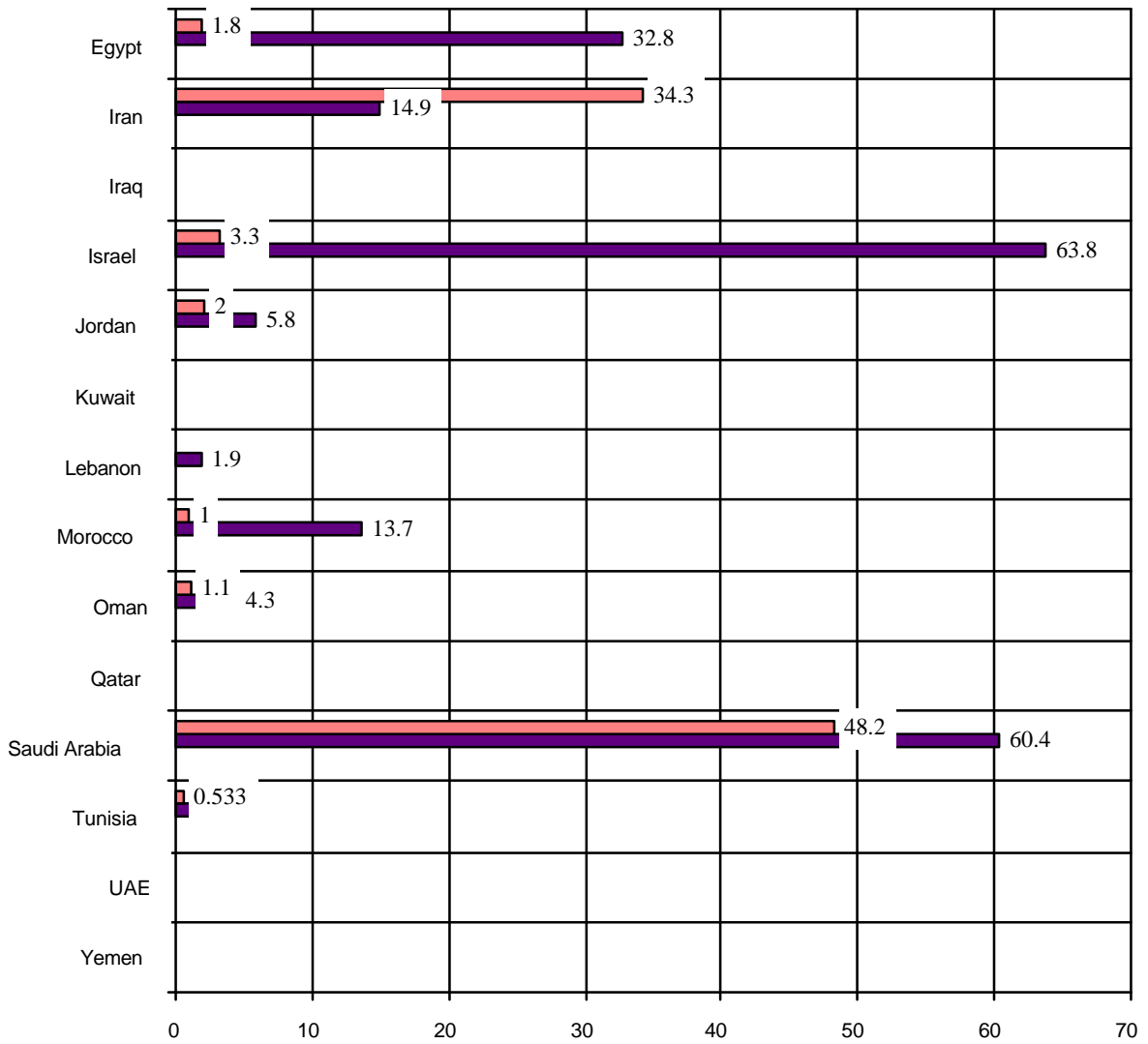


	90	91	92	93	94	95	96	97	98	99
■ MENA	0	3	19	183	246	16	126	623	43	747
■ South Asia	11	4	44	16	997	38	528	1043	11	104
■ Sub-Saharan	38	5	66	566	453	275	299	1969	694	418
■ E.Asia/Pacific	1	102	1556	4156	4036	2026	1990	3775	1082	4982
■ Latin America	6358	7384	4037	3765	5058	2206	6448	12486	21535	19567

Source: Adapted by Anthony H. Cordesman from World Bank, Global Development Finance, 2001, Washington, World Bank, 2001, p. 190.

Chart 5.26

The Saudi Stock Market Led Regional Growth During 1990-1998, Where the Private (\$US Current Billions)

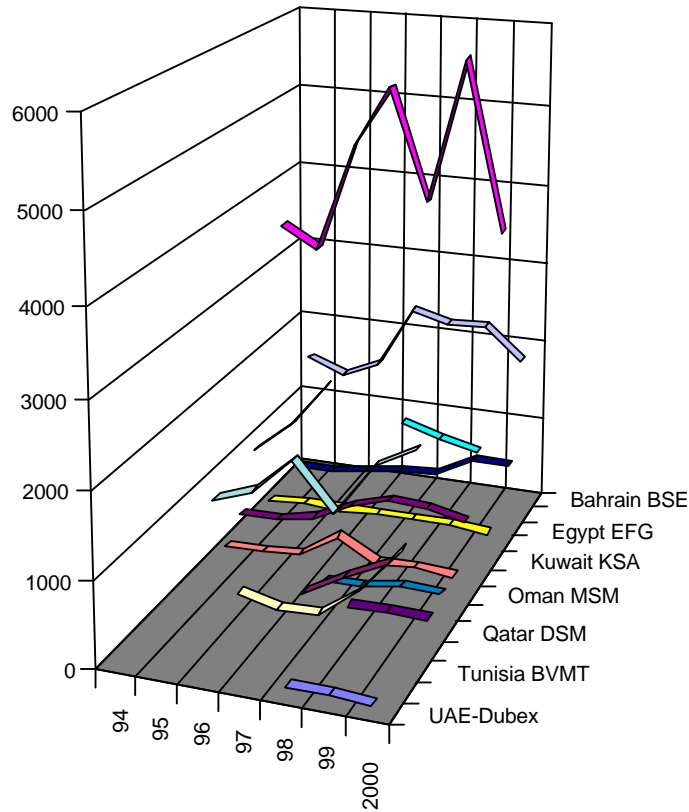


	Yemen	UAE	Tunisia	Saudi Arabia	Qatar	Oman	Morocco	Lebanon	Kuwait	Jordan	Israel	Iraq	Iran	Egypt
Capitalization in 90	-	-	0.533	48.2	-	1.1	1	-	-	2	3.3	-	34.3	1.8
Capitalization in 99	-	-	2.7	60.4	-	4.3	13.7	1.9	-	5.8	63.8	-	14.9	32.8
% of GNP in 99	-	-	*11.4	*33	-	*29.4	*44.1	*13.8	-	*79	*39.5	-	*13.1	*29.5
% if GNP in 90	-	-	*4.2	*40.8	-	*9.4	*3.7	-	-	*49.8	*6.3	-	-	*4.1

Adapted by Anthony H. Cordesman from Middle East Economic Digest, February 13, 1998, p. 10.

Chart 5.27

Growth of the Saudi and Other in MENA Stock Markets Fell Far Below the Rise in US and European Markets During 1994-2000  
(Capitalization in Local Currency)

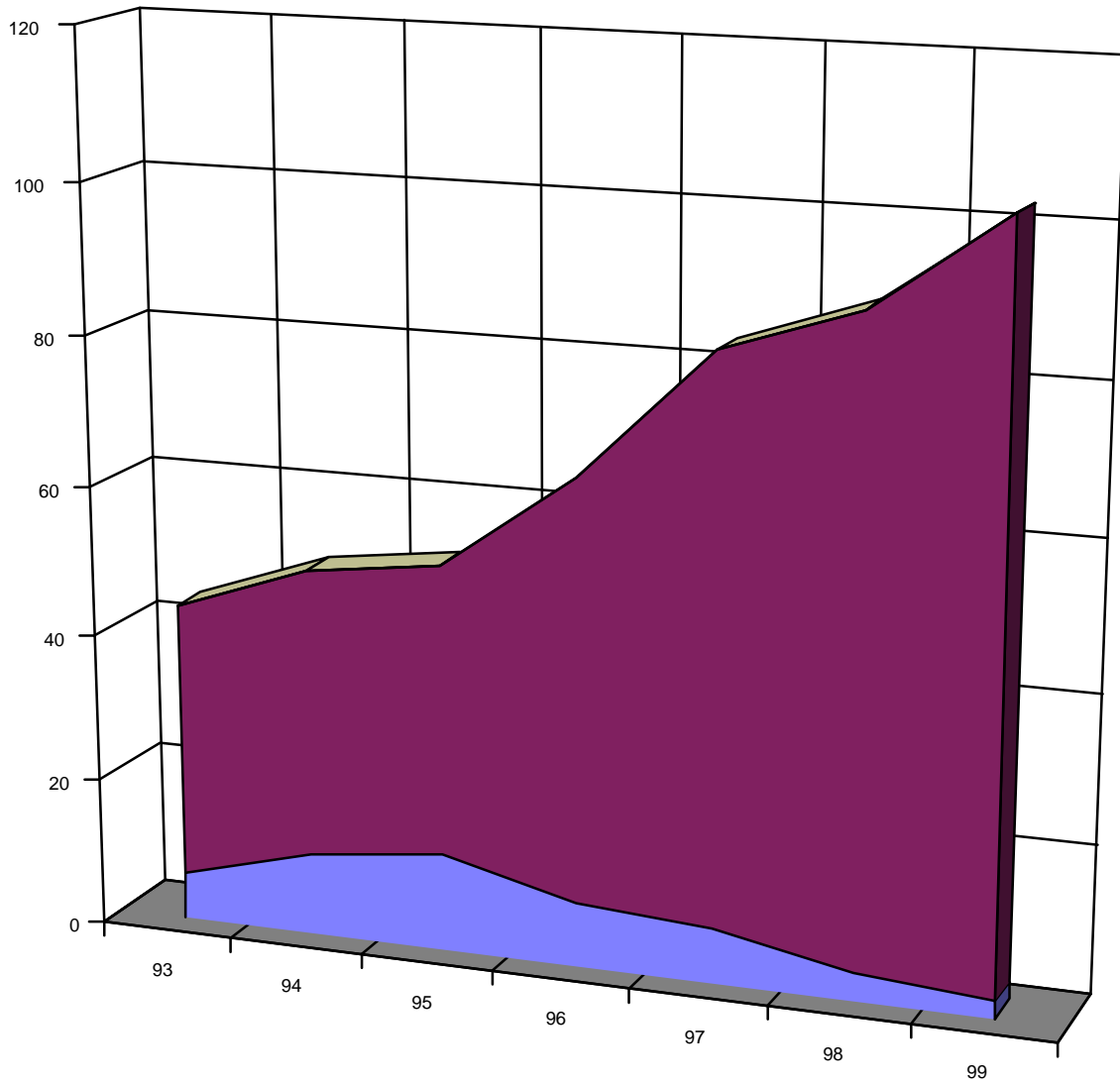


	94	95	96	97	98	99	2000
■ UAE-Dubex	-	-	-	-	120	99	83
■ Tunindex	-	-	-	-	917	1193	1,404
□ Tunisia BVMT	-	-	571	456	465	810	1352
□ Saudi NCFEI	-	1368	1531	1958	1413	2028	2271
■ Qatar DSM	-	-	-	-	135	134	123
■ Palestine Al-Q)	-	-	-	139	155	237	218
■ Oman MSM	146	158	199	481	228	250	209
■ Morocco CSE	342	342	444	667	803	777	674
■ Kuwait KSA	979	1366	1906	-	1583	1442	1344
■ Jordan ASE	144	159	154	169	170	167	134
■ Egypt EFG	3537	3269	4615	5354	4004	5759	3716
■ Egypt CMA	238	213	297	360	383	625	623
■ Bahrain BSE	1518	1327	1547	2310	2189	2212	1800

Adapted by Anthony H. Cordesman from Middle East Economic Digest, December 15, 2000.

Chart 5.28

Saudi Bank Investment in Government Securities: 1993-1999  
(Billions of Riyals)

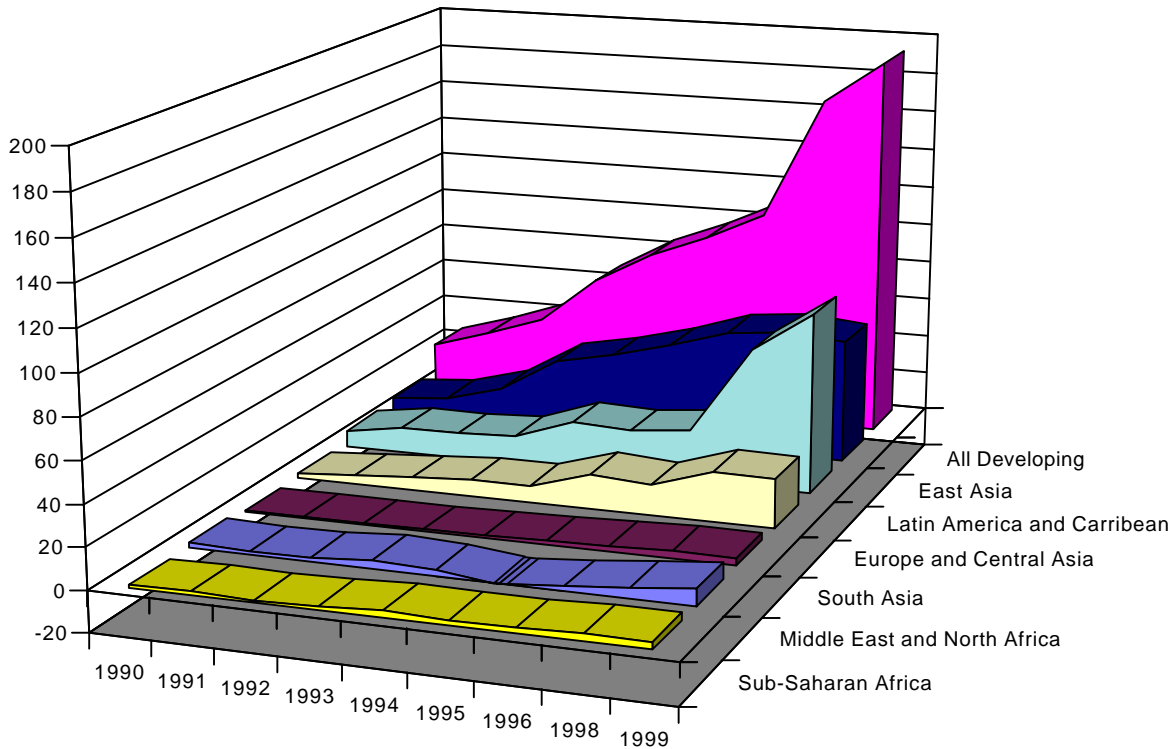


	93	94	95	96	97	98	99
■ Total	*43.5	*50.0	*52.3	*65.3	*83.2	*89.5	*102.3
■ Development Bonds	37.1	39	39.2	56.6	75.9	85.8	100
■ Treasury Bills	6.4	11	13.1	8.7	7.3	3.6	2.3

Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, Thirty-Sixth Annual Report, 1421H ((2000G), Research and Statistics Department, September 2000, p. 95.

Chart 5.28

Foreign Direct Investment Has Improved Since the New Oil Boom Began in 1999  
(\$US billions)

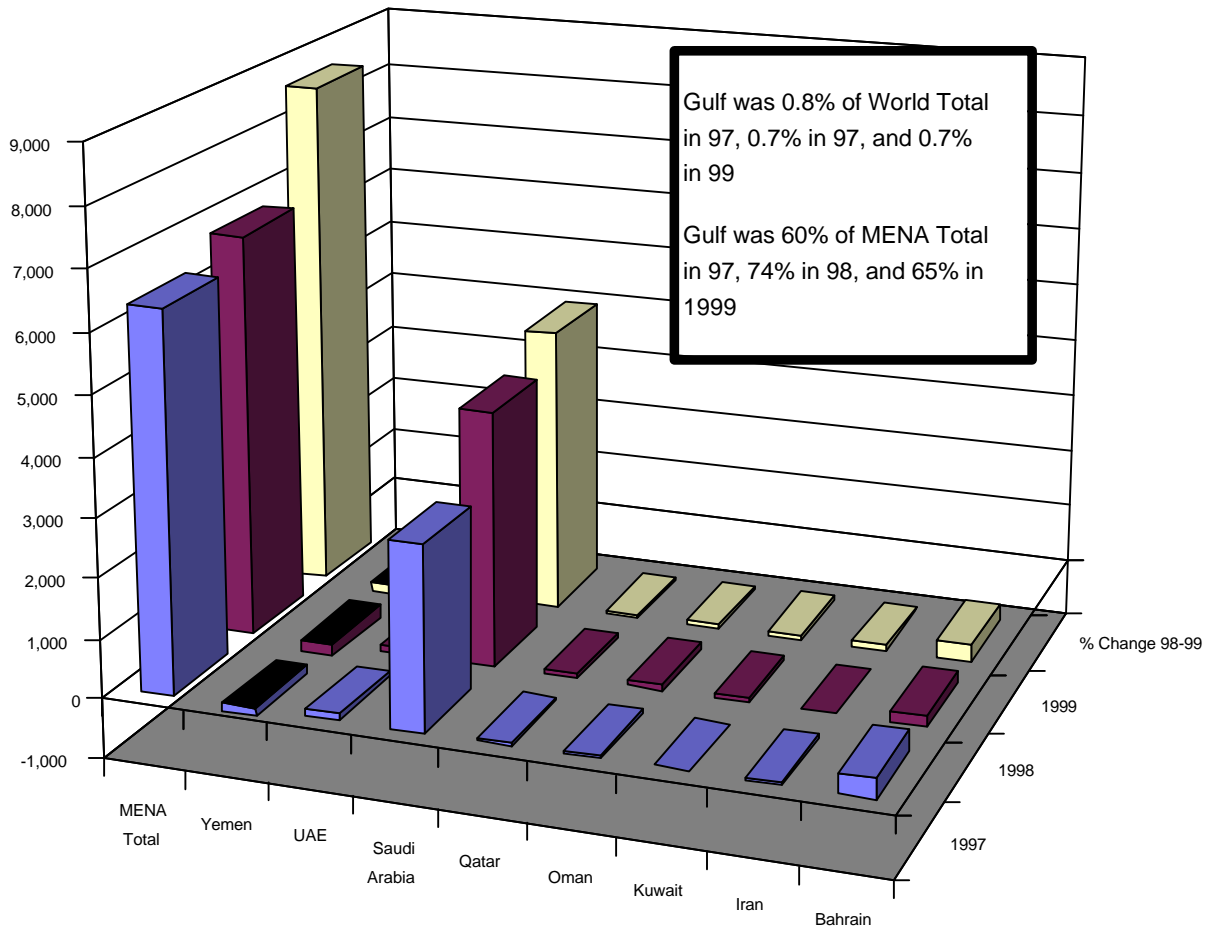


	1990	1991	1992	1993	1994	1995	1996	1998	1999
Sub-Saharan Africa	0.9	1.6	0.8	1.6	3.1	2.2	2.6	3.7	3.4
Middle East and North Africa	2.8	1.8	2.2	4.2	3	-0.3	2.2	5.1	8.1
South Asia	0.5	0.5	0.6	0.8	1.2	1.8	2.6	3.7	3.4
Europe and Central Asia	2.1	4.4	6.3	8.4	8.1	17.2	15	24.4	24
Latin America and Caribbean	8.1	12.5	12.7	14.1	24.2	22.9	25.9	69.3	89.4
East Asia	10.2	12.7	20.9	38.1	44.1	51.8	61.1	64.2	61.5
All Developing	24.5	33.5	43.6	67.2	83.7	95.5	109.5	170.9	192

Source: Adapted by Anthony H. Cordesman from Middle East Economic Digest, November 10, 2000, p. 26, and World Investment Report 2000, UNCTAD, Geneva, Switzerland.

Chart 5.29

Saudi Arabia is the Only Gulf State to Attract Significant FDI but These Amounts are Low By Global Standards  
(\$US billions)



	MENA Total	Yemen	UAE	Saudi Arabia	Qatar	Oman	Kuwait	Iran	Bahrain
■ 1997	6,364	-139	100	3,044	55	53	20	53	329
■ 1998	6,791	-210	100	4,289	70	106	59	24	181
■ 1999	8,647	-150	160	4,800	50	70	72	85	300
■ % Change 98-99		*-28.6	*60	*11.9	*-28.6	*-34.0	*22	*254.2	*65.7

Source: Adapted by Anthony H. Cordesman from Middle East Economic Digest, November 10, 2000, p. 26, and World Investment Report 2000, UNCTAD, Geneva, Switzerland.

Table 6.1

Comparative Oil Reserves and Production Levels of the Gulf StatesComparative Oil Reserves in Billions of Barrels

Country	Identified	Undiscovered	Identified + Undiscovered	Proven	% of World Total
Bahrain	-	-	-	.35	-
Iran	69.2	19.0	88.2	89.7	8.7%
Iraq	90.8	35.0	125.8	112.5	10.9%
Kuwait	92.6	3.0	95.6	96.5	9.3%
Oman	-	-	-	5.3	0.5%
Qatar	3.9	0	3.9	3.7	0.4%
Saudi Arabia	265.5	51.0	316.5	263.5	25.5%
UAE	61.1	4.2	65.3	97.8	9.4%
Total	583.0	112.2	695.2	675.6	65.4%
Algeria	-	-	-	9.2	0.9%
Libya	-	-	-	29.5	2.9%
Total Middle East & North Africa	-	-	-	714.4	69.2%
Rest of World (US)	-	-	-	313.7	31.4%
(North America)	-	-	-	28.6	2.9%
	-	-	-	63.7	6.2%
World	-	-	-	1,033.8	100.0%

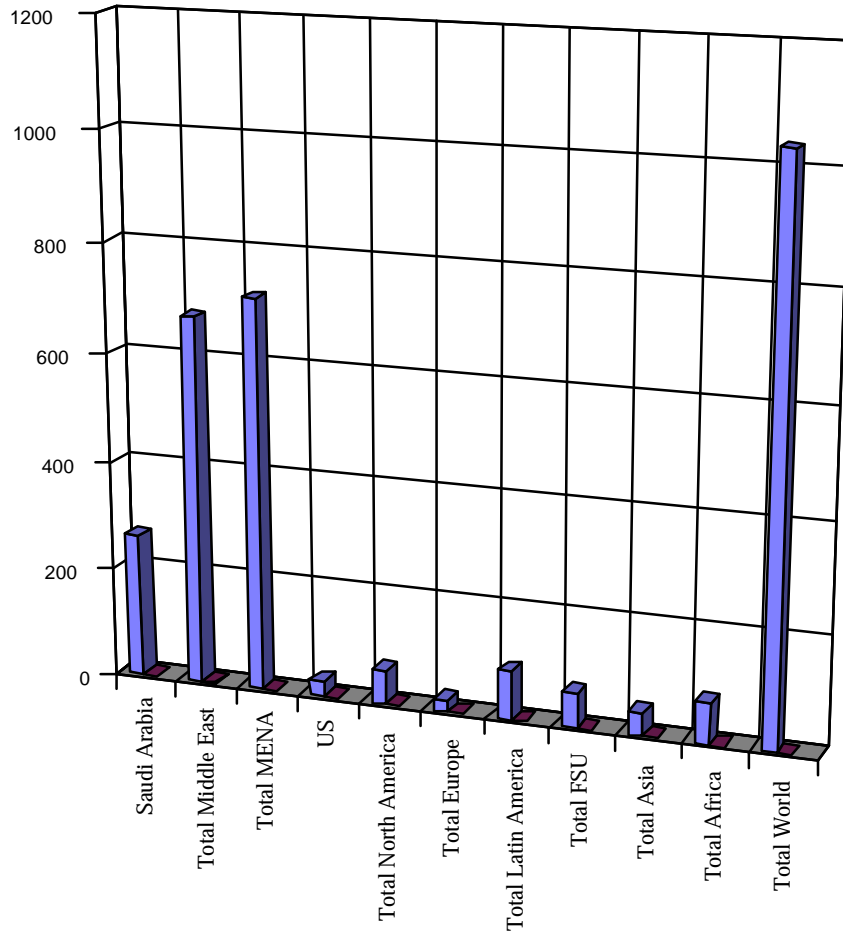
Comparative Oil Production Capacity (In Millions of Barrels Per Day)

Country	DOE/IEA Estimate of Maximum Sustainable Production Capacity							Actual Production	
	1990	1995	2000	2005	2010	2015	2020	1995	2000
Bahrain	-	-	-	-	-	-	-	-	-
Iran	3.2	3.9	3.9	4.0	4.3	4.6	4.8	3.7	3.7
Iraq	2.2	0.6	2.8	3.1	4.3	4.6	4.8	0.6	2.6
Kuwait	1.7	2.6	2.6	2.8	3.5	4.1	5.0	2.1	2.1
Oman	-	-	-	-	-	-	-	0.9	1.0
Qatar	0.5	0.6	0.6	0.5	0.6	0.7	0.7	0.5	0.7
Saudi Arabia	8.6	10.6	11.4	12.6	14.7	18.4	23.1	8.9	8.3
UAE	2.5	2.6	2.7	3.0	3.5	4.4	5.1	2.5	2.2
Total Gulf	18.7	20.9	24.0	26.0	30.4	36.9	44.5	19.6	21.1
Other Middle East	1.4	1.6	1.9	2.2	2.4	2.5	2.4	1.1	1.4
Algeria	1.3	1.4	1.4	1.9	2.1	2.3	2.5	1.3	0.81
Libya	1.5	1.5	1.5	2.1	2.5	2.8	3.2	1.4	1.41
Total North Africa	2.8	2.9	2.9	4.0	4.6	5.1	5.7	2.7	2.2
Total Middle East & North Africa	22.9	25.4	28.8	32.2	37.4	44.5	52.6	23.4	24.7
World	69.4	73.0	78.7	87.9	97.4	109.2	122.4	68.0	76.7
(Saudi Arabia as % Of World)	12.4%	14.5%	14.5%	14.3%	15.1%	16.6%	18.9%	13.0%	11.0%

Source: Adapted by Anthony H. Cordesman from estimates in IEA, Middle East Oil and Gas, Paris, OECD/IEA, 1995, Annex 2 and DOE/EIA, International Energy Outlook, 2001, Washington, DOE/EIA, and BPAmoco, Statistical Review of World Energy, 2000, June 2000, www.bpamoco.com/alive .

Chart 6.1

The Role of Saudi Reserves in Total World Reserves  
(in Billions of Barrels)



	Saudi Arabia	Total Middle East	Total MENA	US	Total North America	Total Europe	Total Latin America	Total FSU	Total Asia	Total Africa	Total World
■ Billions of Barrels	263.5	675.7	717.6	28.6	63.7	20.6	89.5	65.4	44	74.9	1033.8
■ % of World	25.50%	65.40%	69.50%	2.80%	6.20%	2.00%	8.60%	6.30%	4.30%	7.20%	100%
□ R/P Ratio	*87.5	*87	-	*10	*13.8	*8.3	*37.7	*24.2	*16.3	*28.2	*41

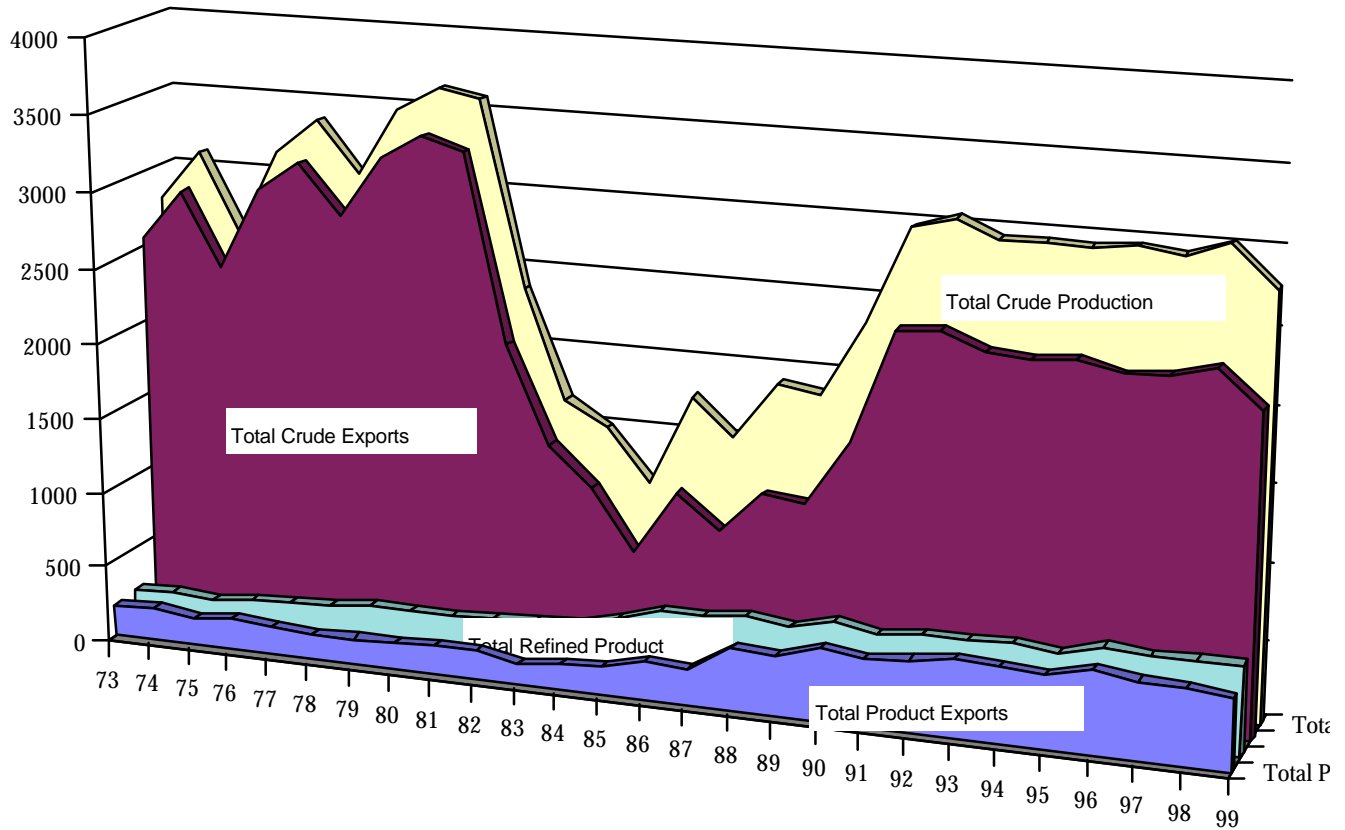
Source: BP Amoco, Statistical Review of World Energy, June 2000, [www.bpamoco.com/alive](http://www.bpamoco.com/alive).

Map 6.1

Saudi Oil Facilities

Chart 6.2.

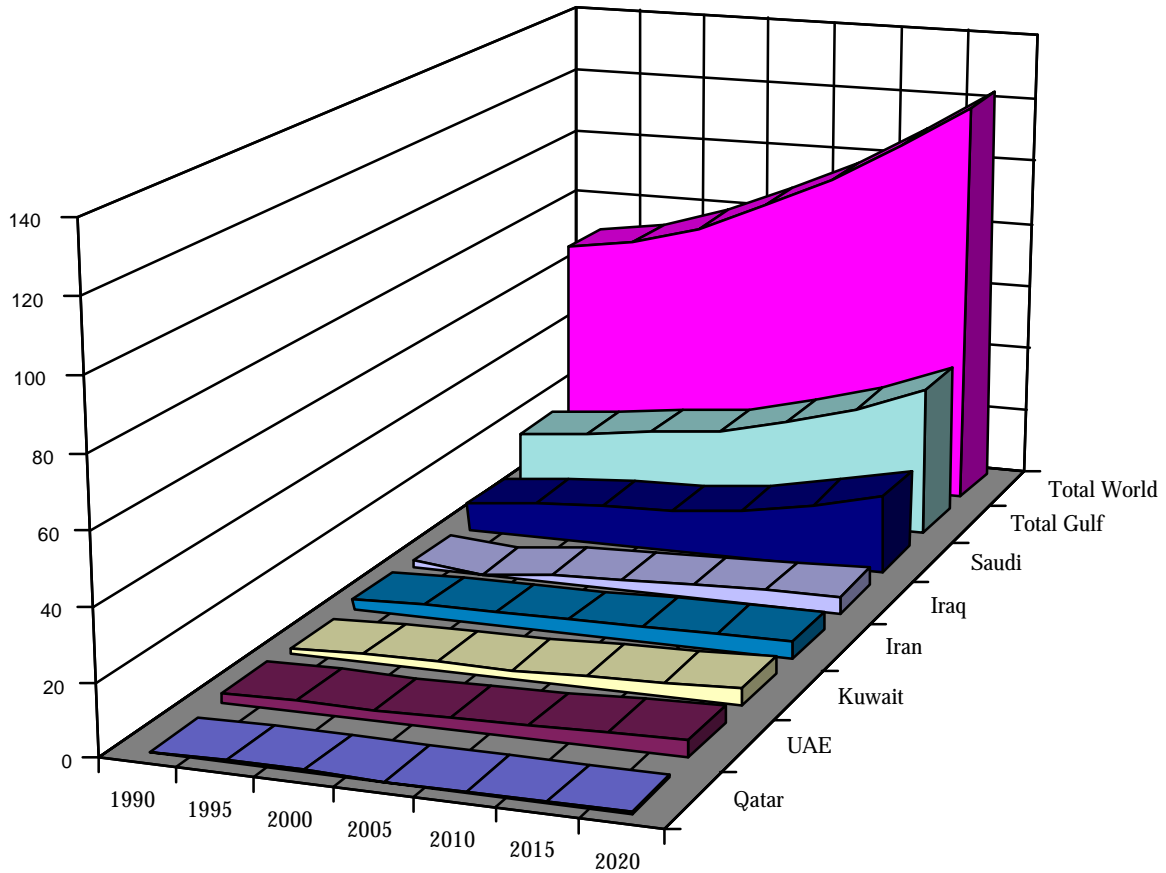
Saudi Oil Production: 1990-2000  
(in Billions of Barrels per Year)



Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, 36<sup>th</sup> Annual Report- 1421H (2000G), Riyadh, SAMA, 2001, pp. 401-404.

Chart 6.3.

The “Swing State:” Saudi Petroleum Production Capacity Relative to Gulf and World Capacity During 1973-2020 – Part One  
(EIA Reference Case in MMBD)

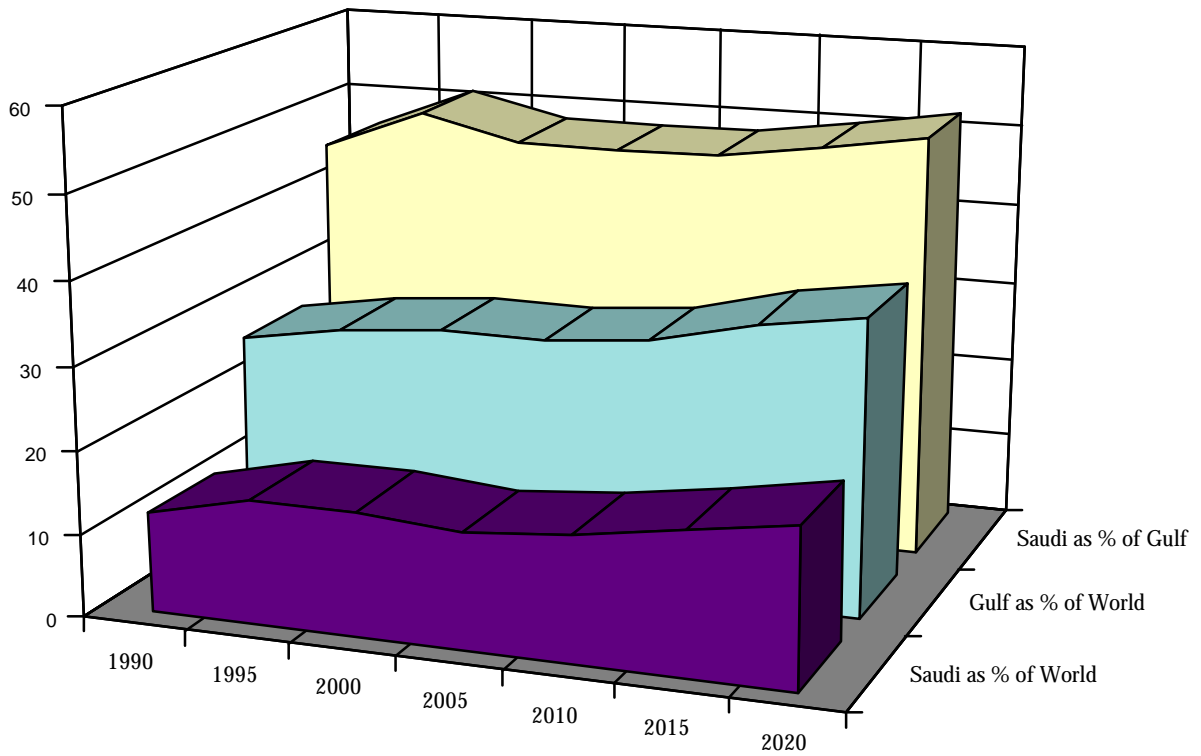


	1990	1995	2000	2005	2010	2015	2020
■ Qatar	0.5	0.6	0.6	0.5	0.6	0.7	0.7
■ UAE	2.5	2.6	2.7	3	3.5	4.4	5.1
■ Kuwait	1.7	2.6	2.6	2.8	3.5	4.1	5
■ Iran	3.2	3.9	3.9	4	4.3	4.6	4.8
■ Iraq	2.2	0.6	2.8	3.1	3.8	4.7	5.2
■ Saudi	8.6	10.6	11.4	12.6	14.7	18.4	23.1
■ Total Gulf	18.7	20.9	24	26	30.4	36.9	44.5
■ Total World	69.4	73	78.7	87.9	97.4	109.2	122.4

Source: Adapted by Anthony H. Cordesman from EIA, *International Energy Outlook, 1997*, DOE/EIA-0484 (97), April 1997, pp. 157-160; EIA, *International Energy Outlook, 2000*, DOE/EIA-0484 (2000), April 2000, Table D1; and EIA, *International Energy Outlook, 2001*, DOE/EIA-0484 (2001), March 2001, Table D1

Chart 6.4

The “Swing State:” Saudi Petroleum Production Capacity Relative to Gulf and World Capacity During 1973-2020 – Part Two  
(EIA Reference Case in MMB/D)

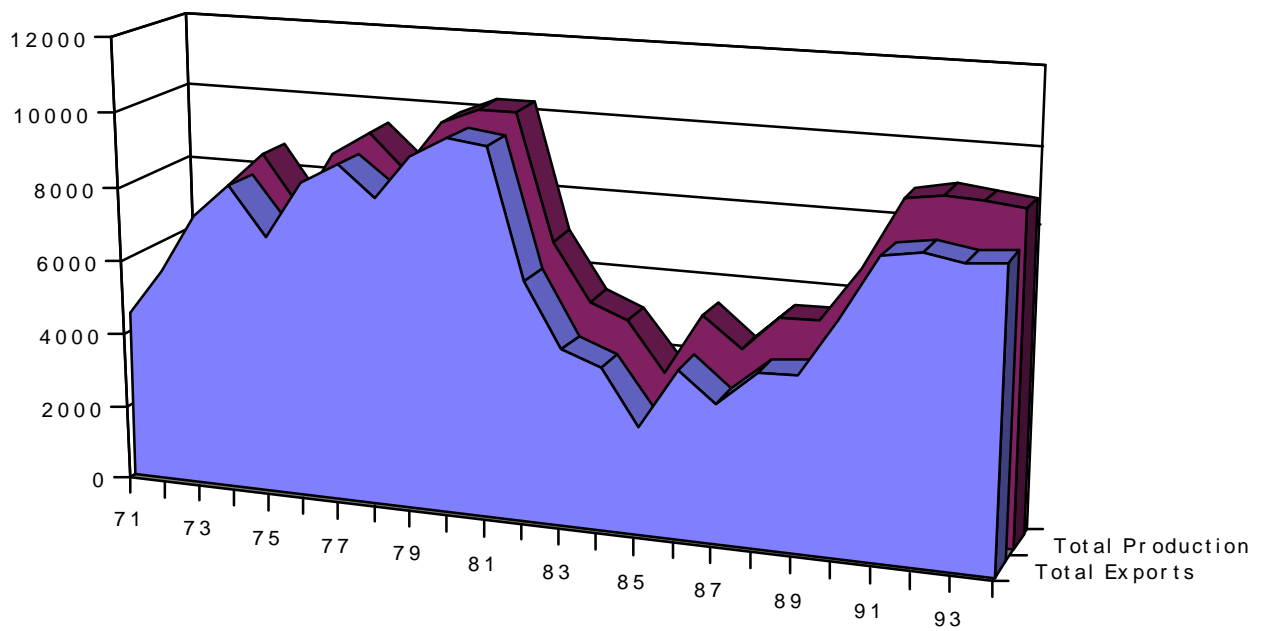


	1990	1995	2000	2005	2010	2015	2020
■ Saudi as % of World	12	15	15	14	15	17	19
■ Gulf as % of World	27	29	30	30	31	34	36
■ Saudi as % of Gulf	46	51	48	48	48	50	52

Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, 1997, DOE/EIA-0484 (97), April 1997, pp. 157-160; EIA, International Energy Outlook, 2000, DOE/EIA-0484 (2000), April 2000, Table D1; and EIA, International Energy Outlook, 2001, DOE/EIA-0484 (2001), March 2001, Table D1.

Chart 6.5

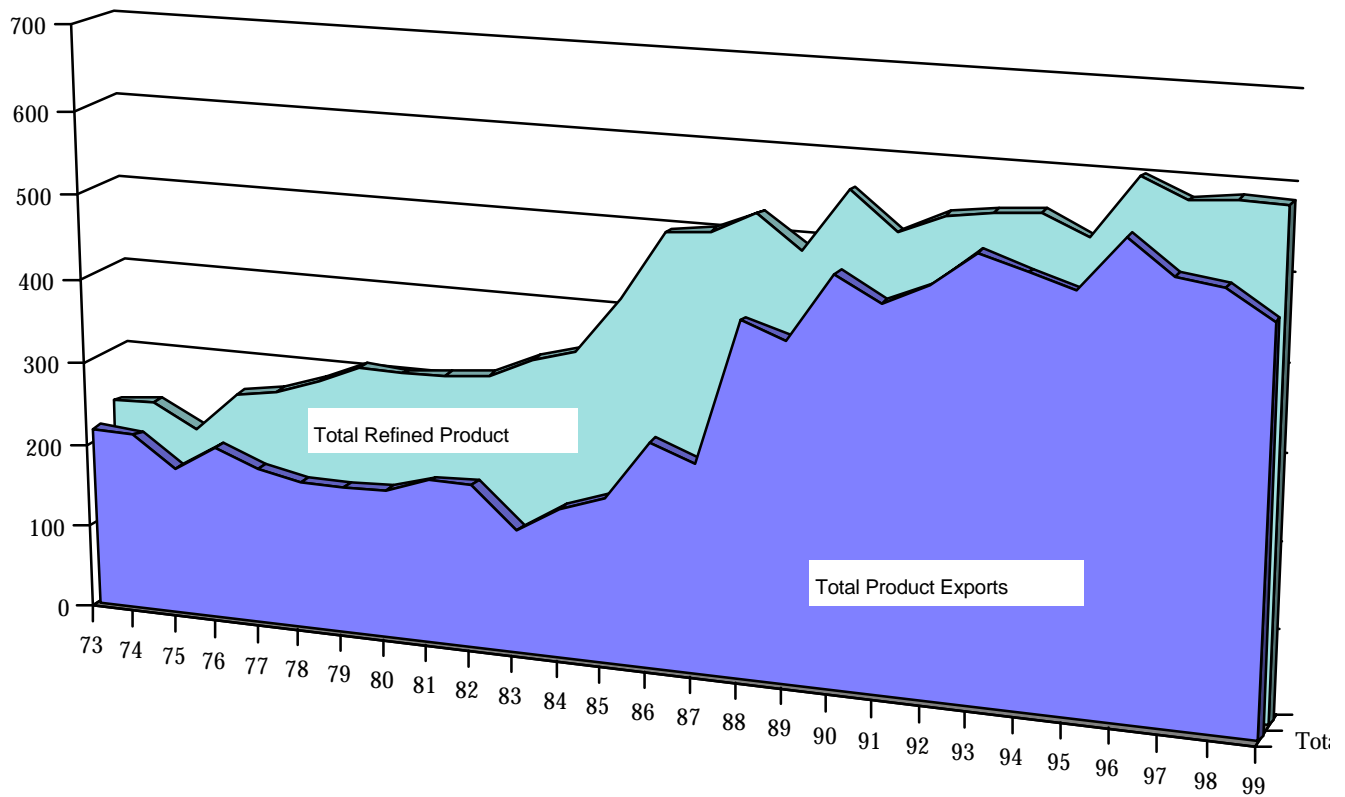
Saudi Arabia: The History of Saudi Oil and Natural Gas Liquids Total Production and Exports  
(in Thousands of Barrels Per Day)



Source: Adapted by Anthony H. Cordesman from International Energy Agency (IEA) Middle East Oil and Gas, Paris, 1995, pp. 307-317.

Chart 6.6

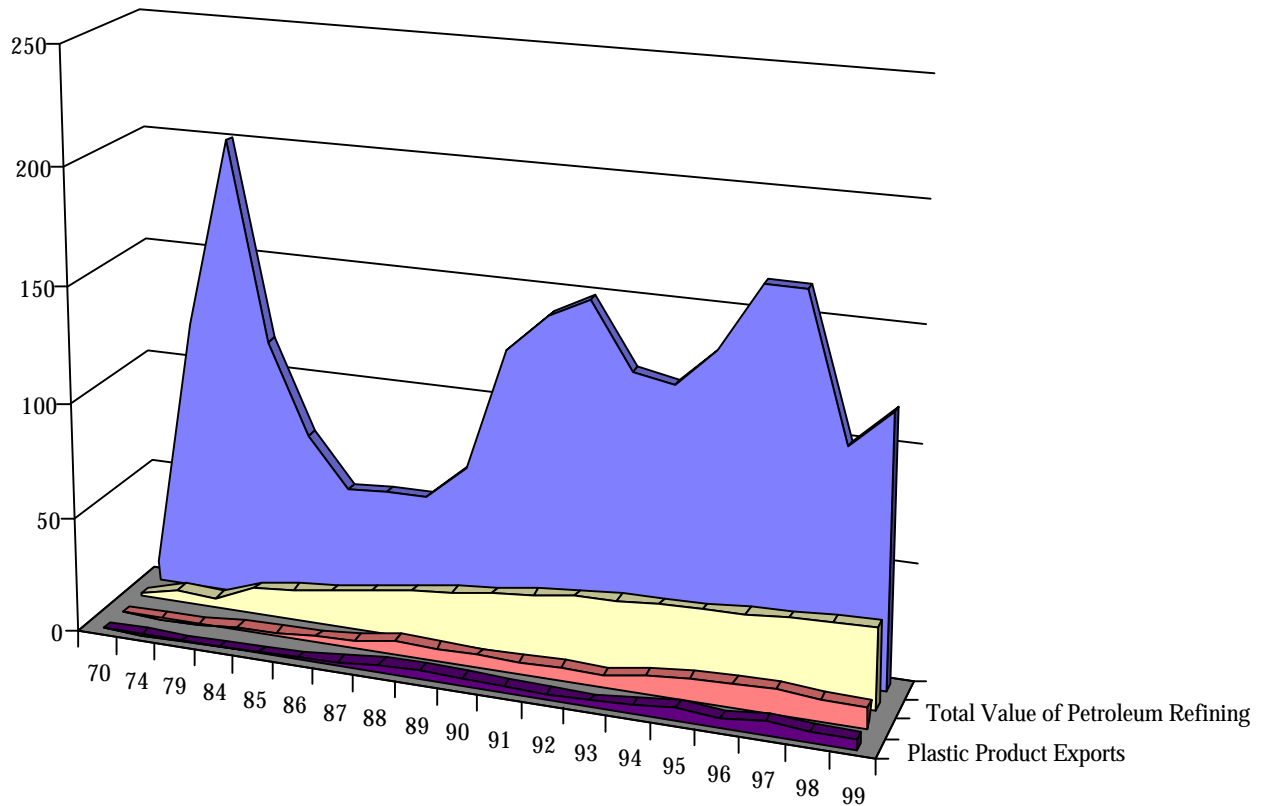
Saudi Product and Refinery Production: 1973-2000  
(in Billions of Barrels per Year)



Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, 36<sup>th</sup> Annual Report- 1421H (2000G), Riyadh, SAMA, 2001, pp. 401-404.

Chart 6.7

Value of Saudi Product and Refinery Production: 1970-2000  
(in Millions of Riyals)



	70	74	79	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
■ Plastic Product Exports	-	-	-	0.03	0.5	1.1	2.3	3.8	4.2	3.8	3.4	2.7	2.5	3.4	5.5	4.3	5.7	4.2	3.5
■ Chemical Product Exports	-	-	-	1.5	2.2	2.9	3.8	6.3	5.6	5.7	5.5	5.7	5.8	7.9	10.2	10.4	11	9.9	9.2
□ Total Value of Petroleum Refi	1.4	5.8	4.6	11.6	13.8	15.9	18.3	20.9	22.7	25.1	26.9	28.8	30.2	31.1	31.5	32.2	33.4	33.9	34.4
■ Product Exports	9.1	119	200	115	75.6	54.3	55.2	55.1	70.6	123	140	148	120	117	133	163	163	100	117

Source: Adapted by Anthony H. Cordesman from Saudi Arabian Monetary Agency, 36<sup>th</sup> Annual Report- 1421H (2000G), Riyadh, SAMA, 2001, pp. 344-345; Ministry of Planning, Achievements of the Development Plans, 1390-1420 (1970-2000). Riyadh, Ministry of Planning, 2001, Table 29.

Table 6.2Gulf and World Gas Reserves and Production

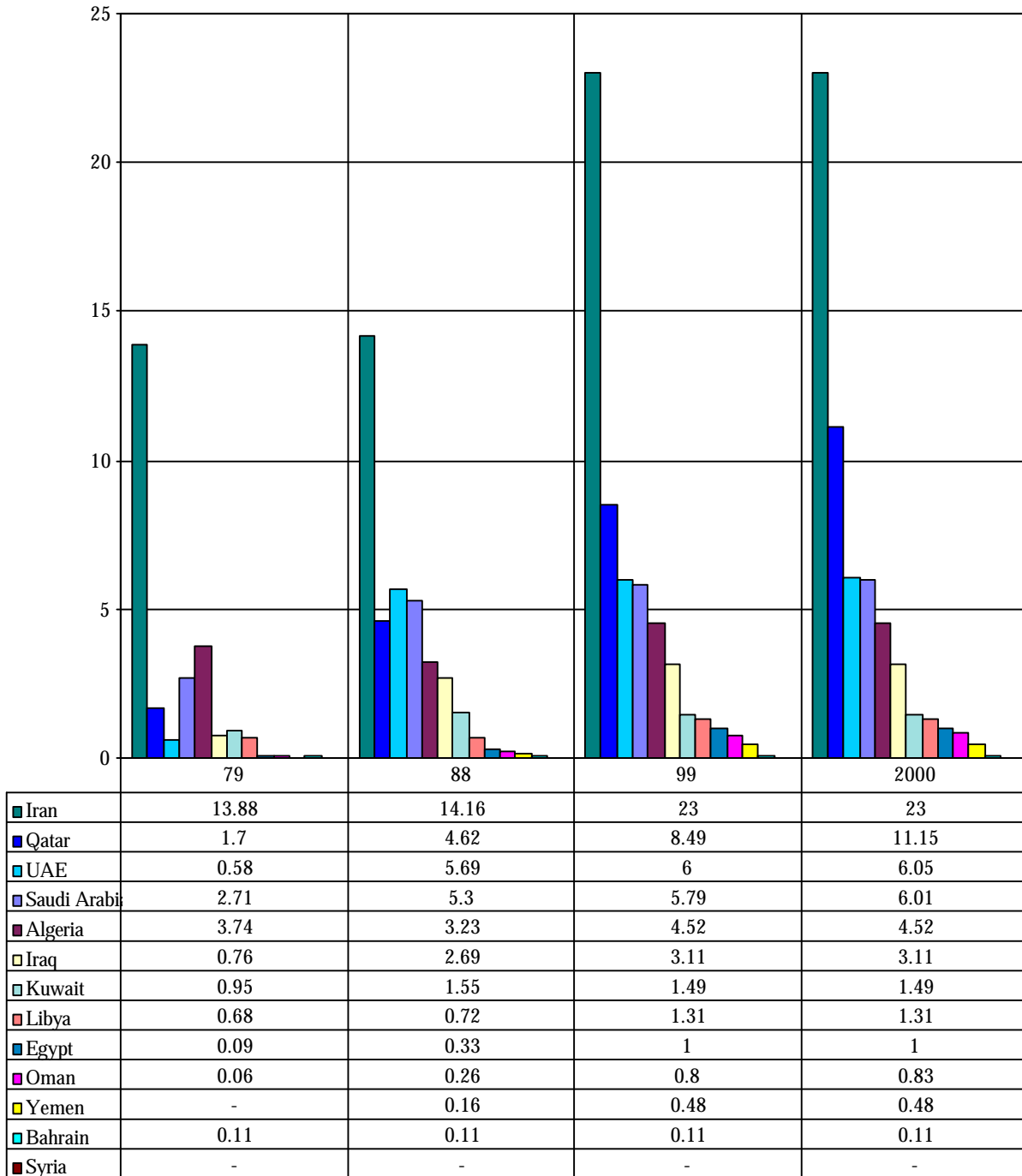
<u>Nation</u>	<u>Reserves in 2000</u>		<u>Percent of World Supply</u>	<u>Production in 2000 - % of World)</u>	
	<u>TCF</u>	<u>TCM</u>			
Bahrain		3.9	0.11	0.1%	0.4%
Iran		812.3	23.0	15.3%	2.5%
Iraq		109.8	3.11	2.1%	-
Kuwait		52.7	1.49	1.0%	0.4%
Oman		29.3	0.83	0.6%	0.4%
Qatar		393.8	11.15	7.4%	1.9%
Saudi Arabia		213.8	6.05	4.0%	1.2%
UAE		212.1	6.01	4.0%	1.6%
Gulf		1,827.7	51.75	34.5%	-
Total Middle East		1,854.8	52.52	35.0%	8.7%
Algeria		159.7	4.52	3.0%	3.7%
Libya		46.4	1.31	0.9%	0.2%
Total MENA		1,722.4		34.6%	-
Russia		1,700.0	48.14	32.1%	22.5%
US		167.4	4.74	3.2%	3.7%
EU		114.5	3.24	2.2%	8.8%
Asia/Pacific		365.1	10.33	6.8%	4.9%
World Total		5,304.0	150.19	100.0%	100%

Source: The reserve and production data are adapted by Anthony H. Cordesman from British Petroleum, BP Statistical Review of World Energy, 2001, London, June 2001, pp. 20-23

Chart 6.8

Saudi Arabia vs. Total Proven Gas Reserves of the Other Gulf States 1979-1999: BP Estimate

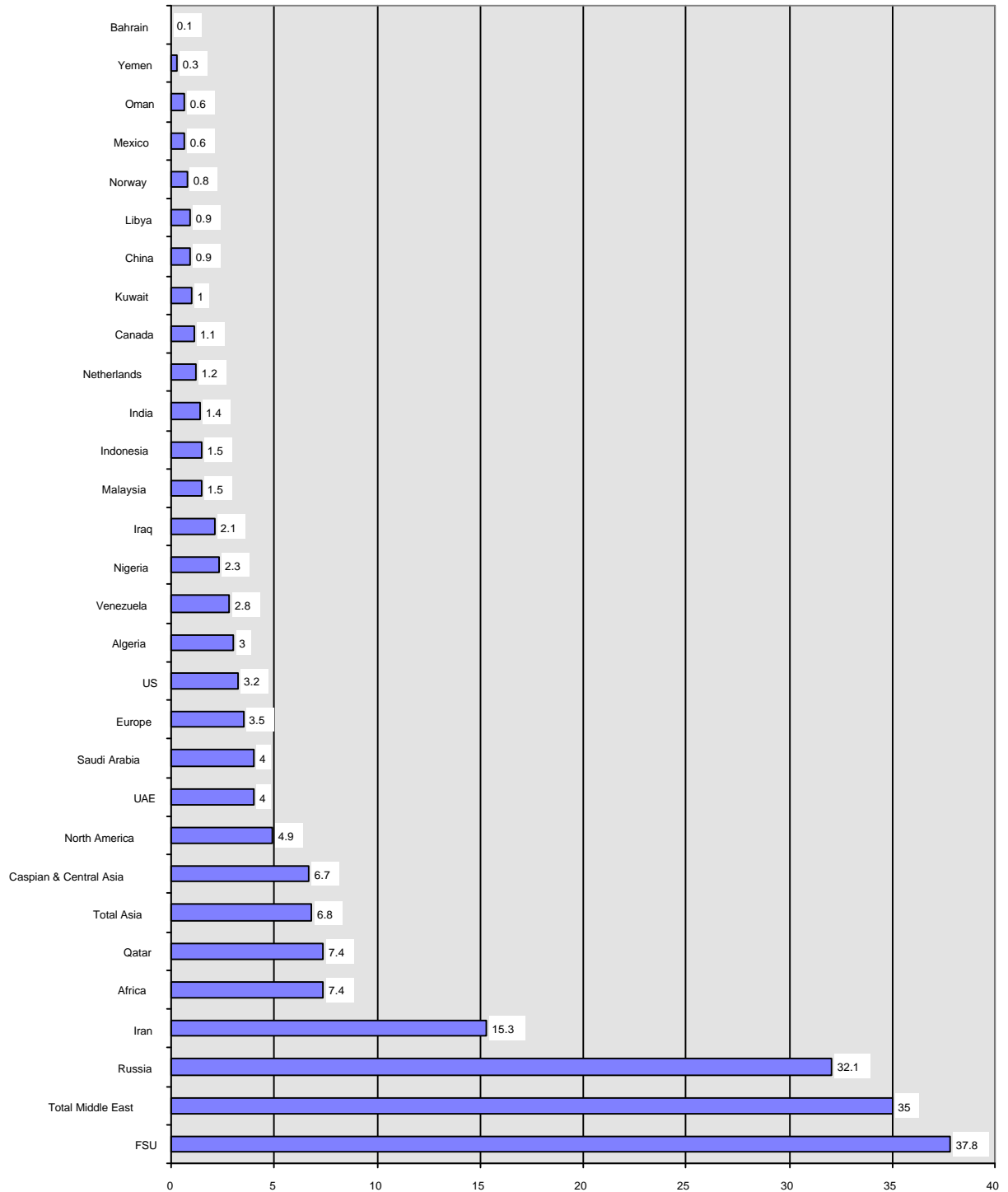
(In Trillions of Cubic Meters)



Source: British Petroleum, BP Statistical Review of World Energy, 2001, London, June 2001, pp. 20-21.

Chart 6.9

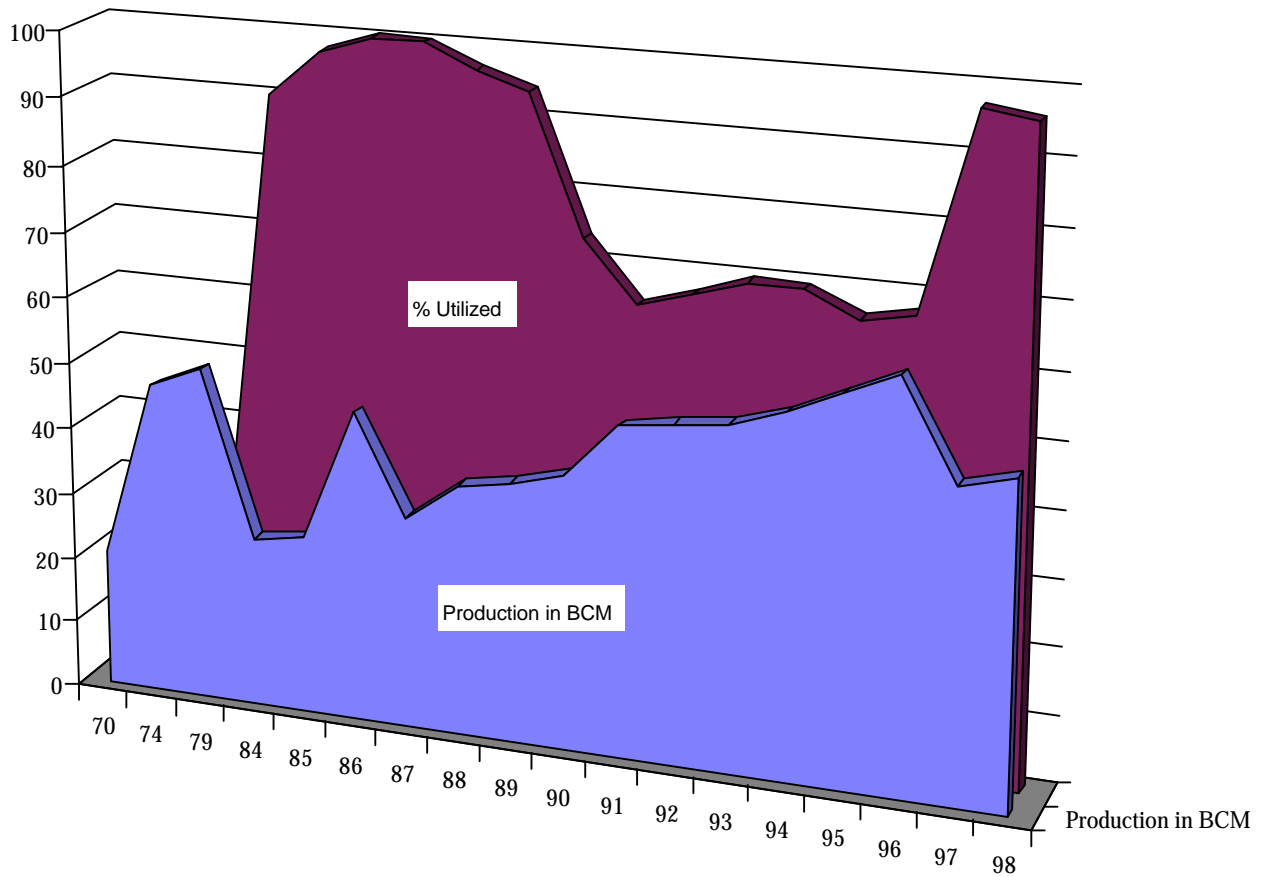
Saudi Arabia vs. Other States as Percent of Total Proven World Gas Reserves in 2000



Source: British Petroleum, BP Statistical Review of World Energy, 2001, London, June 2001, pp. 20-21.

Chart 6.10

Saudi Gas Production and Utilization: 1970-2000  
(in Billions of Cubic Meters)

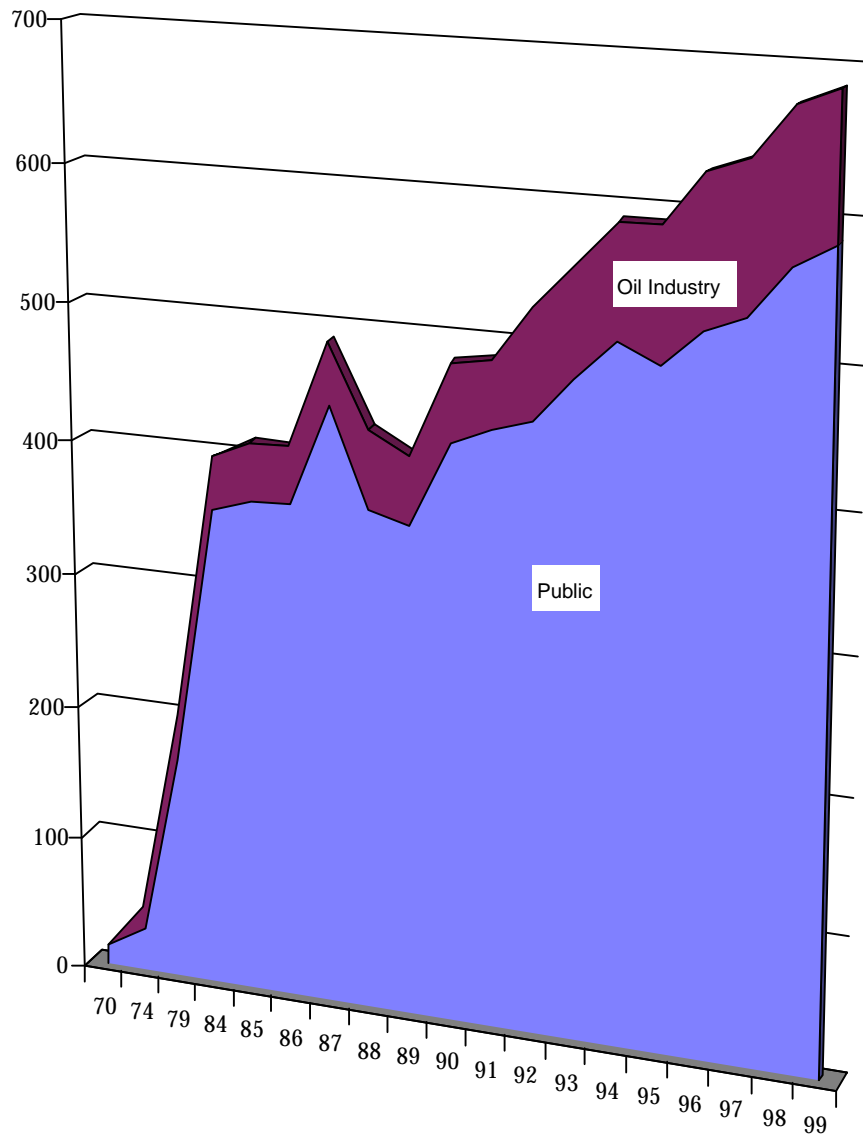


	70	74	79	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98
■ Production in BCM	10.6	47.3	50.6	25.7	26.8	46.9	32	37.7	39.1	41.4	49.5	50.7	51.6	54.3	57.8	61.3	46.6	48.9
■ % Utilized	11	13.1	23.1	90.4	97.4	100	100	96.5	94	73.7	64.6	67.1	69.6	69.4	65.8	67.4	97.2	95.8

Source: Adapted by Anthony H. Cordesman from Saudi Ministry of Planning, Achievements of the Development Plans, 1390-1420 (1970-2000). Riyadh, Ministry of Planning, 2001, Table 53.

Chart 6.11

Saudi Domestic Consumption of Refined Products and Natural Gas: 1970-2000  
(in Millions of US Barrels)

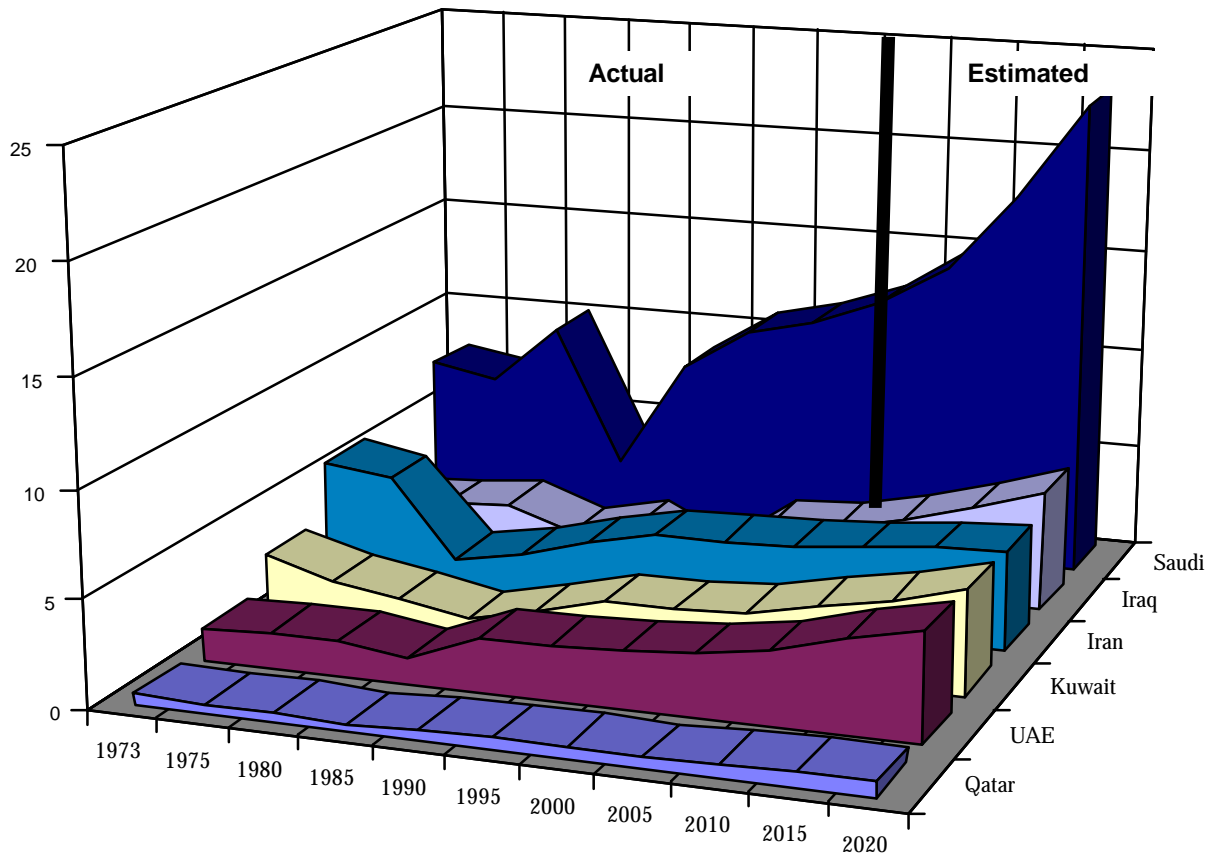


	70	74	79	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
■ Oil Industry	-	17.5	33.9	38.5	42.7	41.6	45.4	56.3	51	56.1	48.4	79	78.8	82.2	96.5	106.5	105.8	107.2	101.9
■ Public	15.5	32	165.8	356.8	366.4	367.5	441.7	370.8	361.1	424.8	437.2	445.3	478.1	505.5	491.8	519	531	566.7	583.4

Source: Adapted by Anthony H. Cordesman from Saudi Ministry of Planning, Achievements of the Development Plans, 1390-1420 (1970-2000). Riyadh, Ministry of Planning, 2001, Table 53.

Chart 612.

The “Swing State:” Saudi Petroleum Production Capacity Relative to Gulf and World Capacity During 1973-2020  
(EIA Reference Case in MMBD)



	1973	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
■ Qatar	0.57	0.438	0.472	0.301	0.5	0.6	0.6	0.5	0.6	0.7	0.7
■ UAE	1.533	1.644	1.709	1.193	2.5	2.6	2.7	3	3.5	4.4	5.1
■ Kuwait	3.02	2.084	1.656	1.023	1.7	2.6	2.6	2.8	3.5	4.1	5
■ Iran	5.8	5.35	1.662	2.25	3.2	3.9	3.9	4	4.3	4.6	4.8
■ Iraq	2.018	2.262	2.514	1.433	2.2	0.6	2.8	3.1	3.8	4.7	5.8
■ Saudi	7.596	7.075	9.9	3.388	8.5	10.6	11.4	12.6	14.7	18.4	23.1

Total Gulf	-	18.7	-	24.0	26.0	30.4	36.9	44.5
Saudi Arabia as % of Total	-	44.4	-	47.5	48.5	48.4	49.9	51.9
Total OPEC	-	27.2	-	34.2	38.5	44.3	52.5	62.4
Total World	-	69.4	-	78.7	87.9	97.4	109.2	122.4
Saudi Arabia as % of Total	-	12.2	-	14.5	14.3	15.1	16.8	18.9

Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, 1997, DOE/EIA-0484 (97), April 1997, pp. 157-160, and EIA, International Energy Outlook, 2001, DOE/EIA-0484 (2001), March 2001, Table D1.

Table 6.3

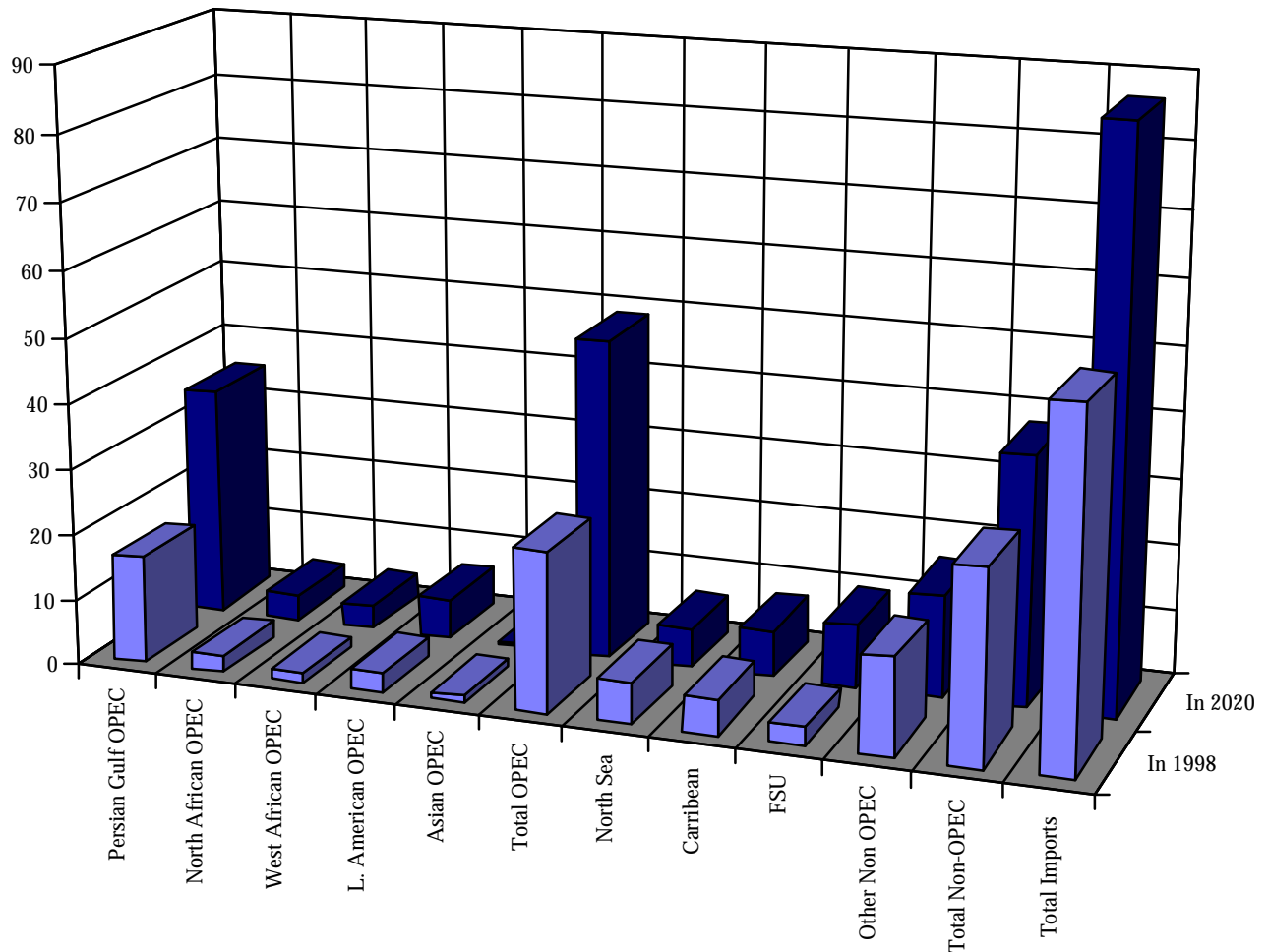
**Estimated Trends in World Oil Exports By Supplier and Destination**  
(Millions of Barrels Per Day)

Exporting Region	Importing Region								Total World
	Industrialized				Non-Industrialized				
	North America	Western Europe	Asia	Total Industrial World	Pacific Rim	China	Rest of Non- Industrial World	Total Non- Industrial World	
-									
<u>1998</u>									
<u>OPEC</u>									
Persian Gulf	2.2	4.0	4.1	10.3	4.2	0.4	1.3	5.9	<b>16.2</b>
North Africa	0.4	2.0	0.0	2.4	0.0	0.0	0.1	0.1	<b>2.5</b>
West Africa	0.8	0.5	0.0	1.3	0.1	0.0	0.1	0.2	<b>1.5</b>
South America	1.8	0.2	0.0	2.0	0.1	0.0	0.9	1.0	<b>3.0</b>
Asia	0.1	0.0	0.8	0.9	0.1	0.0	0.0	0.1	<b>1.0</b>
Total OPEC	5.2	6.7	5.0	16.9	4.6	0.4	2.4	7.4	<b>24.3</b>
<u>Non-OPEC</u>									
North Sea	0.7	5.6	0.0	6.3	0.0	0.0	0.0	0.0	<b>6.3</b>
Caribbean Basin	2.4	0.5	0.0	3.0	0.2	0.0	2.1	2.3	<b>5.3</b>
FSU	0.0	2.6	0.0	2.7	0.1	0.0	0.1	0.2	<b>2.9</b>
Other Non-OPEC	2.7	2.0	0.5	5.2	7.7	0.5	1.3	9.5	<b>14.7</b>
Total Non-OPEC	5.8	10.7	0.6	17.1	8.0	0.5	3.5	12.0	<b>29.1</b>
<b>World Total</b>	<b>11.0</b>	<b>17.4</b>	<b>5.5</b>	<b>34.0</b>	<b>12.6</b>	<b>0.9</b>	<b>5.9</b>	<b>19.3</b>	<b>43.3</b>
<u>2020</u>									
<u>OPEC</u>									
Persian Gulf	4.7	3.7	4.8	13.2	8.2	5.3	8.3	21.8	<b>35.0</b>
North Africa	0.5	2.6	0.0	3.0	0.1	0.0	0.6	0.8	<b>3.8</b>
West Africa	0.9	1.2	0.3	2.4	0.1	0.0	1.1	1.2	<b>3.6</b>
South America	3.2	0.5	0.1	3.8	0.2	0.0	1.9	2.1	<b>5.9</b>
Asia	0.1	0.0	0.1	0.2	0.2	0.0	0.0	0.2	<b>0.4</b>
Total OPEC	9.4	7.9	5.4	22.6	8.9	5.3	11.9	26.0	<b>48.6</b>
<u>Non-OPEC</u>									
North Sea	0.7	5.1	0.0	5.8	0.1	0.0	0.0	0.1	<b>5.9</b>
Caribbean Basin	4.3	0.4	0.1	4.8	0.2	0.0	2.1	2.2	<b>7.0</b>
FSU	0.4	4.4	0.2	5.0	3.6	0.6	0.2	4.4	<b>9.4</b>
Other Non-OPEC	3.2	2.0	0.2	5.4	7.7	0.8	1.5	10.0	<b>15.4</b>
Total Non-OPEC	8.5	12.0	0.5	21.0	11.6	1.4	3.8	16.8	<b>37.8</b>
<b>World Total</b>	<b>18.0</b>	<b>19.8</b>	<b>5.9</b>	<b>43.7</b>	<b>20.4</b>	<b>6.7</b>	<b>15.7</b>	<b>42.8</b>	<b>86.5</b>

Source: Adapted by Anthony H. Cordesman from estimates in EIA, International Energy Outlook, 2001, DOE/EIA-0484 (2001), March 2001, Table D1

Chart 6.13

The Rising Importance of Saudi and Gulf Exports in Meeting World Demand: 1998 versus 2020  
(EIA Reference Case in MMBD)



	Persian Gulf OPEC	North African OPEC	West African OPEC	L. American OPEC	Asian OPEC	Total OPEC	North Sea	Carribean	FSU	Other Non OPEC	Total Non-OPEC	In
■ In 1998	16.2	2.5	1.5	3	1	24.3	6.3	5.3	2.9	14.7	29.1	
■ In 2020	35	3.8	3.6	5.9	0.4	48.6	5.9	7	9.4	15.4	37.8	

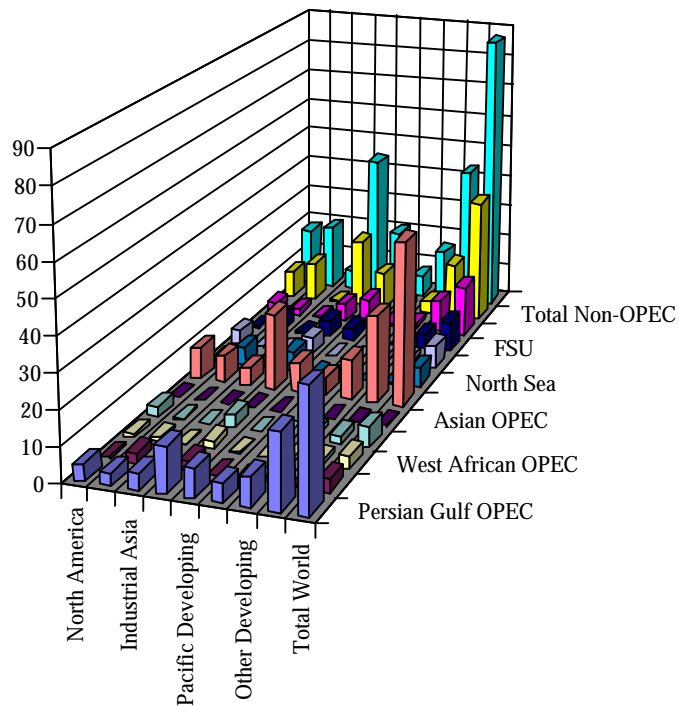
Total Gulf	-	18.7	-	24.0	26.0	30.4	36.9	44.5
Saudi Arabia as % of Total	-	44.4	-	47.5	48.5	48.4	49.9	51.9
Total OPEC	-	27.2	-	34.2	38.5	44.3	52.5	62.4
Total World	-	69.4	-	78.7	87.9	97.4	109.2	122.4
Saudi Arabia as % of Total	-	12.2	-	14.5	14.3	15.1	16.8	18.9

Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, 1997, DOE/EIA-0484 (97), April 1997, pp. 157-160, and EIA, International Energy Outlook, 2001, DOE/EIA-0484 (2001), March 2001, Table D1.

Chart 6.14

The Globalization of Oil Exports in 2020

(in MMBD)

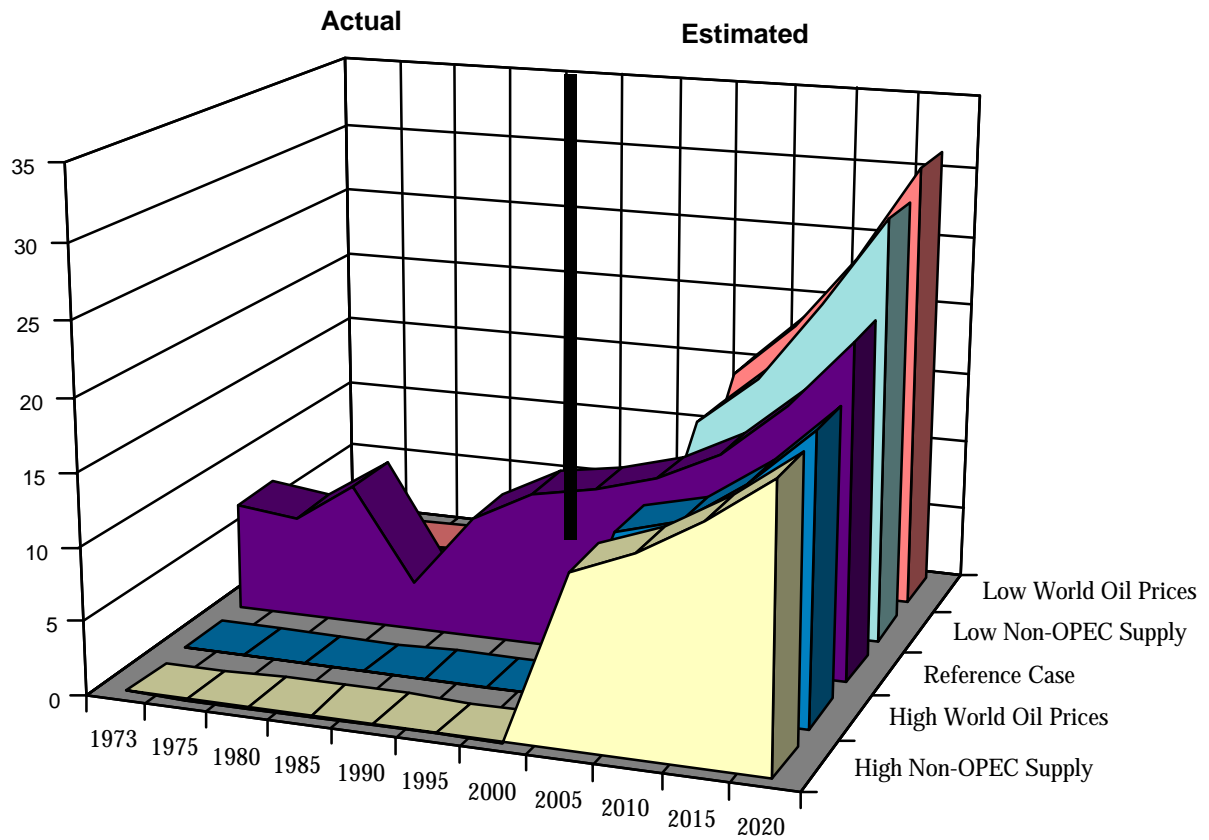


	North America	Western Europe	Industrial Asia	Total Industrial	Pacific Developing	China	Other Developing	Total Developing	Total World
■ Persian Gulf OPEC	4.7	3.7	4.8	13.2	8.2	5.3	8.3	21.8	35
■ North African OPE	0.5	2.6	0	3	0.1	0	0.6	0.8	3.8
□ West African OPEC	0.9	1.2	0.3	2.4	0.1	0	1.1	1.2	3.6
□ L. American OPEC	3.2	0.5	0.1	3.8	0.2	0	1.9	2.1	5.9
■ Asian OPEC	0.1	0	0.1	0.2	0.2	0	0	0.2	0.4
■ Total OPEC	9.4	7.9	5.4	22.6	8.9	5.3	11.9	26	48.6
■ North Sea	0.7	5.1	0	5.8	0.1	0	0	0.1	5.9
□ Carribean	4.3	0.4	0.1	4.8	0.2	0	2.1	2.2	7
■ FSU	0.4	4.4	0.2	5	3.6	0.6	0.2	4.4	9.4
■ Other Non OPEC	3.2	2	0.2	5.4	7.7	0.8	1.5	10	15.4
■ Total Non-OPEC	8.5	12	0.5	21	11.6	1.4	3.8	16.8	37.8
■ Total Imports	18	19.8	5.9	43.7	20.4	6.7	15.7	42.8	86.5

Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, 2001, DOE/EIA-0484 (2001), March 2001, Table 13.

Chart 6.15

EIA Estimate of Different Levels of Saudi Production Capacity Resulting from Different Market and Production Strategy Conditions  
(EIA Reference Case in MMB/D)



	1973	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
High Non-OPEC Supply								11.7	13.3	15.9	18.9
High World Oil Prices								11.6	12.7	15.6	19.5
Reference Case	7.596	7.075	9.9	3.388	8.5	10.6	11.4	12.6	14.7	18.4	23.1
Low Non-OPEC Supply								14.1	17.7	23.2	29.3
Low World Oil Prices								15.4	19.3	24.4	31.1

Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, 1997, DOE/EIA-0484 (97), April 1997, pp. 157-160, and EIA, International Energy Outlook, 2001, DOE/EIA-0484 (2001), March 2001, Table D1.

