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**The Economic and
Demographic Challenges to
Saudi Stability**

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Arleigh A. Burke Chair for Strategy
Center for Strategic and International Studies

May 2001

The CSIS “Saudi Arabia Enters the 21st 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.

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.

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Part One

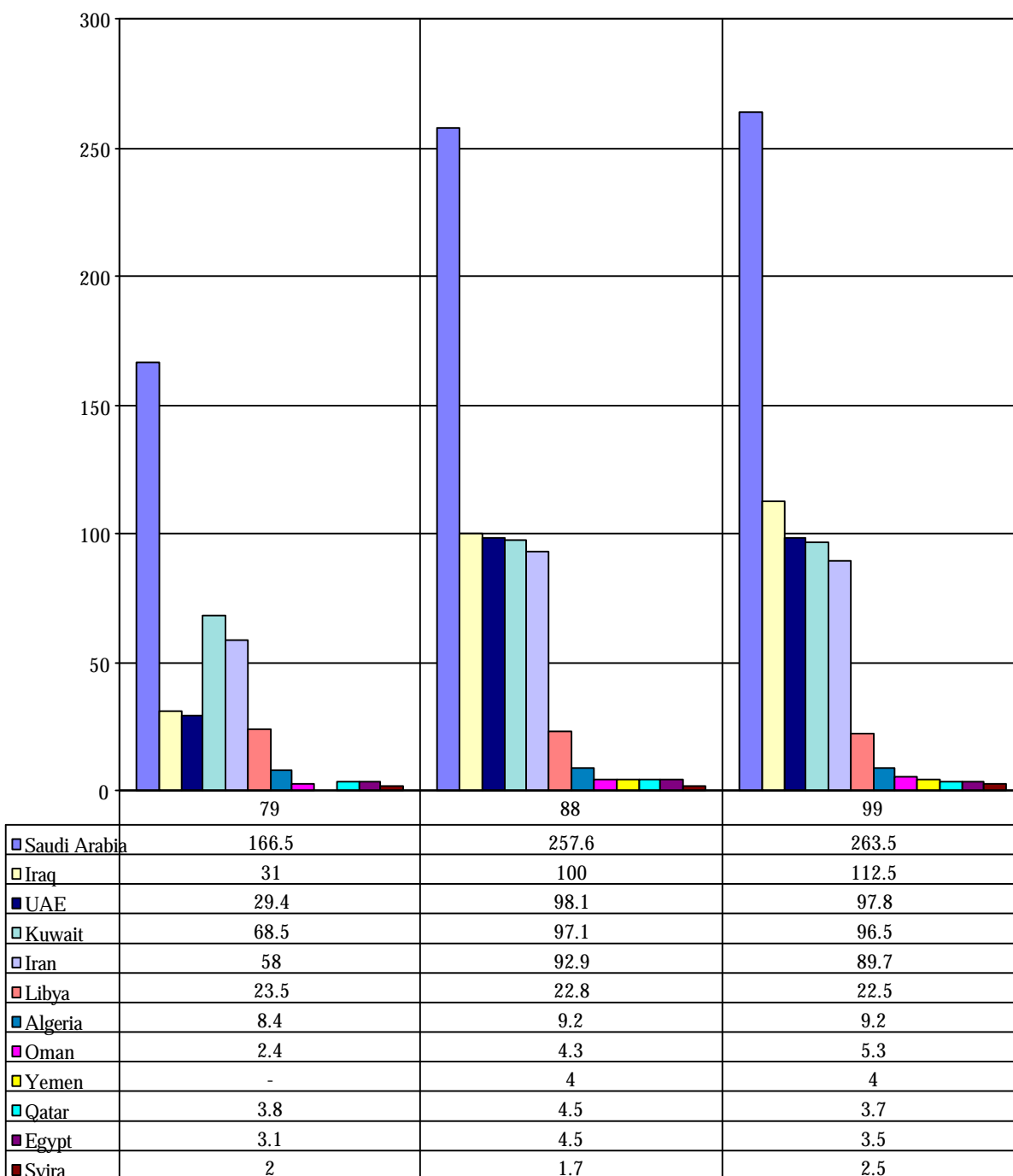
Setting the Stage: Saudi Energy Resources and Production

Saudi Arabia



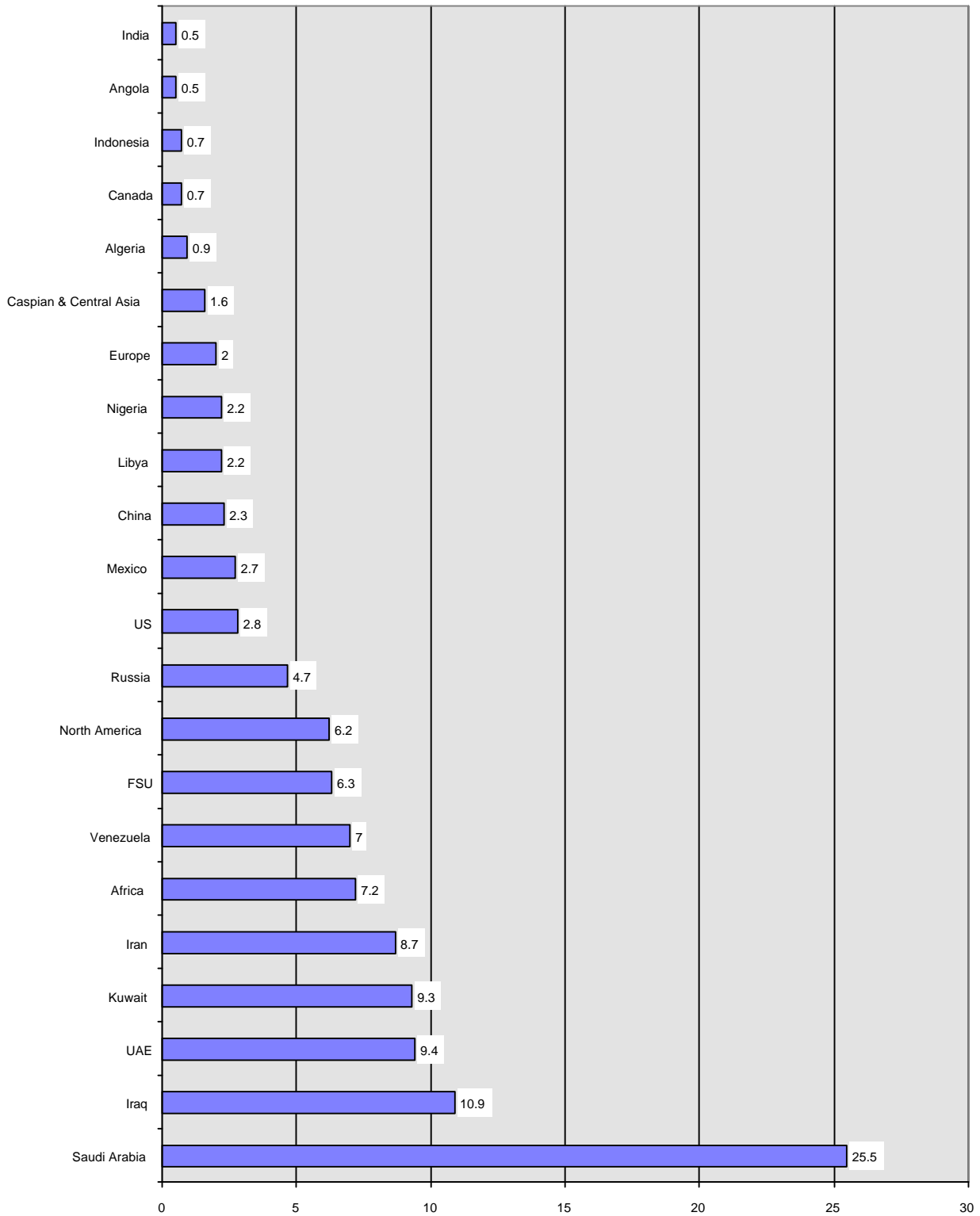
Saudi Arabia vs. Total Proven Oil Reserves of the Other Gulf States 1979-1999: BP Estimate

(in Billions of Barrels)



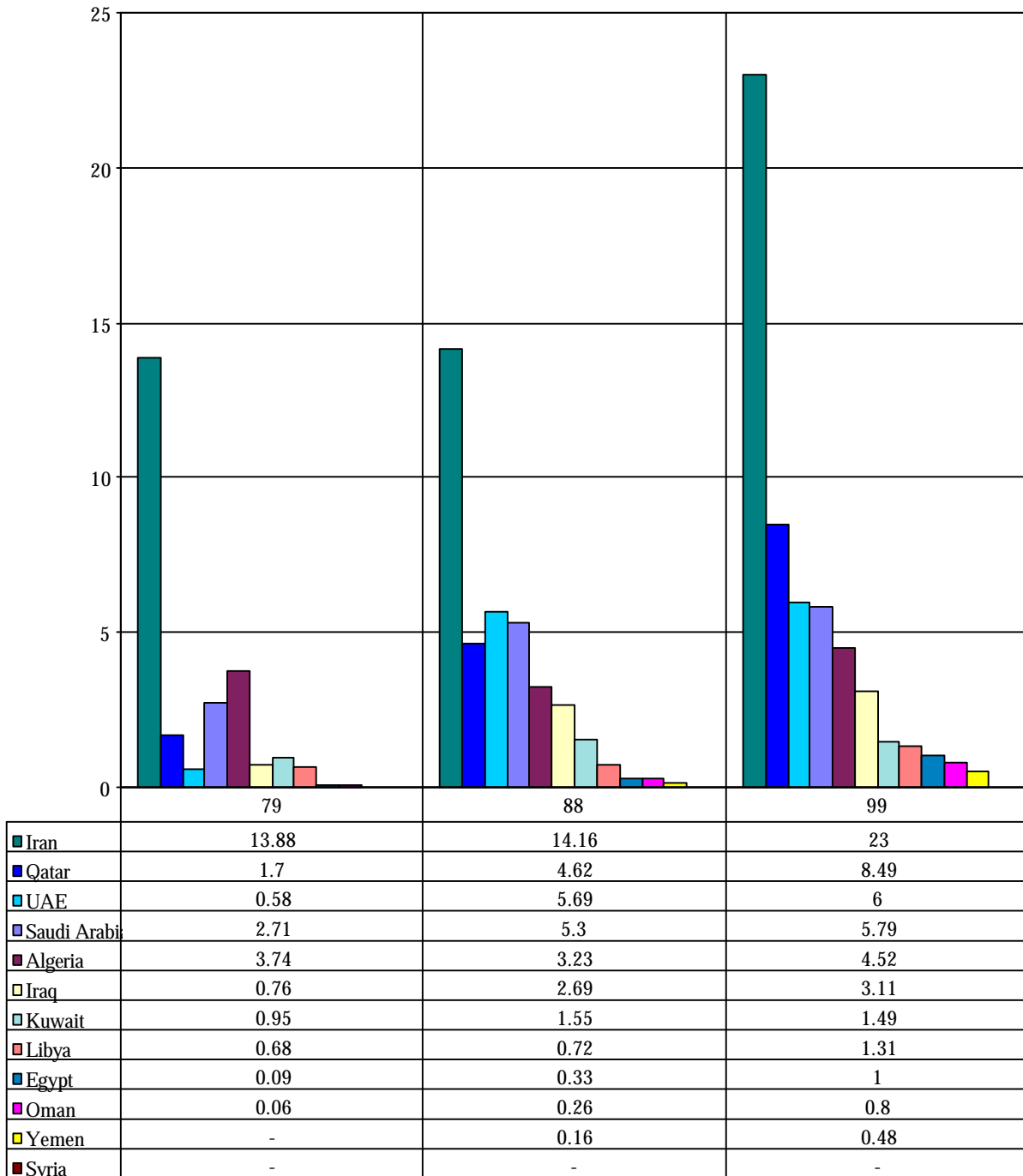
Source: BPAmoco, Statistical Review of World Energy, June 2000, pp. 4-5.

Saudi Arabia vs. Other States as Percent of Total Proven World Oil Reserves in 1999



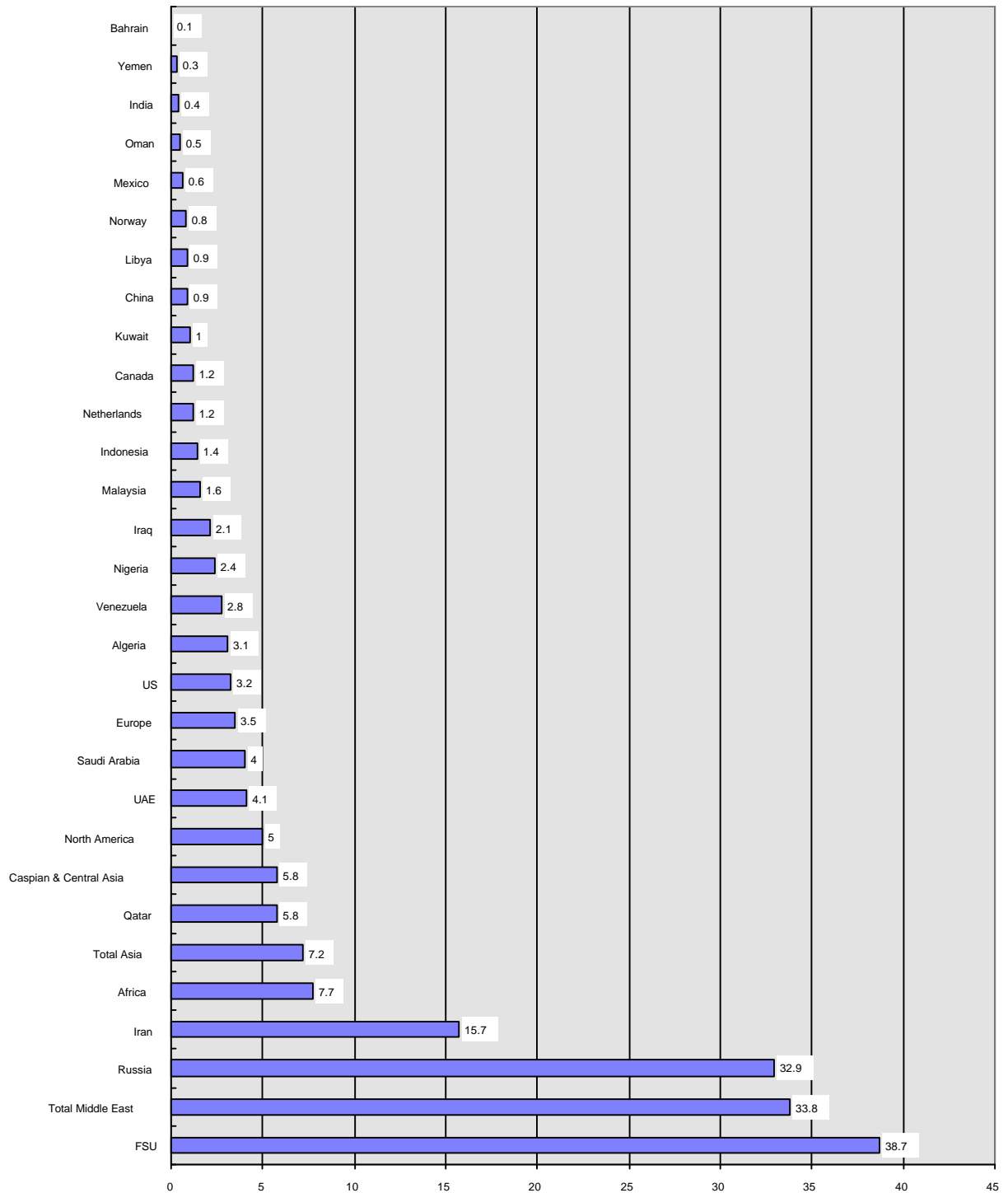
Source: BPAmoco, Statistical Review of World Energy, June 2000, pp. 4-5.

Saudi Arabia vs. Total Proven Gas Reserves of the Other Gulf States 1979-1999: BP Estimate (in Trillions of Cubic Meters)



Source: BPAmoco, Statistical Review of World Energy, June 2000, pp. 20-21.

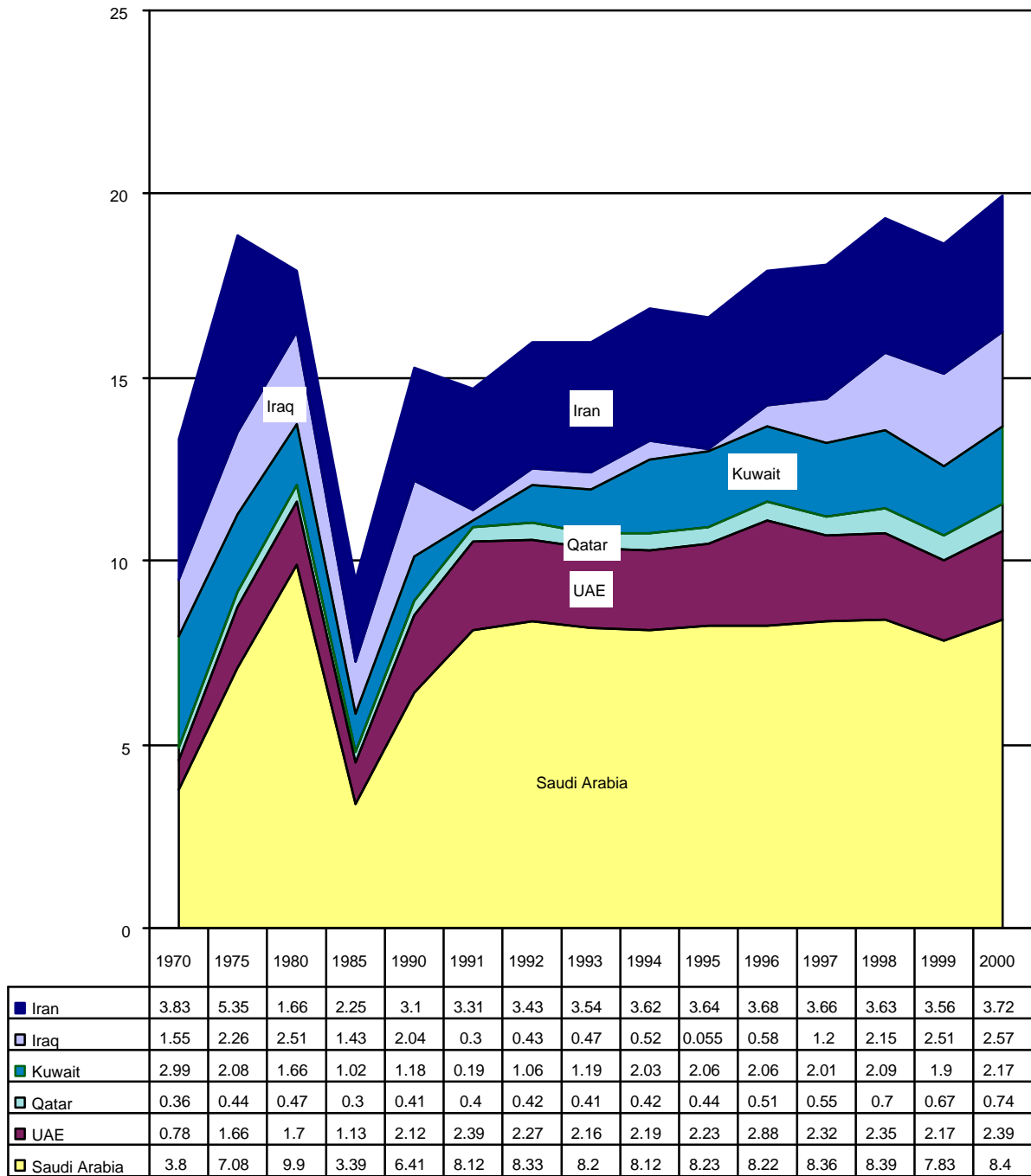
Saudi Arabia vs. Other States as Percent of Total Proven World Gas Reserves in 1999



Source: BPAmoco, Statistical Review of World Energy, June 2000, pp. 20-21.

Living With Uncertainty: Historical Trends in Gulf Oil Production: 1970-1997

Thousands of Barrels per Day Including Condensate)

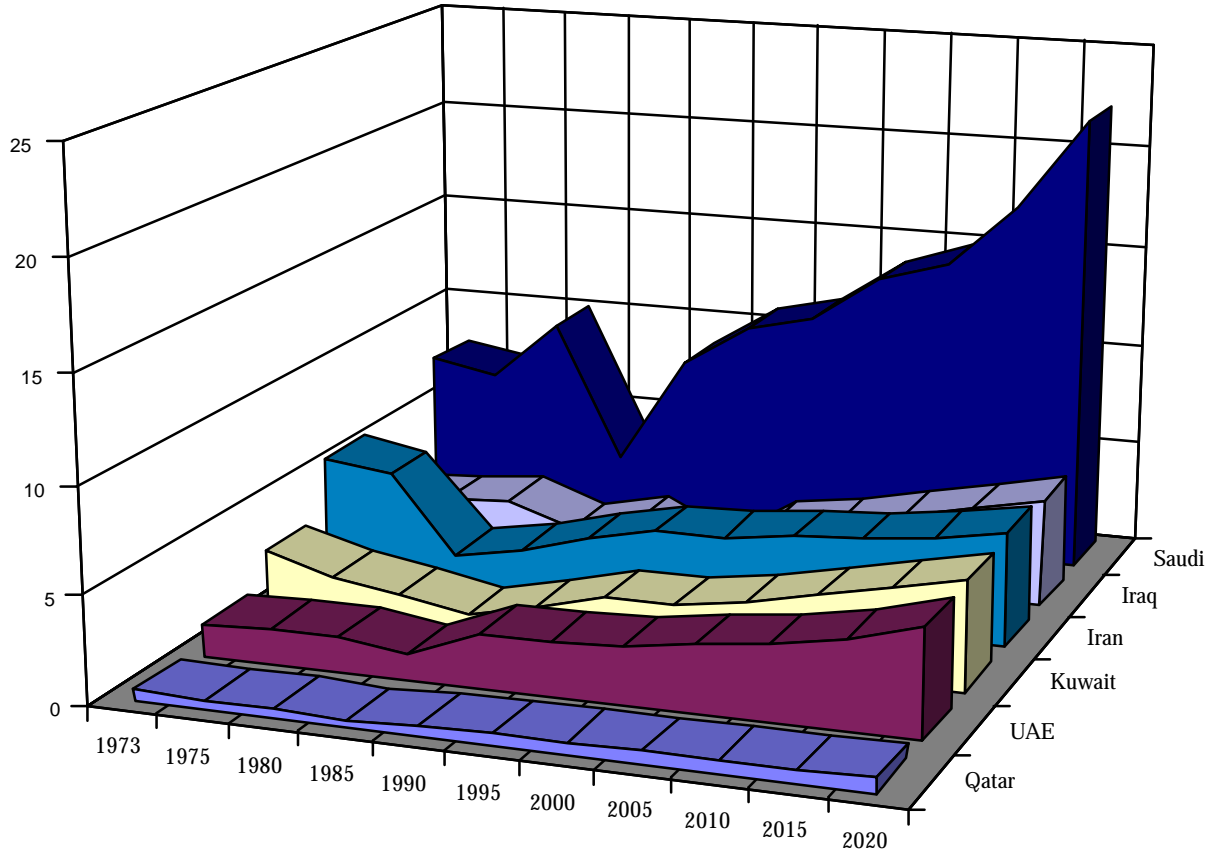


OPEC - - - - 23.20 23.28 24.40 25.119 25.51 26.00 26.46 27.71 28.77 27.58 29.11

Adapted by Anthony H. Cordesman from Energy Information Agency, March 7, 2001, www.eia.doe.gov/emeu/ipsr/t11a.txt

The “Swing State:” Saudi Petroleum Production Capacity Relative to Gulf and World Capacity During 1973-2020 – Part One

(EIA Reference Case in MMbbl)



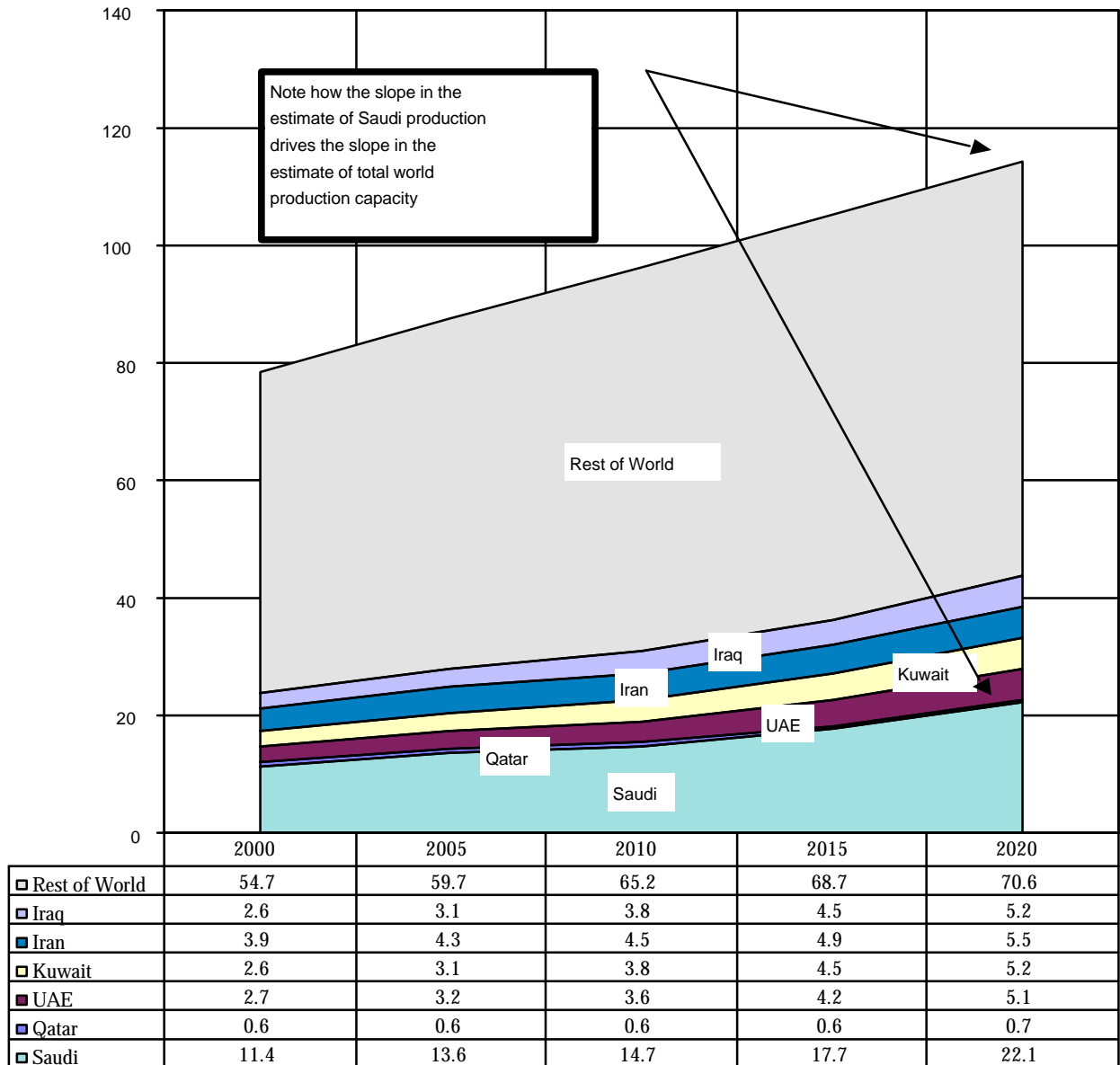
	1973	1975	1980	1985	1990	1995	2000	2005	2010	2015	2020
■ Qatar	0.57	0.438	0.472	0.301	0.5	0.6	0.6	0.6	0.6	0.6	0.7
■ UAE	1.533	1.644	1.709	1.193	2.5	2.6	2.7	3.2	3.6	4.2	5.1
□ Kuwait	3.02	2.084	1.656	1.023	1.7	2.6	2.6	3.1	3.8	4.5	5.2
■ Iran	5.8	5.35	1.662	2.25	3.2	3.9	3.9	4.3	4.5	4.9	5.5
□ Iraq	2.018	2.262	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
<i>Saudi Arabia as % of Total</i>	-	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
<i>Saudi Arabia as % of Total</i>	-	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.

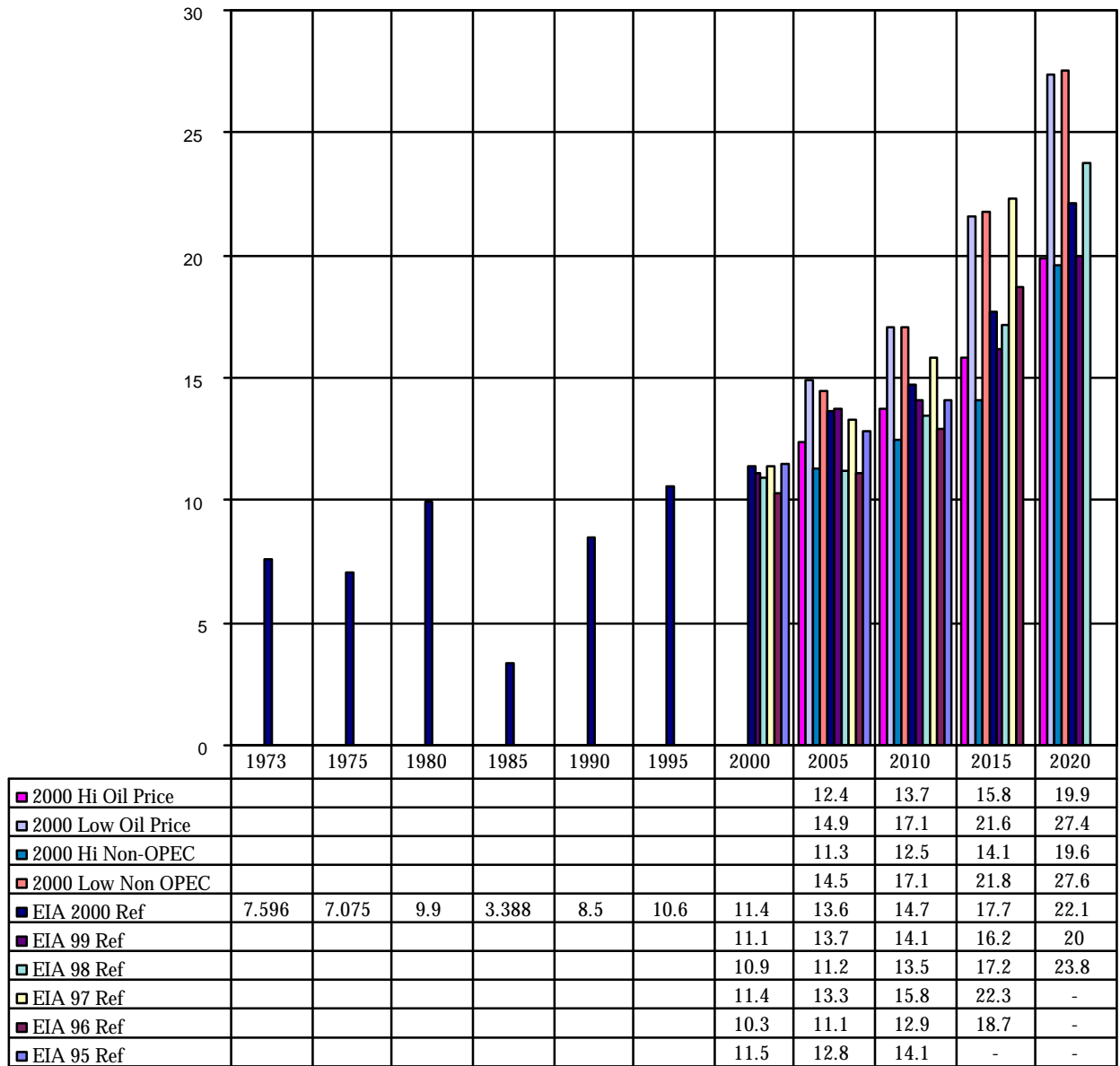
The “Swing State:” Saudi Petroleum Production Capacity Relative to Gulf and World Capacity During 1973-2020 – Part Two

(EIA Reference Case in MMBD)



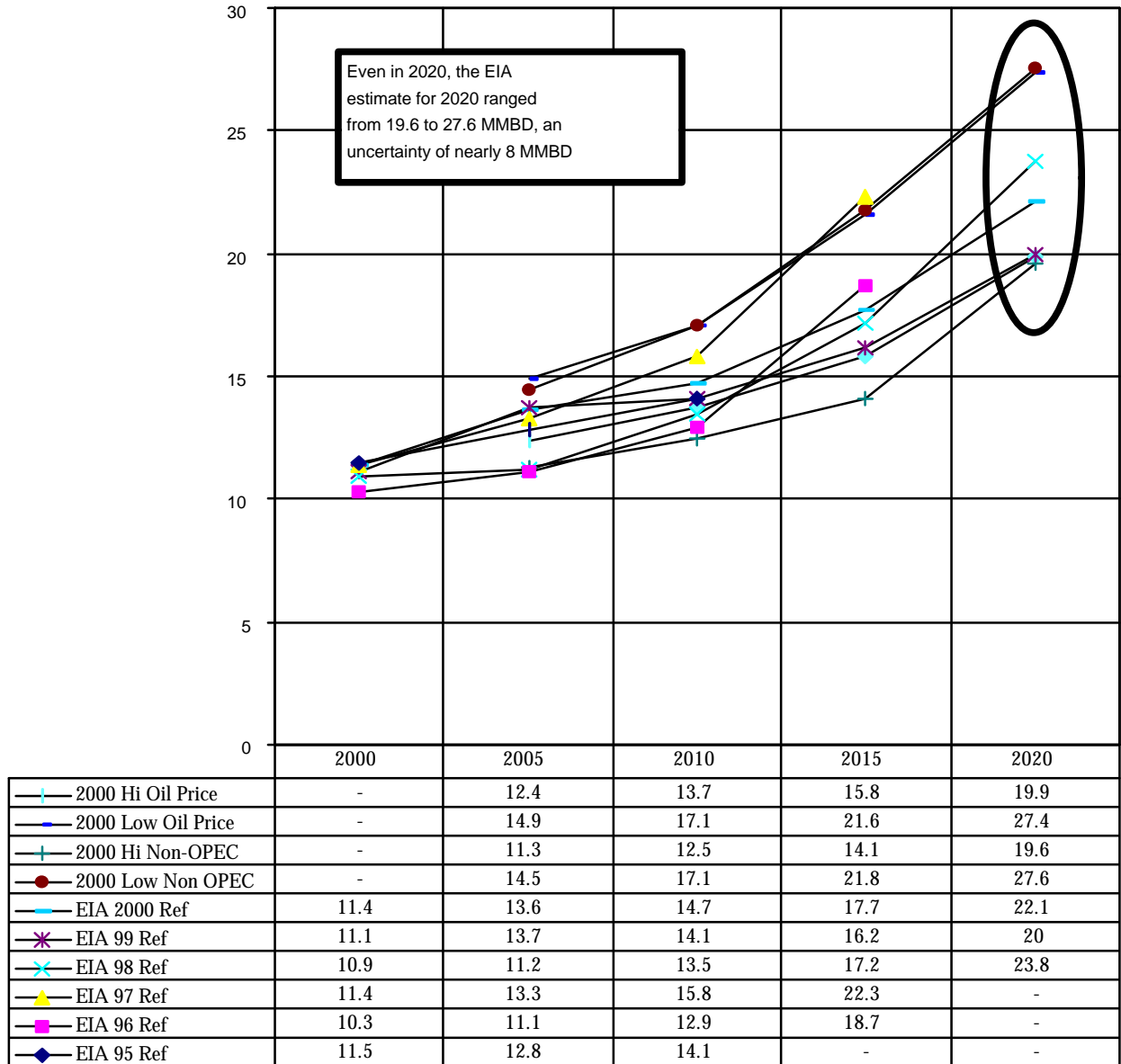
Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, 1997, DOE/EIA-0484 (97), April 1997, pp. 157-160, and EIA, International Energy Outlook, 2000, DOE/EIA-0484 (2000), April 2000, Table D1.

Uncertainty in Estimates of Future Saudi Petroleum Production Capacity– Part One (EIA Cases in MMBD)



Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, DOE/EIA, 1995-2000 editions.

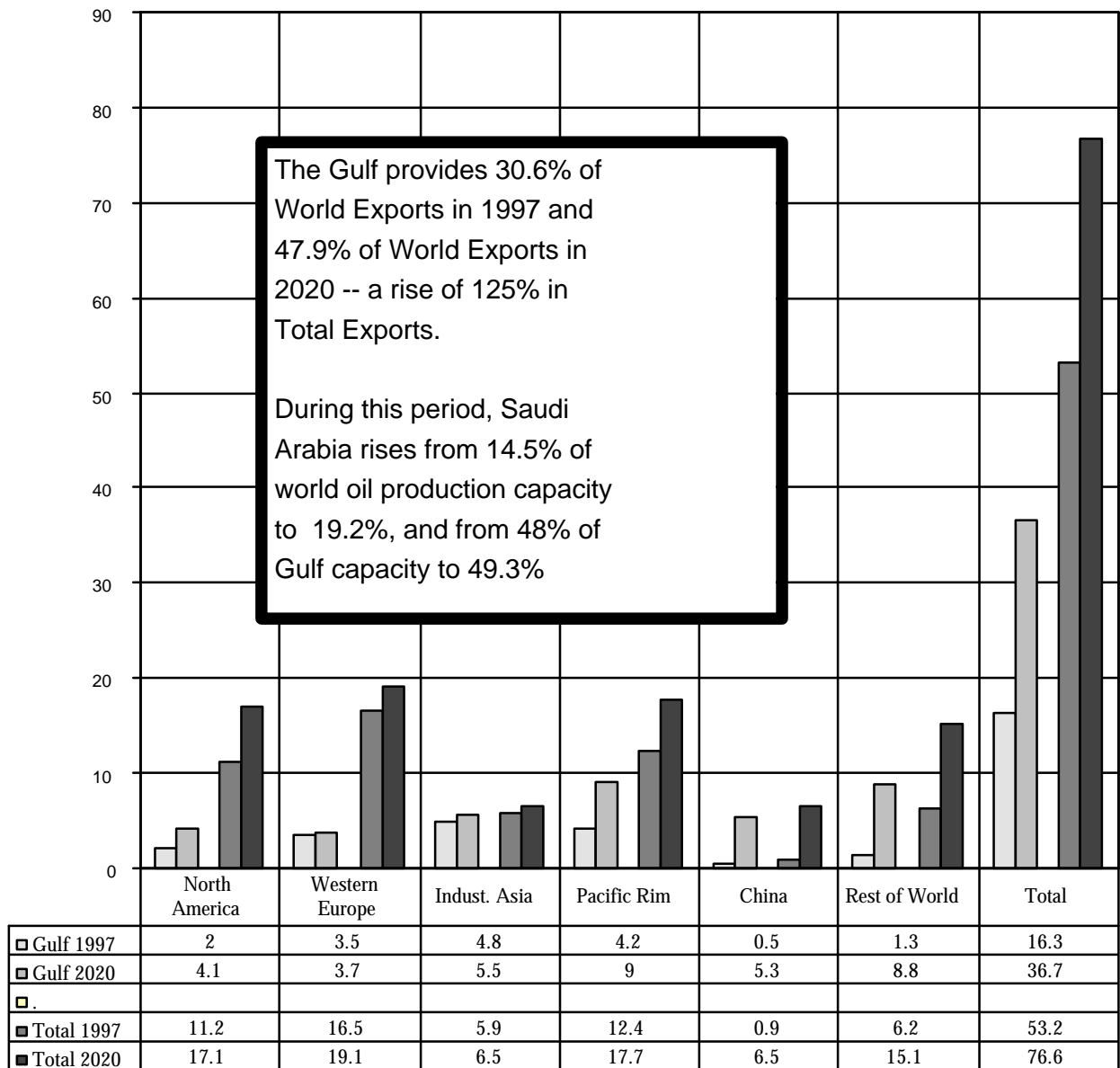
Uncertainty in Estimates of Future Saudi Petroleum Production Capacity— Part Two (EIA Cases in MMBD)



Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, DOE/EIA, 1995-2000 editions.

Gulf Oil Exports Relative to World Exports: 1997-2020

(EIA Reference Case in MMBD)

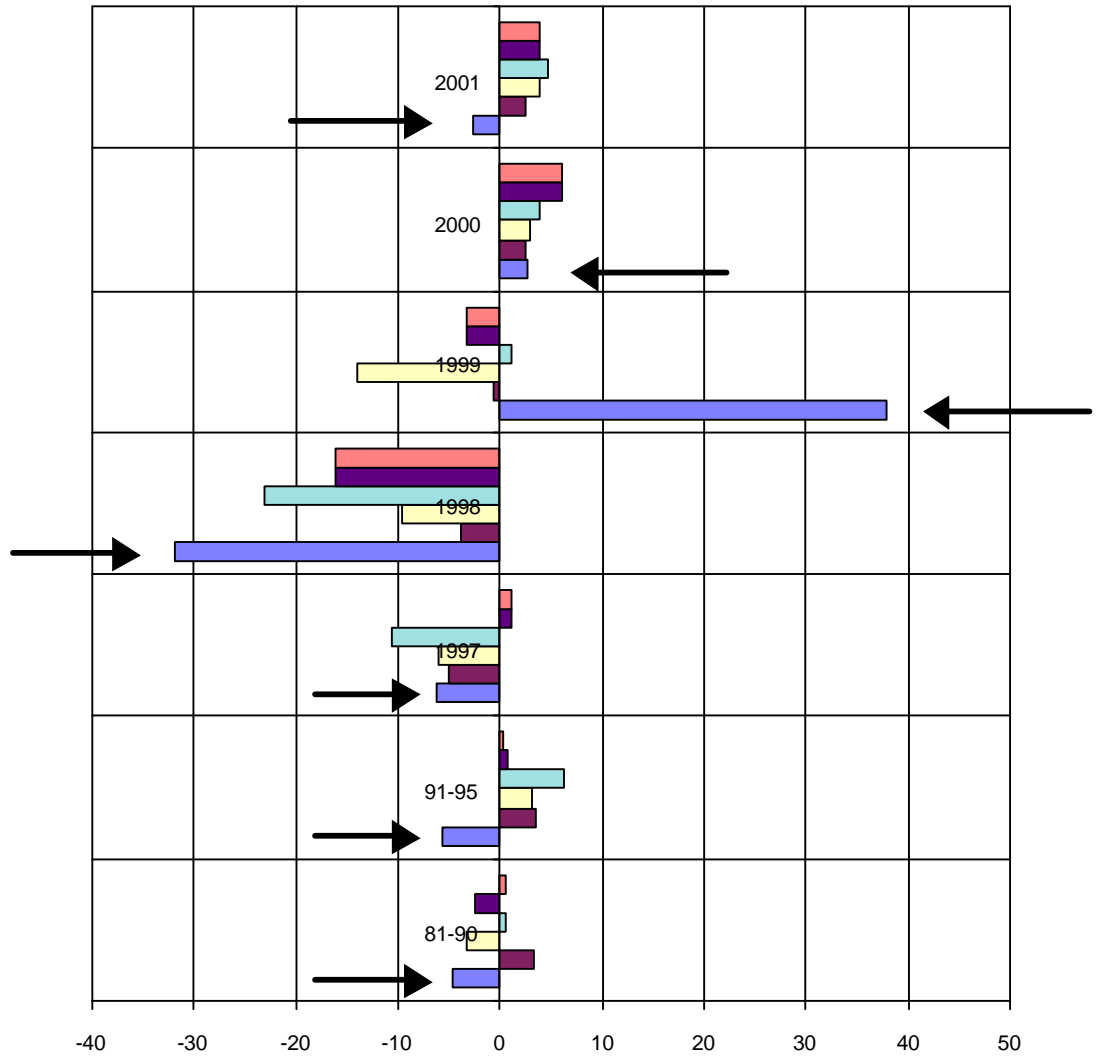


Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, 1997, DOE/EIA-0484 (97), April 1997, pp. 157-160, and EIA, International Energy Outlook, 2000, DOE/EIA-0484 (2000), April 2000, Table D1.

Part Two

The Economic Uncertainty Inherent in Dependence on Petroleum Exports

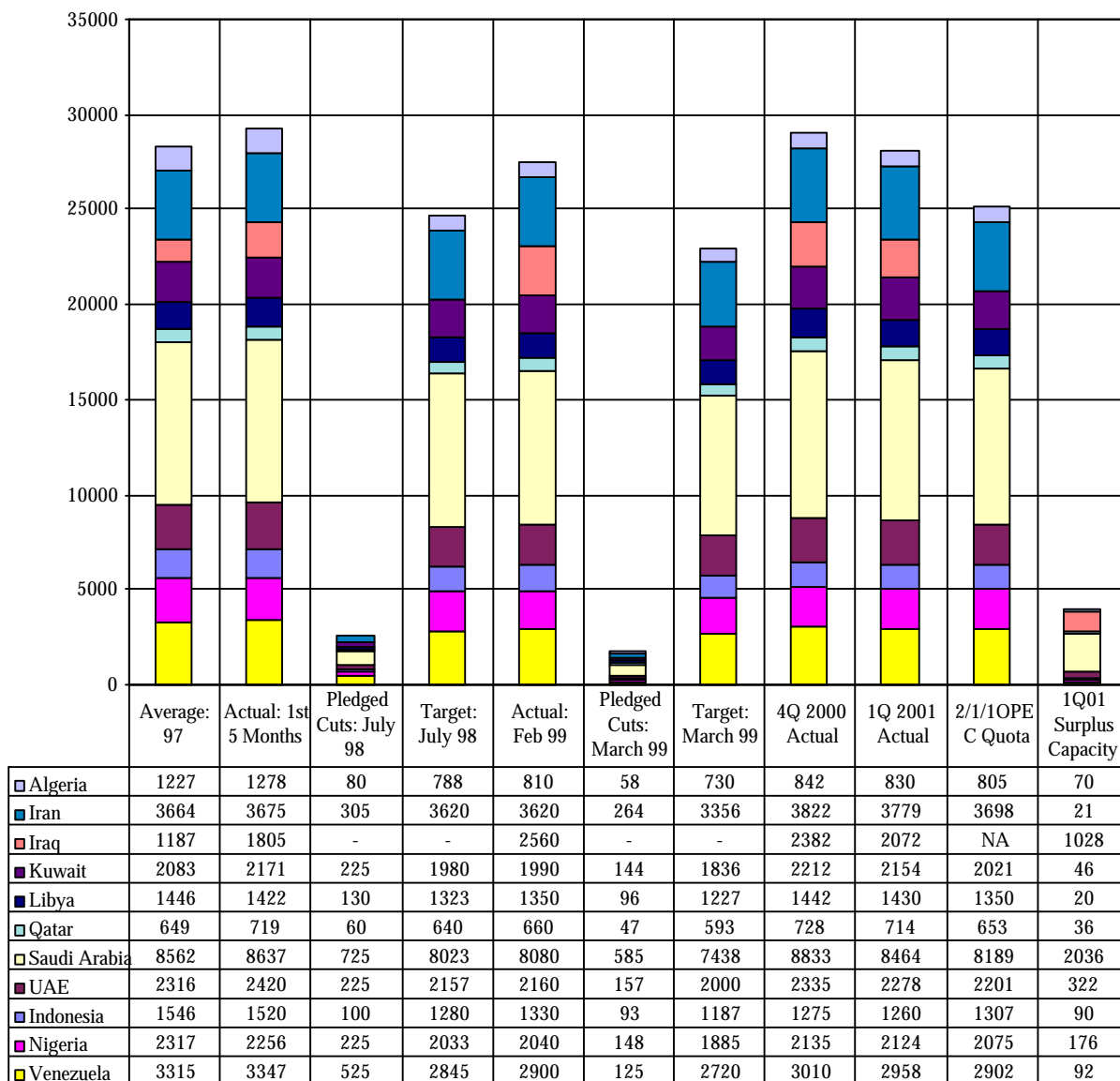
Oil and Petroleum Exports are a Highly Volatile Commodity and Far More Volatile than Manufactures



	81-90	91-95	1997	1998	1999	2000	2001
Metals & Minerals	0.5	0.3	1.2	-16.1	-3.2	6	4
Fertilizers	-2.5	0.7	1.2	-16.1	-3.2	6	4
Raw Materials	0.5	6.2	-10.5	-23.2	1.2	3.9	4.7
Food	-3.3	3.2	-6.1	-9.6	-14	2.9	4
G-5 Value of Manufacturers	3.3	3.6	-5.1	-3.9	-0.6	2.5	2.5
Petroleum	-4.7	-5.6	-6.2	-31.9	37.8	2.8	-2.7

Source: Adapted by Anthony H. Cordesman from World Bank, *Claiming the Future*, pp. 16-18.

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



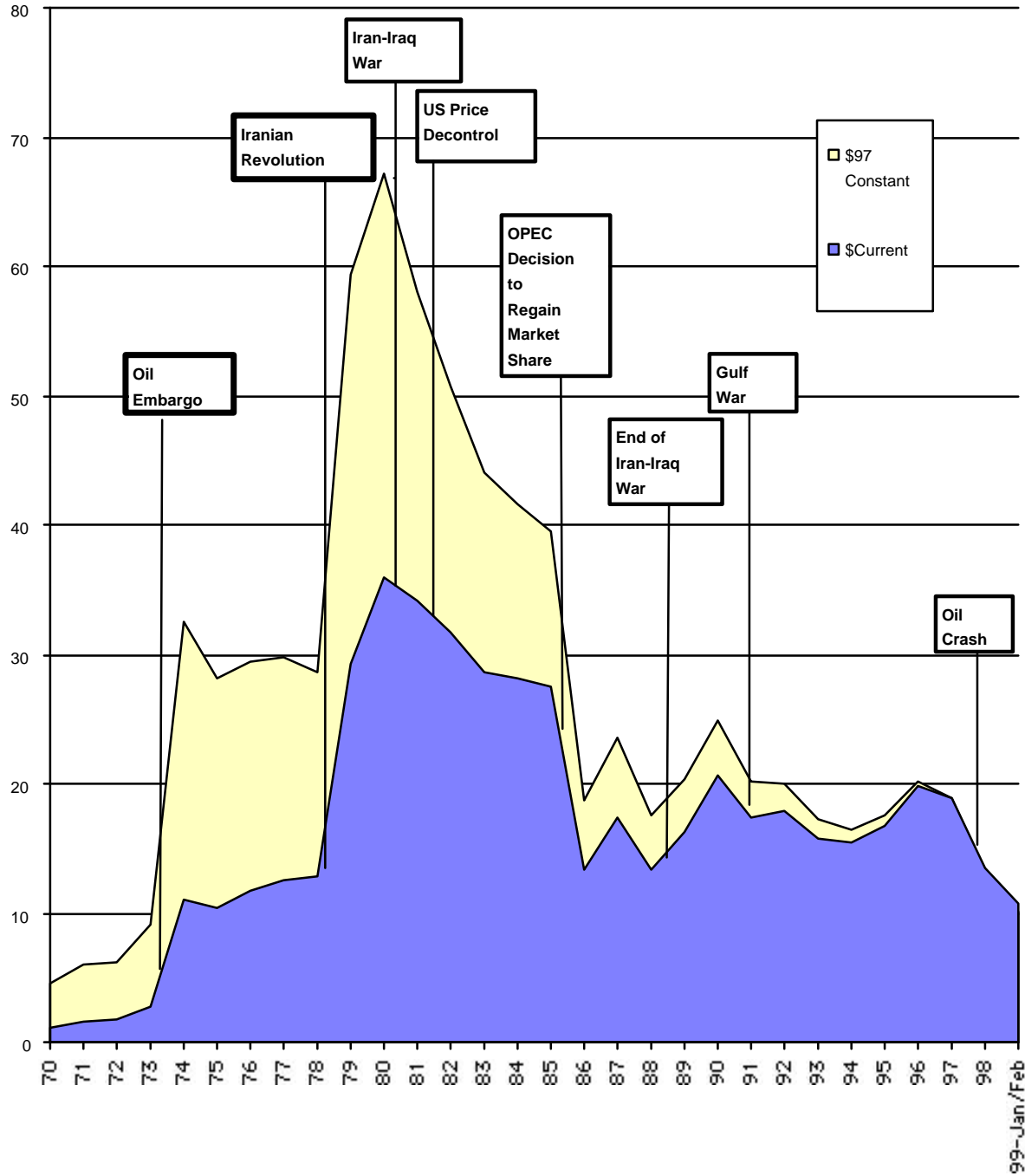
Total Gulf OPEC
Total MENA OPEC

18.7	20.9	21.6	24.4	28.6	38.4	49.8	-	-	-	-
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/opcec2.html as of April 3, 2001.

Politics and the Trends in the Price of Saudi Arabia Light Crude: 1970-1999

(\$US Current and \$US 1997 Constant)

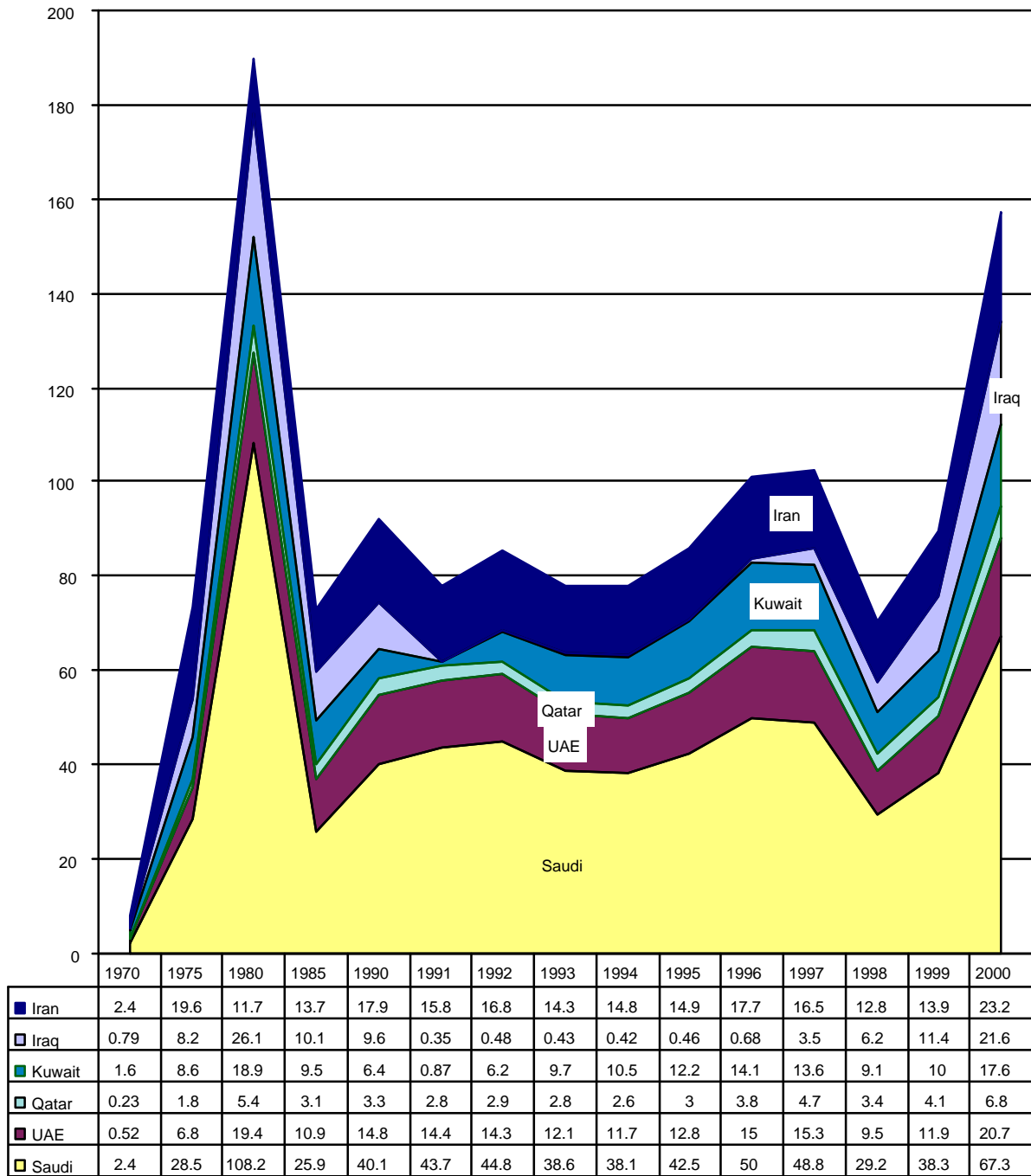


Total ME												
OPEC	13/31	18/87	17/91	9/53	15/19	14.77	15.99	16.75	16.84	16.99	17.18	18.30
Total ME	13.95	19.57	18.40	10.25	16.49	16.19	17.43	18.34	18.59	18.84	19.08	20.16

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

The End Result is “Manic Depression:” Historical Trends in Gulf Oil Revenues: 1970-2000

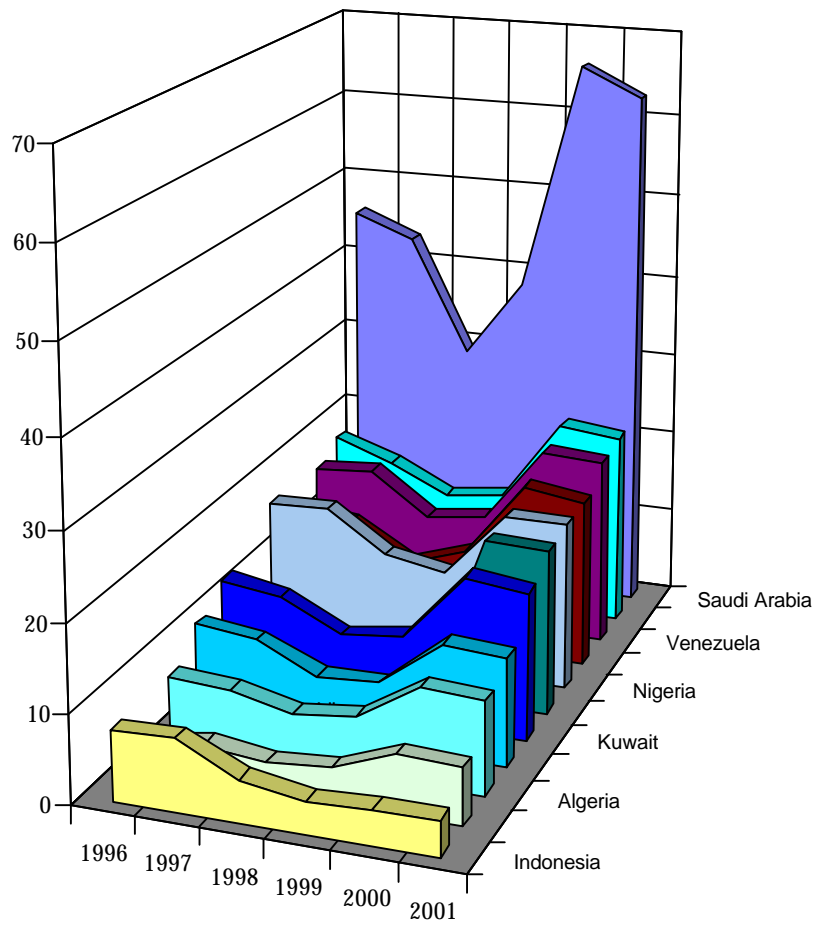
(\$Current Billions)



Total ME OPEC	7.9	74.5	189.7	73.2	92.1	77.9	85.4	77.9	78.2	85.9	101.3	102.5	99.9	132.8	226.6
Total MENA															
OPEC	11.0	84.7	224.7	95.0	112.4	96.2	102.5	92.2	93.7	100.6	120.0	120.1	77.0	103.5	180.3

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.

Things Haven't Gotten Better: "Oil Crash" to "Oil Boom" in 1996-2001: The Cumulative Impact on OPEC Revenues (in US \$Current Billions)

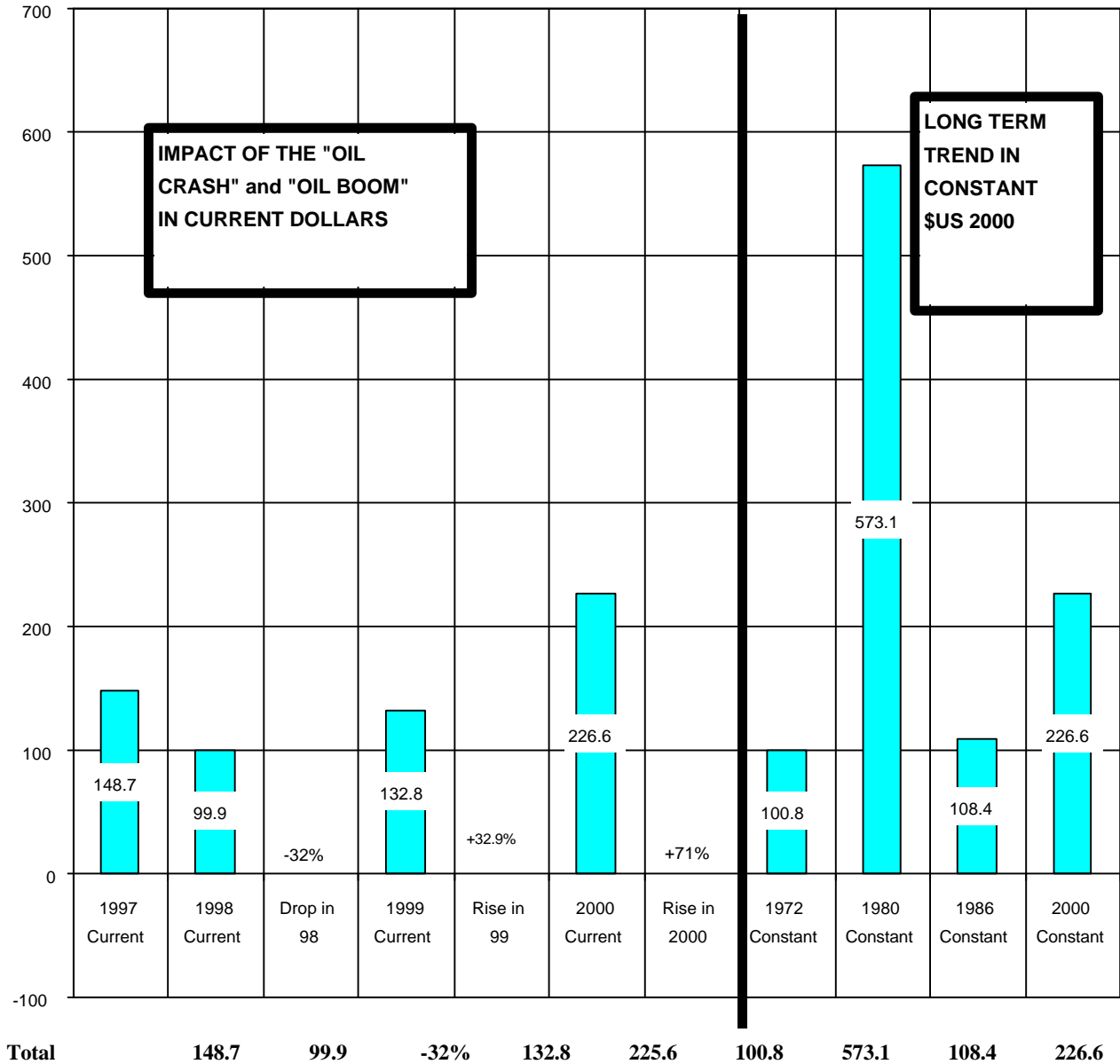


	1996	1997	1998	1999	2000	2001
Indonesia	7.9	8.1	4.8	3.7	4	4
Qatar	3.3	4.3	3.4	4.1	6.7	6.4
Algeria	7.9	7.5	5.7	6.5	11	10.7
Libya	11.1	10.2	7.1	7.4	12.9	12.5
Kuwait	13.5	12.4	9.1	10	17.7	16.9
Iraq	na	na	na	na	19.3	19
Nigeria	17.5	17.8	13.2	12	19.6	19.5
UAE	14.5	13.5	9.5	11.9	20.7	19.6
Venezuela	17.1	17.5	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".

The Current "Boom" is No Boom in Constant Dollars

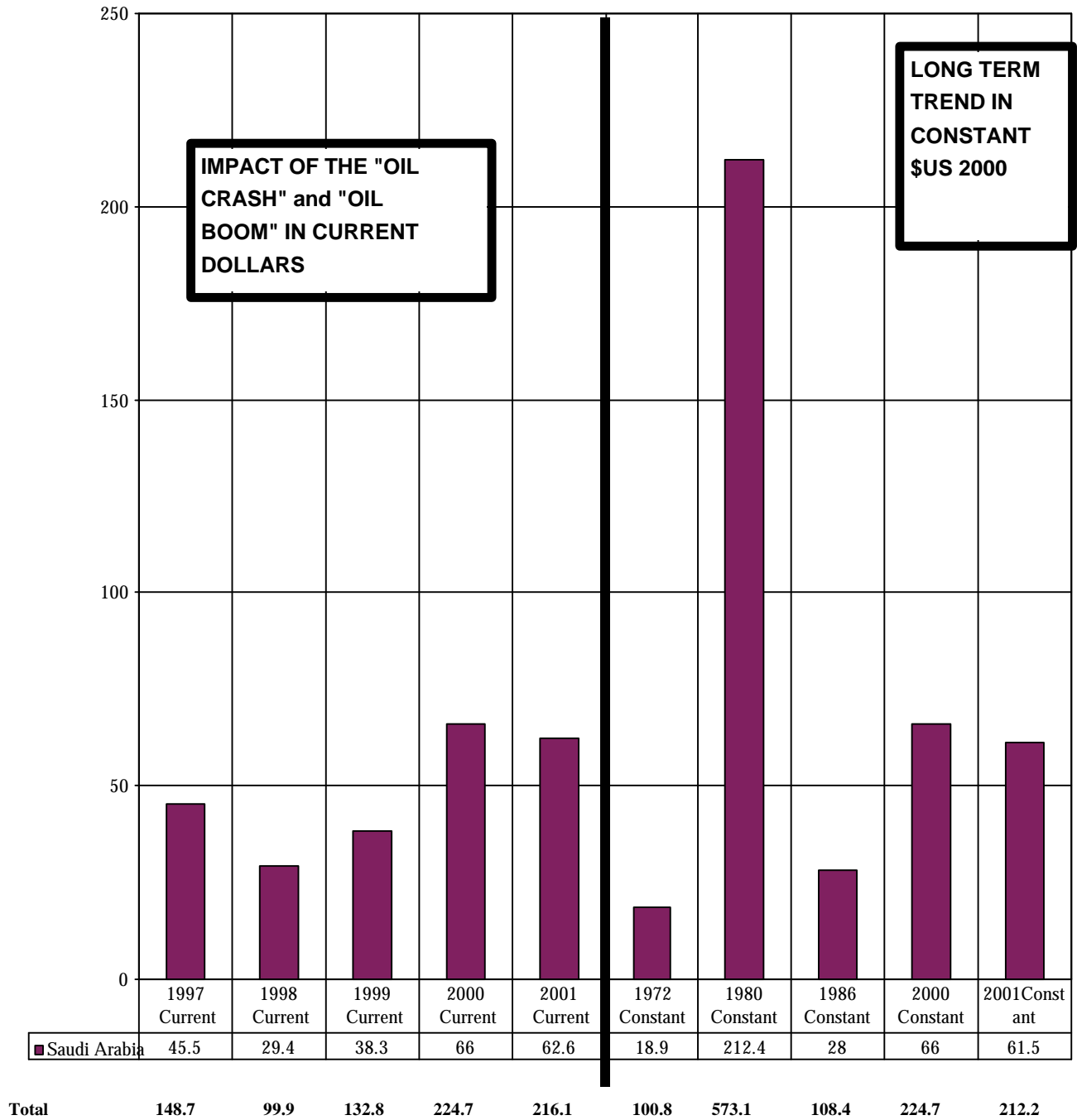
(OPEC oil export revenues in \$US Current and 2000 Constant Billions)



Source: Adapted by Anthony H. Cordesman from data provided by the EIA as of October 2000.

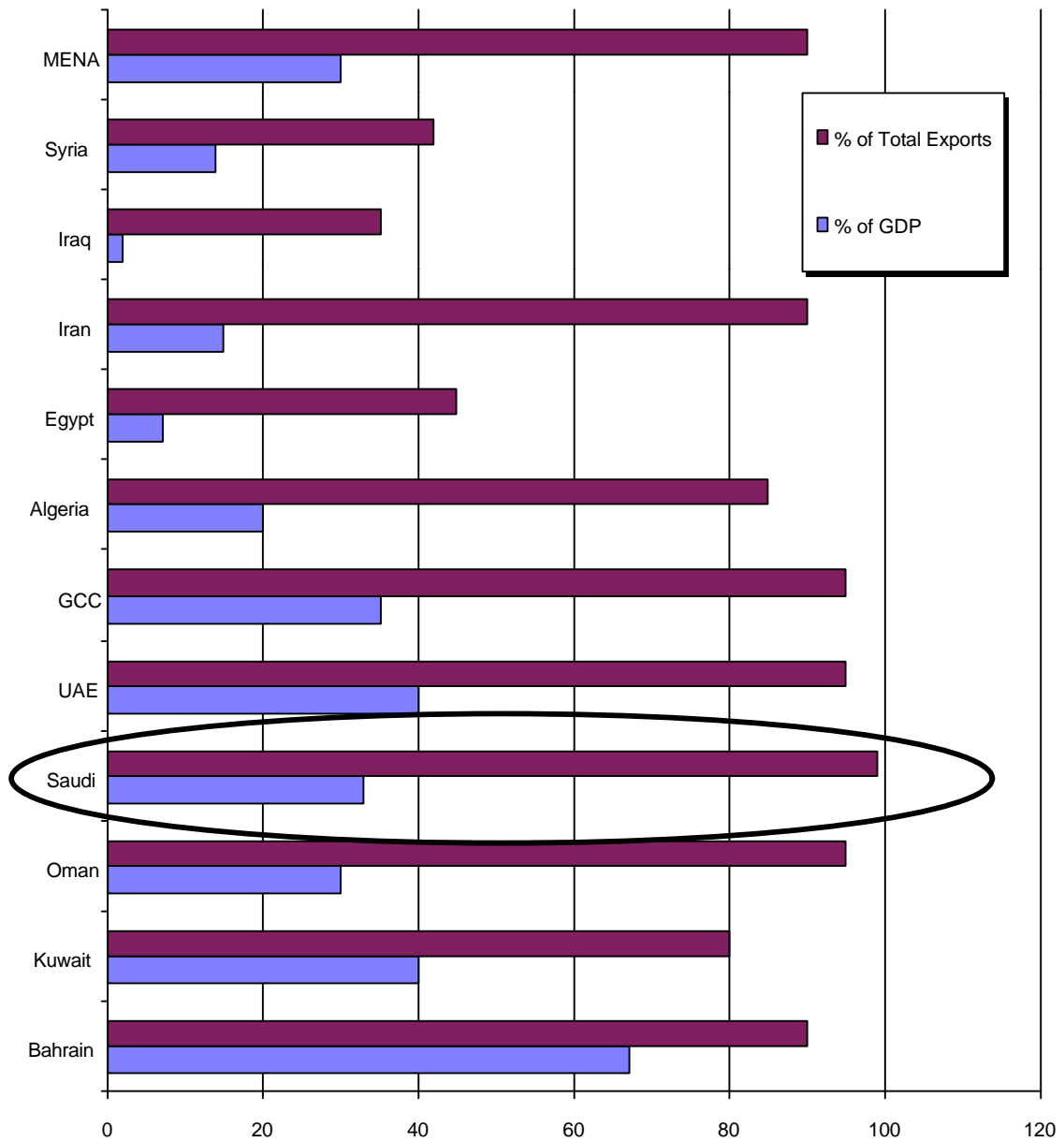
The Swings in Saudi Oil Export Revenues are Worse than in the Total for OPEC

(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.)

Saudi and Other Gulf Economies Failed to Diversify and Remained Over-Dependent on Oil and Petroleum Exports as a Share of

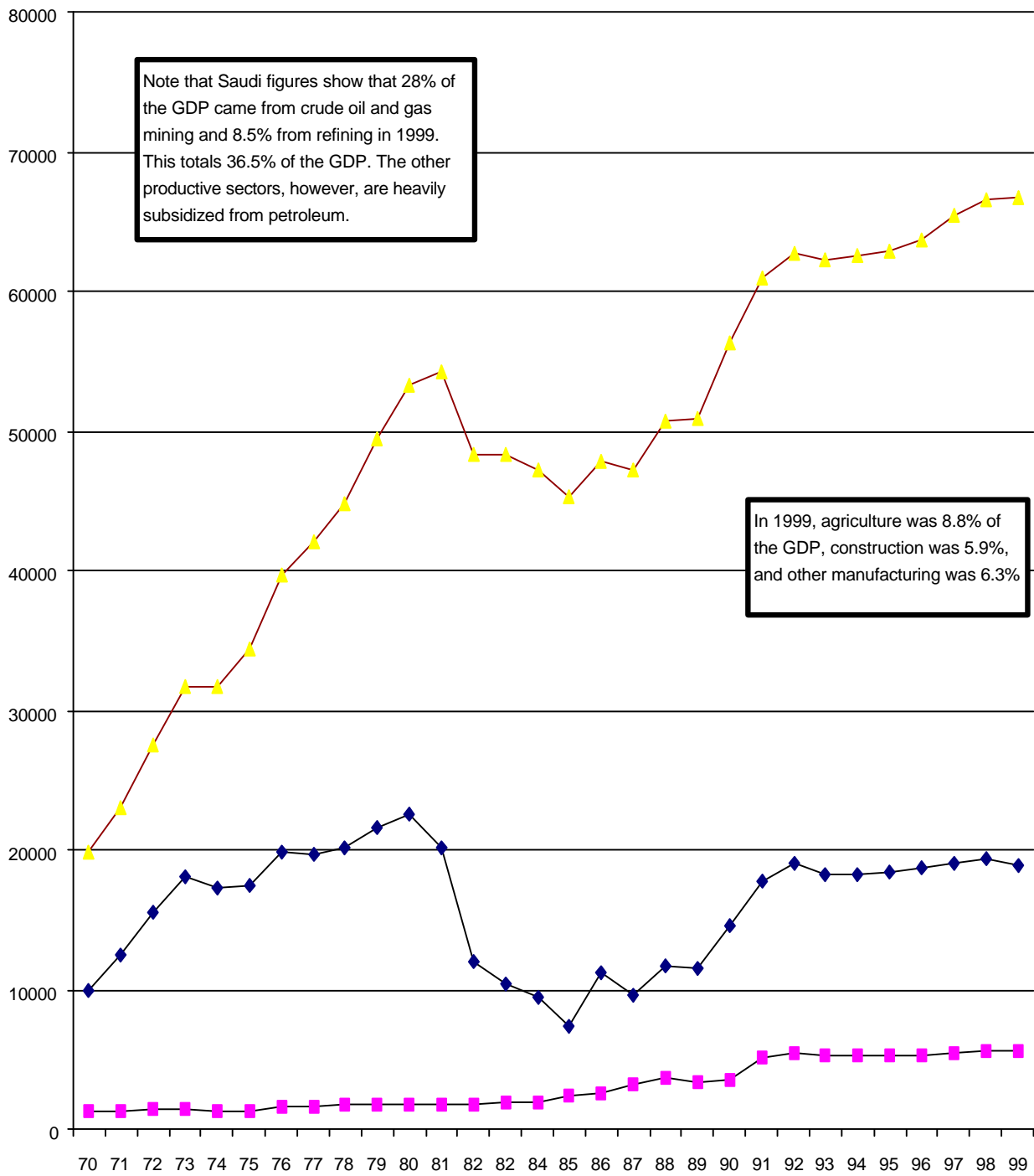


	Bahrain	Kuwait	Oman	Saudi	UAE	GCC	Algeria	Egypt	Iran	Iraq	Syria	MENA
■ % of Total Exports	90	80	95	99	95	95	85	45	90	35	42	90
■ % of GDP	67	40	30	33	40	35	20	7	15	2	14	30

Source: Adapted by Anthony H. Cordesman from World Bank, *Claiming the Future*, pp. 16-18.

Oil and Petroleum as a Share of the Saudi GDP: 1970-1999

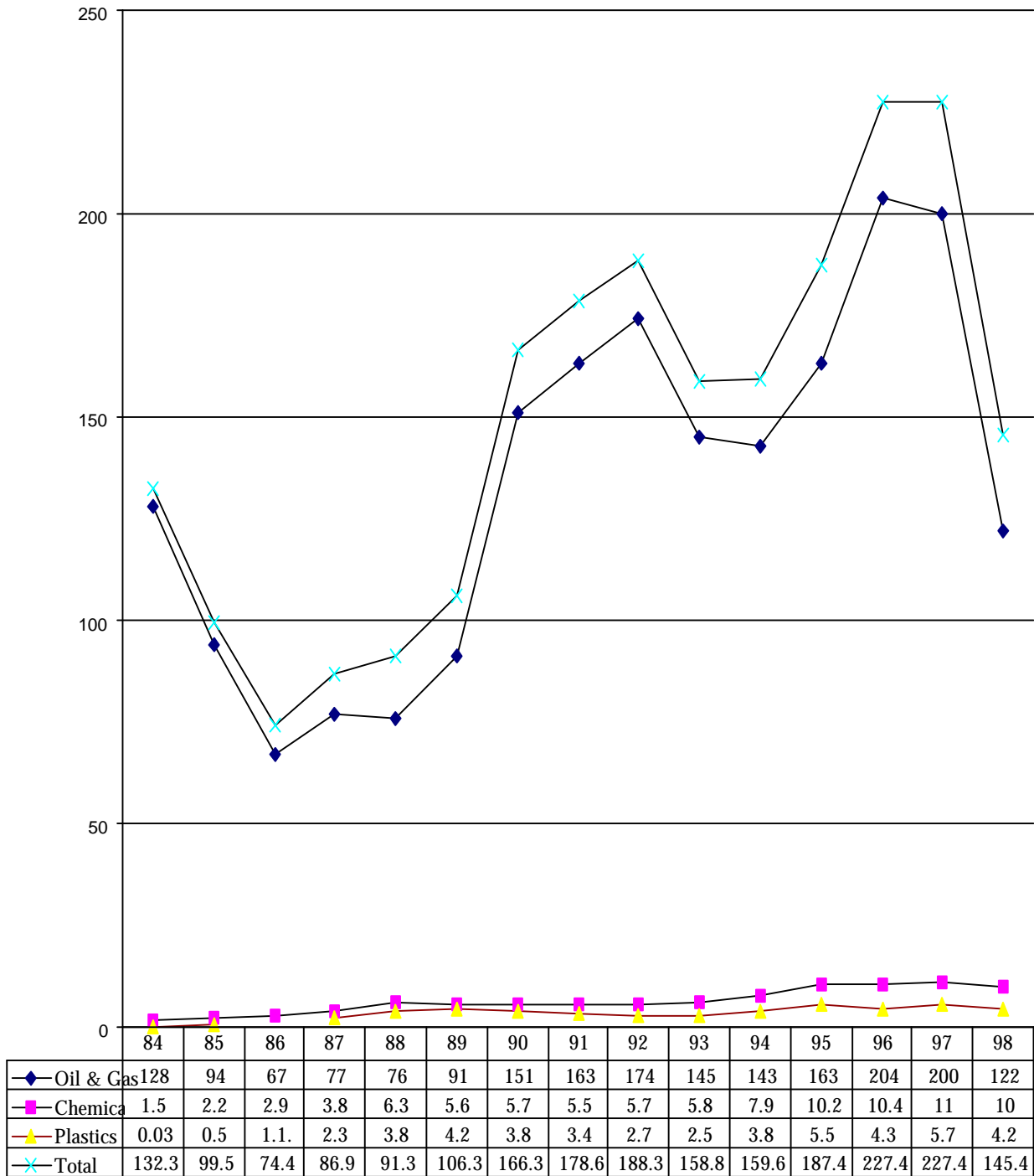
(Million Riyals at producers values at constant prices: 1970=100)



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.

Oil and Petroleum as a Share of Saudi Exports: 1984-1998

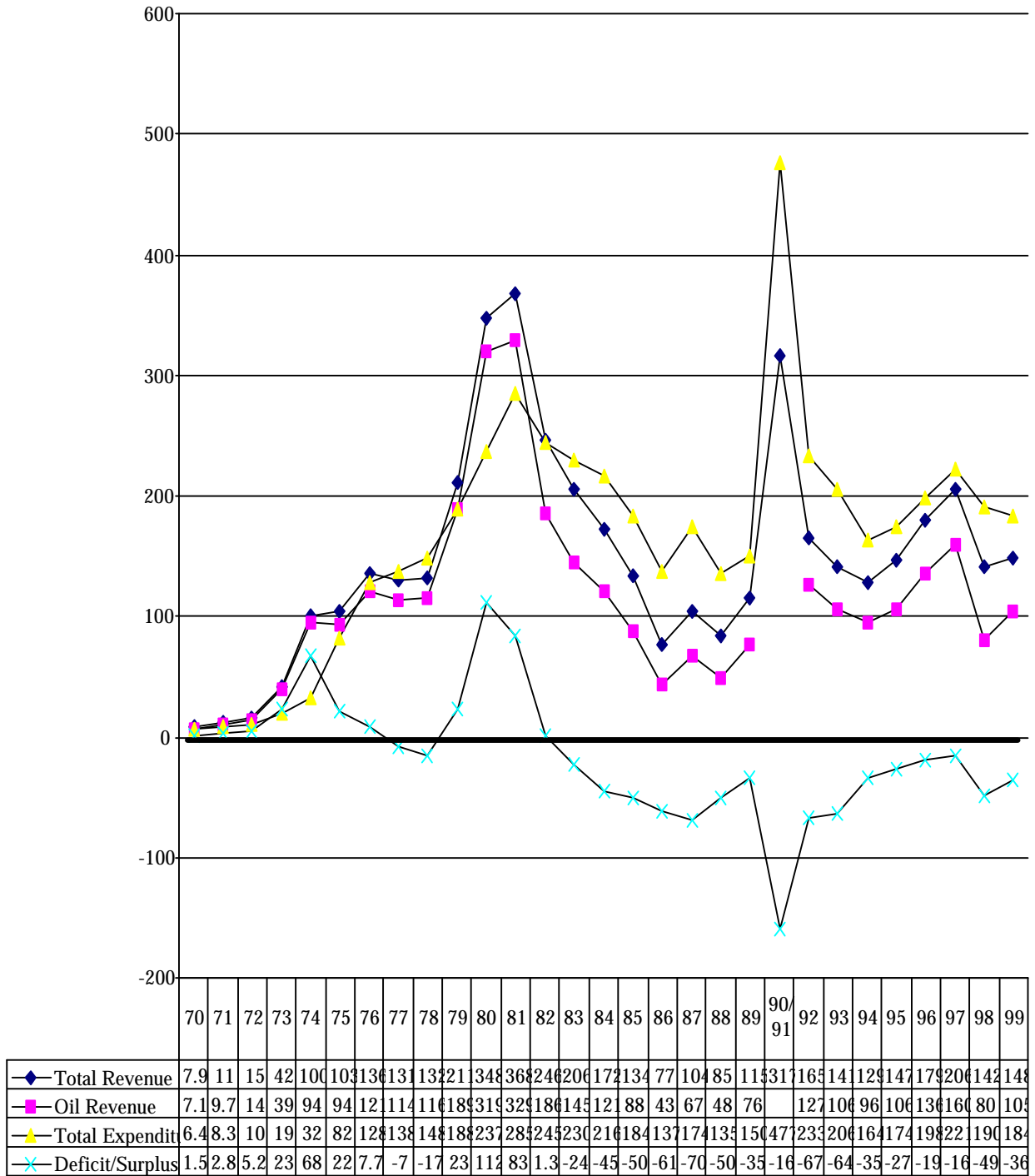
(Billions of Current Riyals)



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.

Pressures on the Saudi Budget: The Problem of Predicting the Future of a One Commodity, State-Driven Economy and More than 15 Years of Deficits Between 1983 and 2000

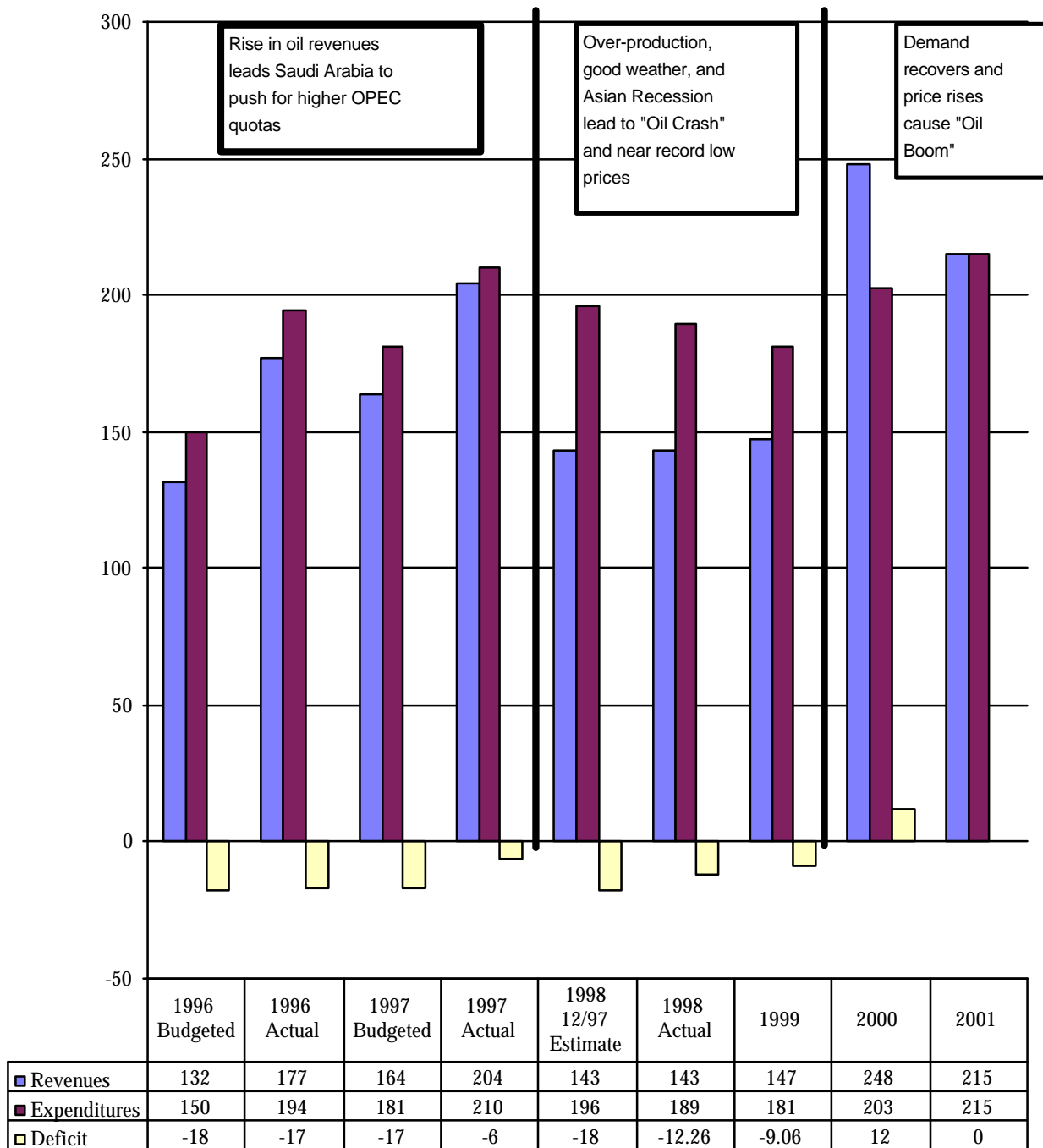
(Million Riyals at producers values at constant prices: 1970=100)



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

Pressures on the Saudi Budget: The Impact of the Recent “Oil Crash” and “Oil Boom”

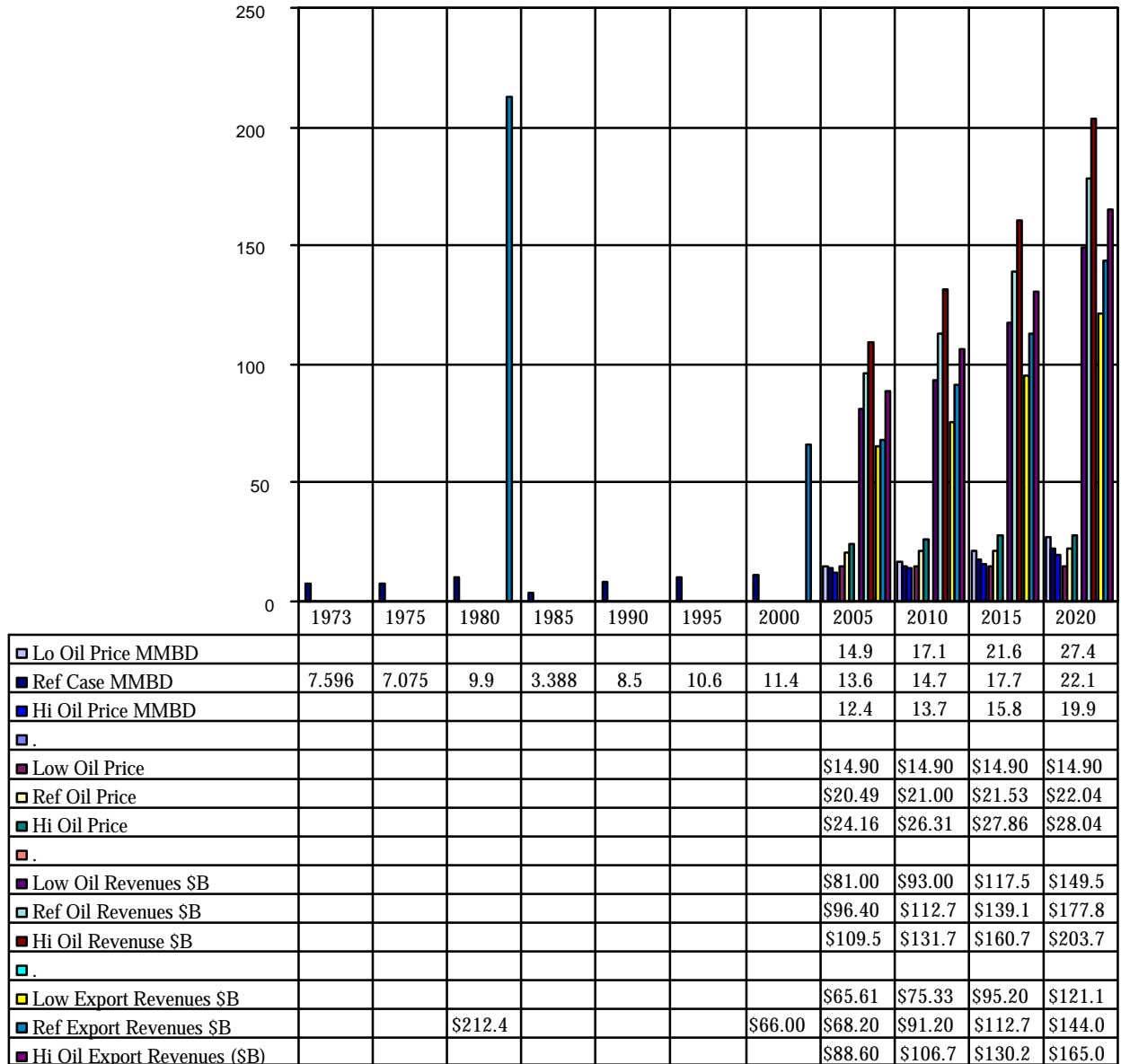
(in billions of Saudi Riyals)



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

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)

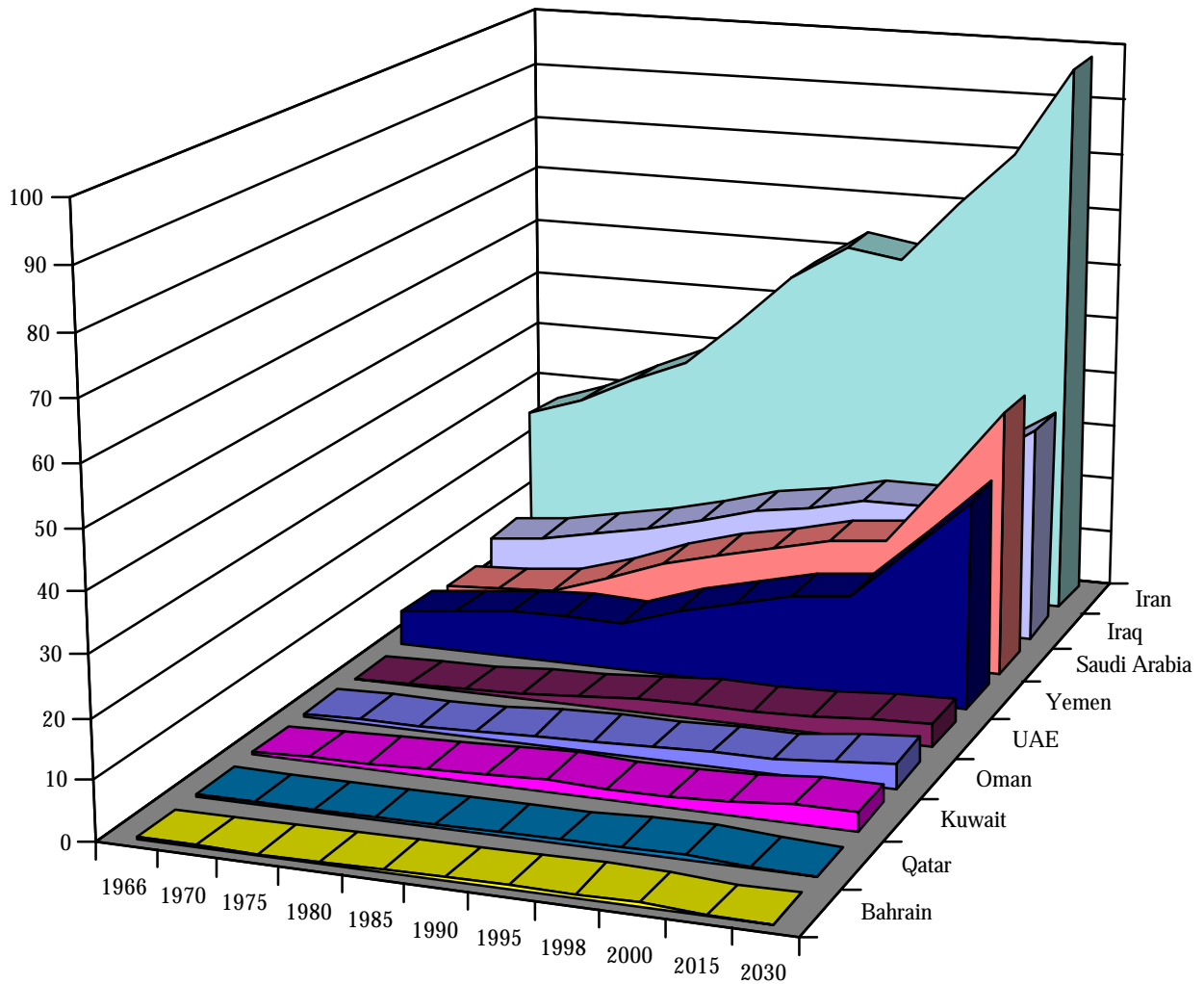


Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, DOE/EIA, DOE/EIA-0484(2000), March 2000, pp. 38, 39, and Table D.

Part Three

The Problem of Demographic Pressure

Living in a Crowded Desert: Saudi Population Growth Compared to Trends in Other Gulf Countries: Low Estimate/World Bank Case (Population in Millions)

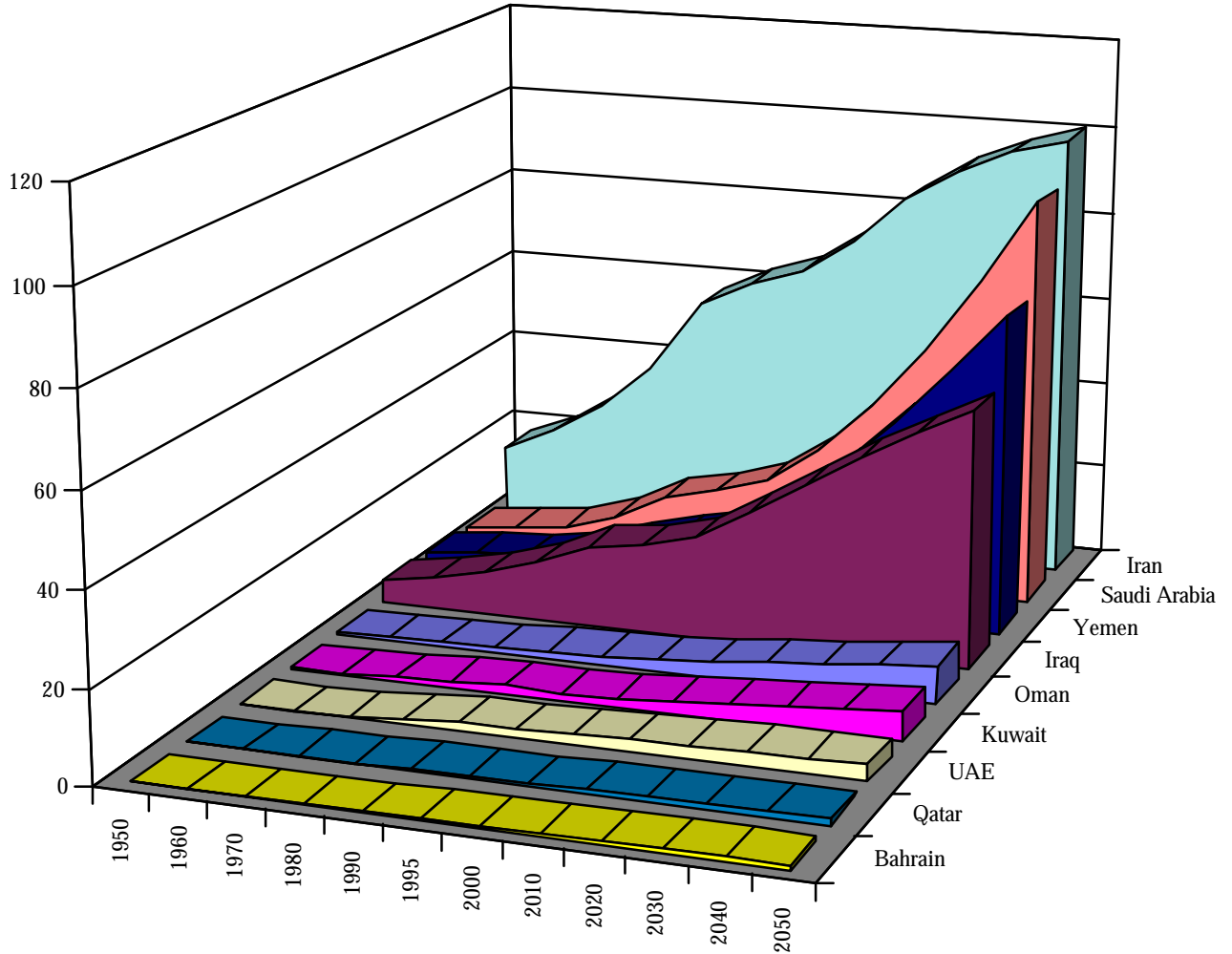


	1966	1970	1975	1980	1985	1990	1995	1998	2000	2015	2030
■ Bahrain	0.18	0.22	0.3	0.4	0.4	0.5	0.6	0.6	0.6	NA	NA
■ Qatar	0.07	0.09	0.14	0.3	0.3	0.4	0.5	0.6	0.7	NA	NA
■ Kuwait	0.5	0.8	1	1.4	1.7	2.1	1.7	1.9	2.3	2.9	3
■ Oman	0.6	0.7	0.8	1.1	1.5	1.8	2	2.3	2.3	3.3	4
■ UAE	0.2	0.3	0.7	1	1.6	2.3	2.8	2.7	2.8	3.7	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.

The Population Time Bomb: Demographics of the Gulf: 1950-2050: US Census Bureau Estimate

(Population in Millions)

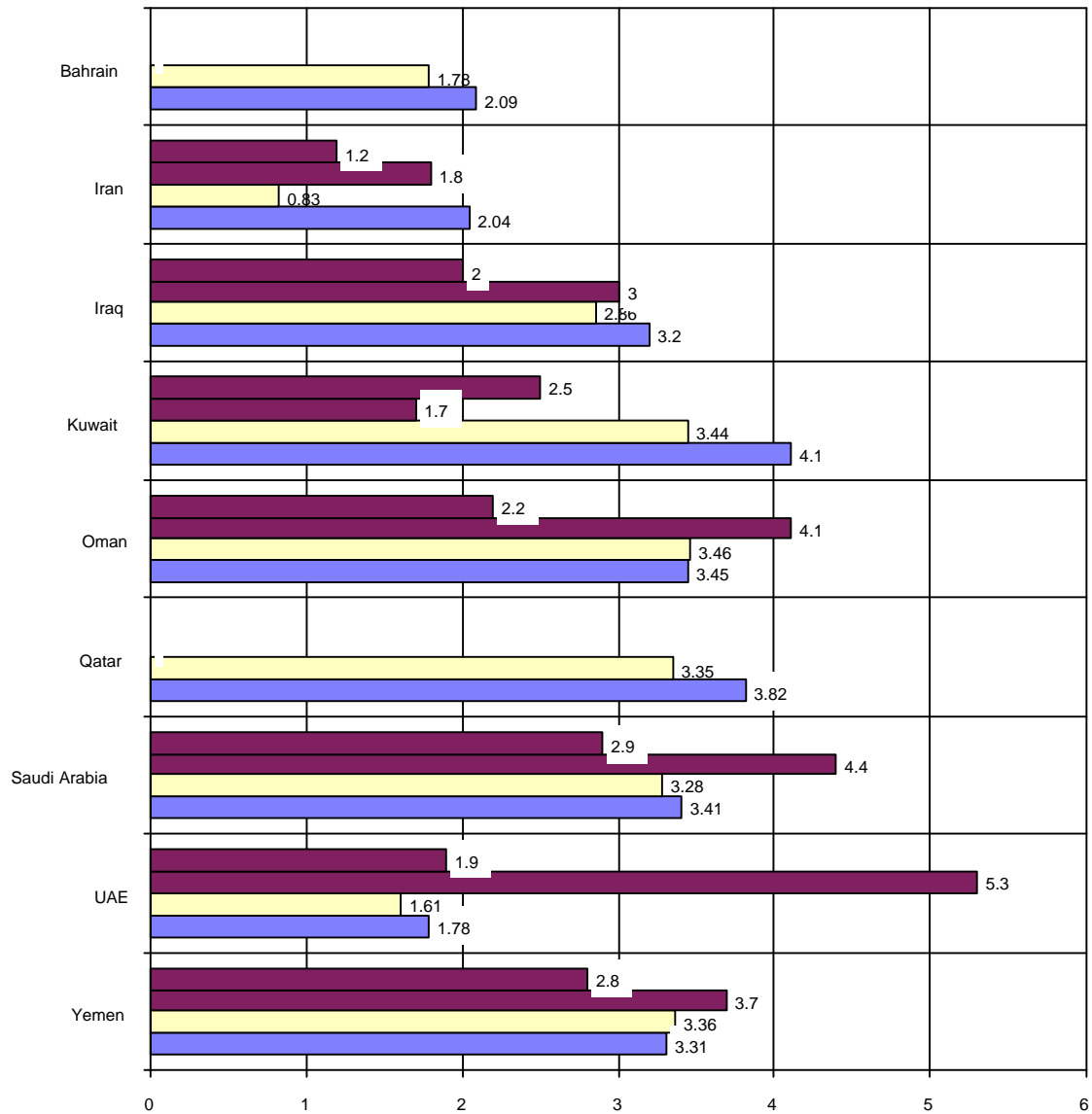


	1950	1960	1970	1980	1990	1995	2000	2010	2020	2030	2040	2050
■ Bahrain	0.11	0.16	0.22	0.35	0.5	0.57	0.63	0.74	0.83	0.9	0.95	0.97
■ Qatar	0.03	0.05	0.11	0.23	0.48	0.61	0.74	0.97	1.1	1.2	1.2	1.2
■ UAE	0.07	0.1	0.25	1	2	2.2	2.4	2.8	3.1	3.4	3.5	3.7
■ Kuwait	0.15	0.29	0.75	1.4	2.1	1.6	2	2.8	3.7	4.6	5.5	6.4
■ 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.

Saudi Arabia and Comparative Birth Rates in the Gulf

(Percentage Growth Estimates as of 2000)

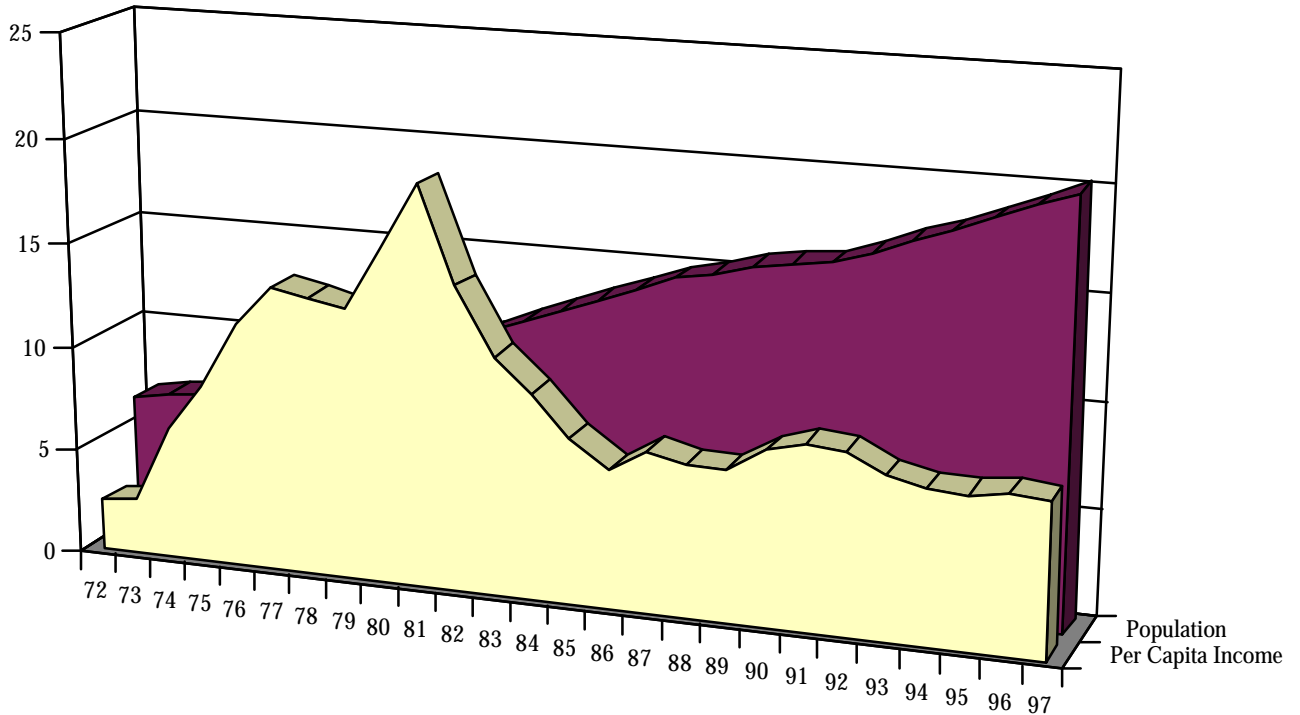


	Yemen	UAE	Saudi Arabia	Qatar	Oman	Kuwait	Iraq	Iran	Bahrain
World Bank 89-2015	2.8	1.9	2.9	-	2.2	2.5	2	1.2	-
World Bank 80-98	3.7	5.3	4.4	-	4.1	1.7	3	1.8	-
CIA 2000	3.36	1.61	3.28	3.35	3.46	3.44	2.86	0.83	1.78
CIA 1998	3.31	1.78	3.41	3.82	3.45	4.1	3.2	2.04	2.09

Adapted by Anthony H. Cordesman from CIA, World Factbook, 1998 and 2000, and World Bank, World Development Indicators, 2000, pp. 38-40.

The Demographic Squeeze: Saudi Arabia: Population Growth in Millions and Per Capita Income in Constant 1997 US Dollars

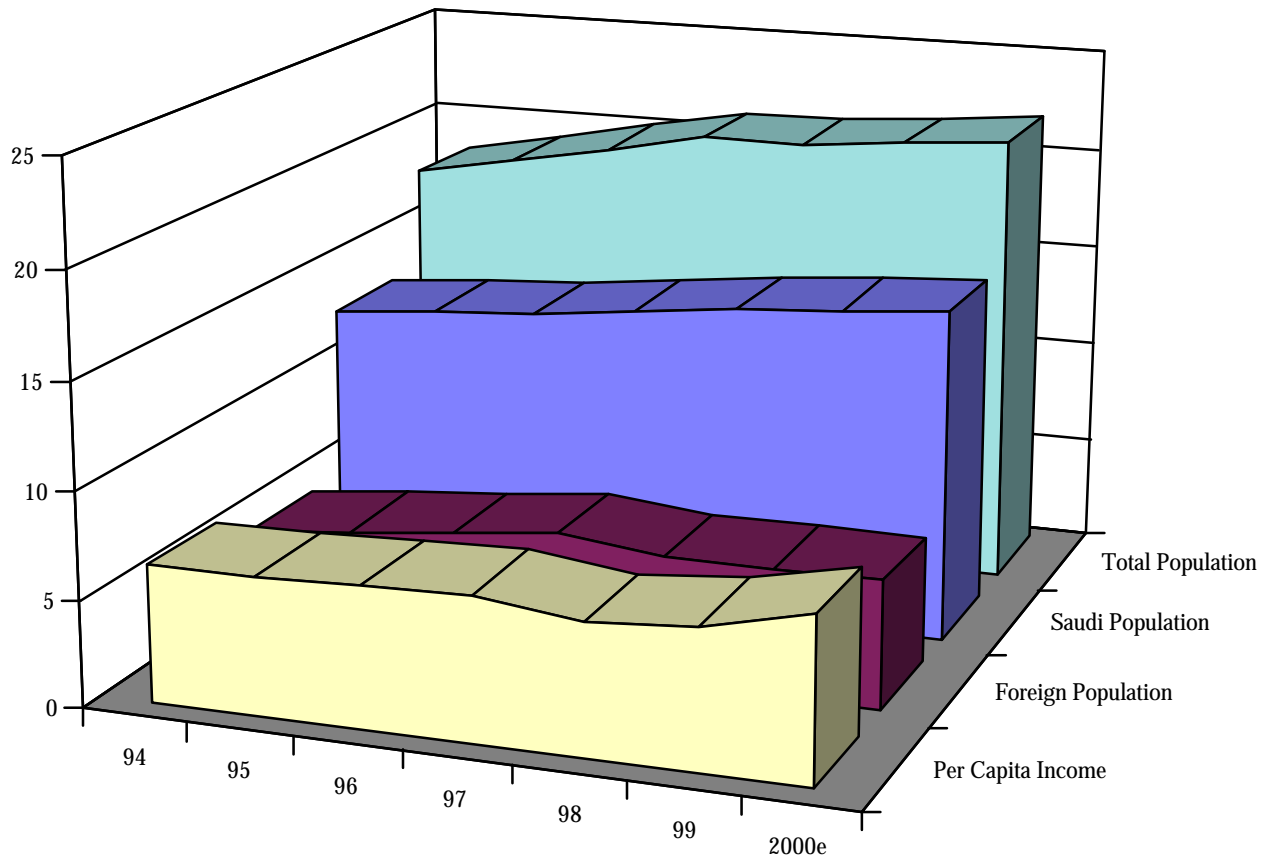
(Population in Millions; Per Capita Income in Thousands of Constant 1997 \$USD)



	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.

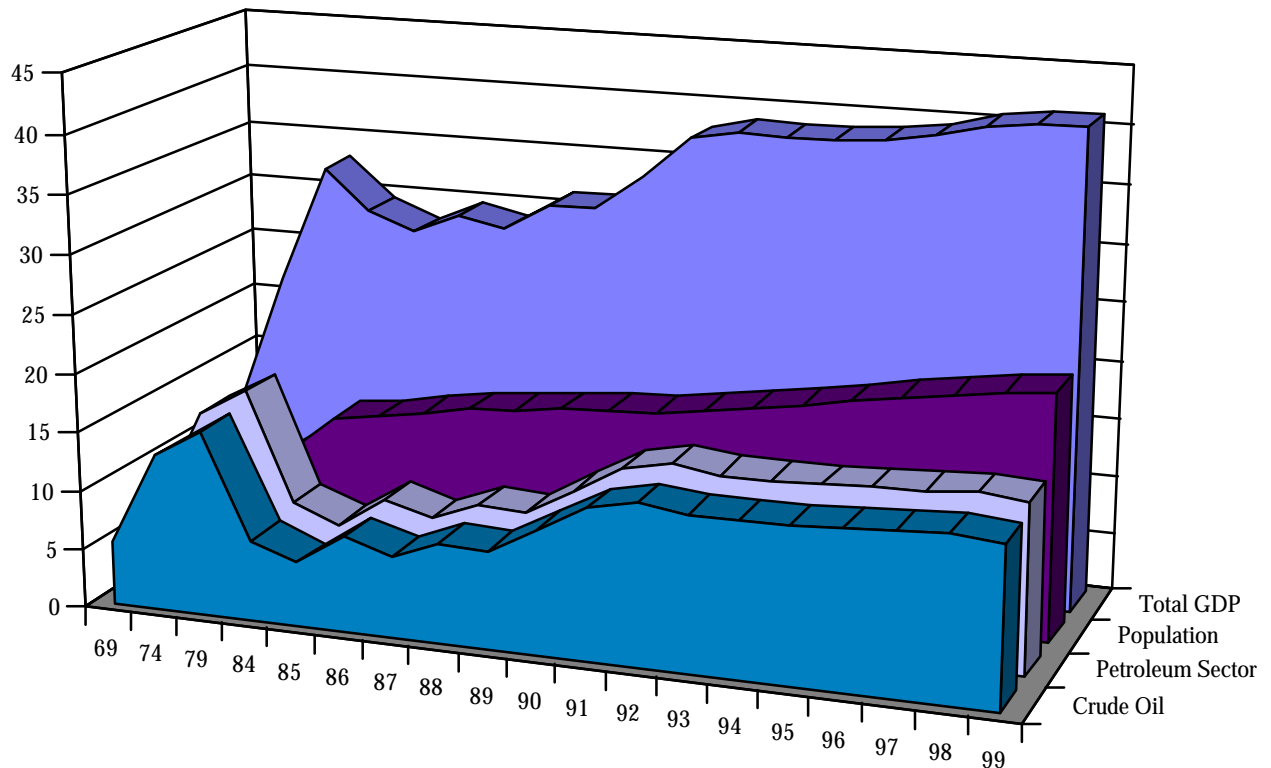
Recent Trends in the Saudi Population and GDP Per Capita in Current Dollars: The View of the Saudi American Bank
 (Population in Millions; Per Capita Income on 1,000s of Current \$USD))



	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.

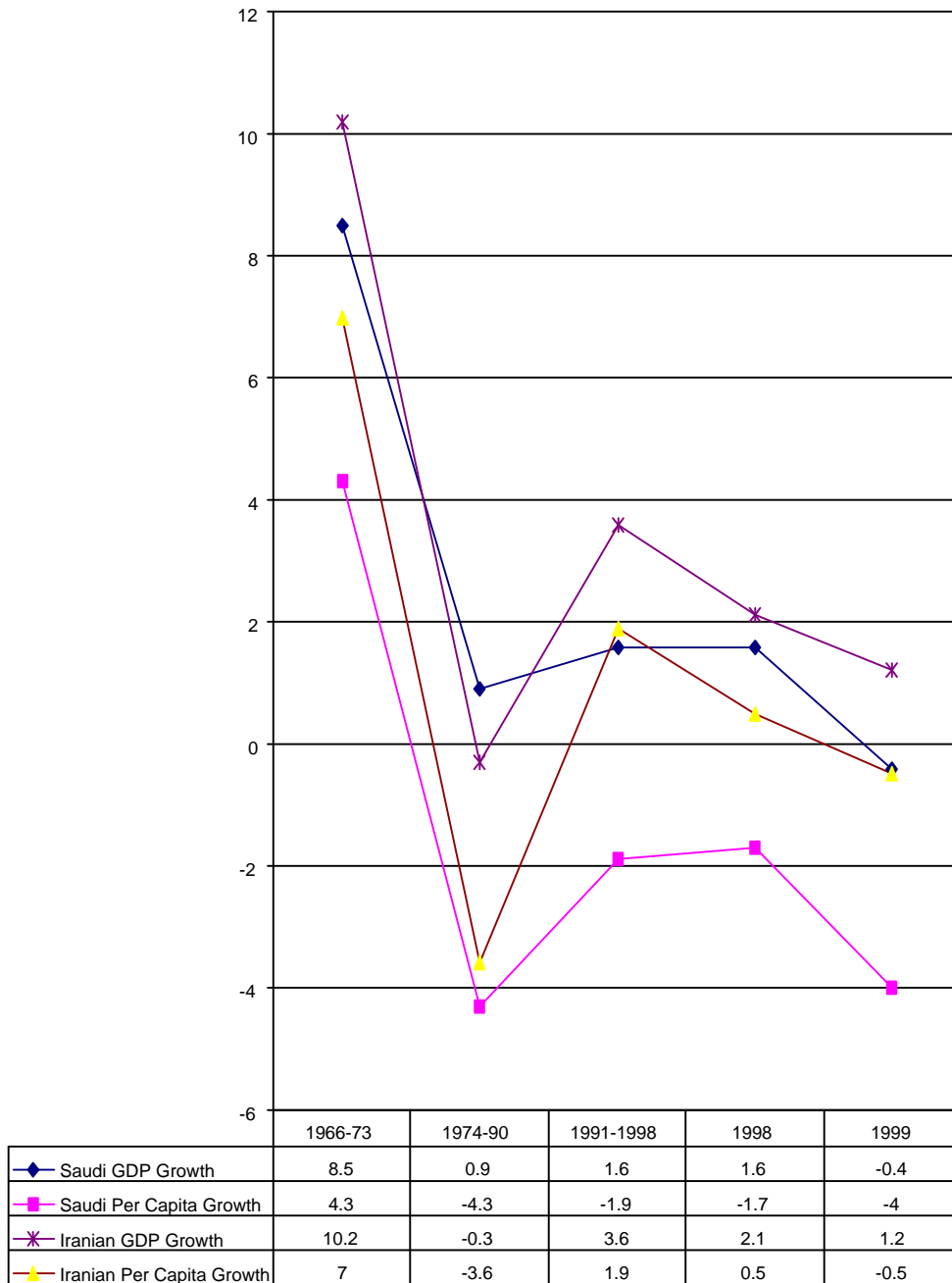
Boom and Bust in Per Capita Oil Wealth: Saudi Arabia: Population Growth in Millions and Total Oil Income and GDP in Constant 1989 Riyals (Population in Millions; Economic data in 10 Billions of Constant Saudi Riyals)



	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.

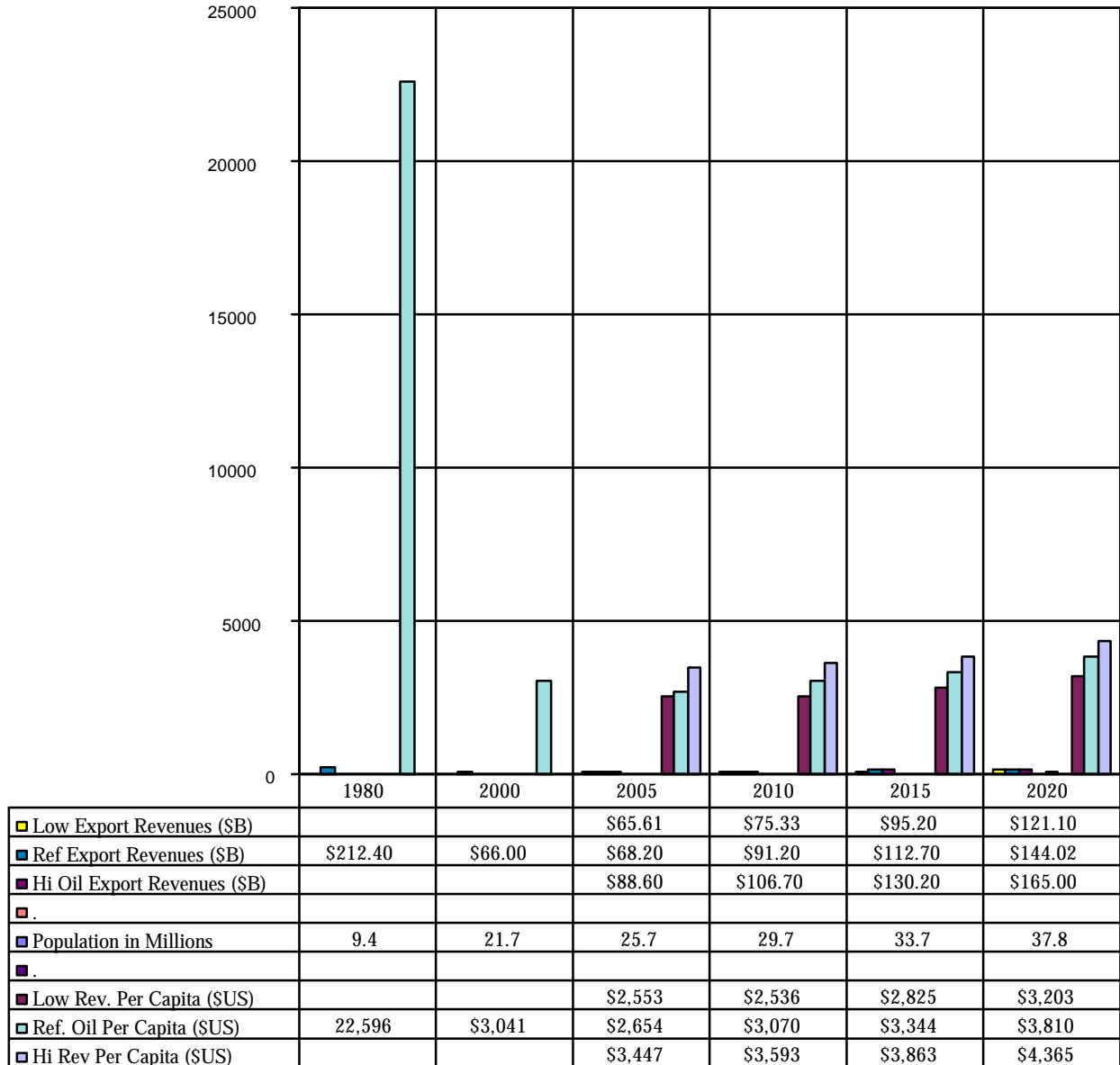
Saudi Annual Growth in GDP and GNP Per Capita: 1966-1999



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

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

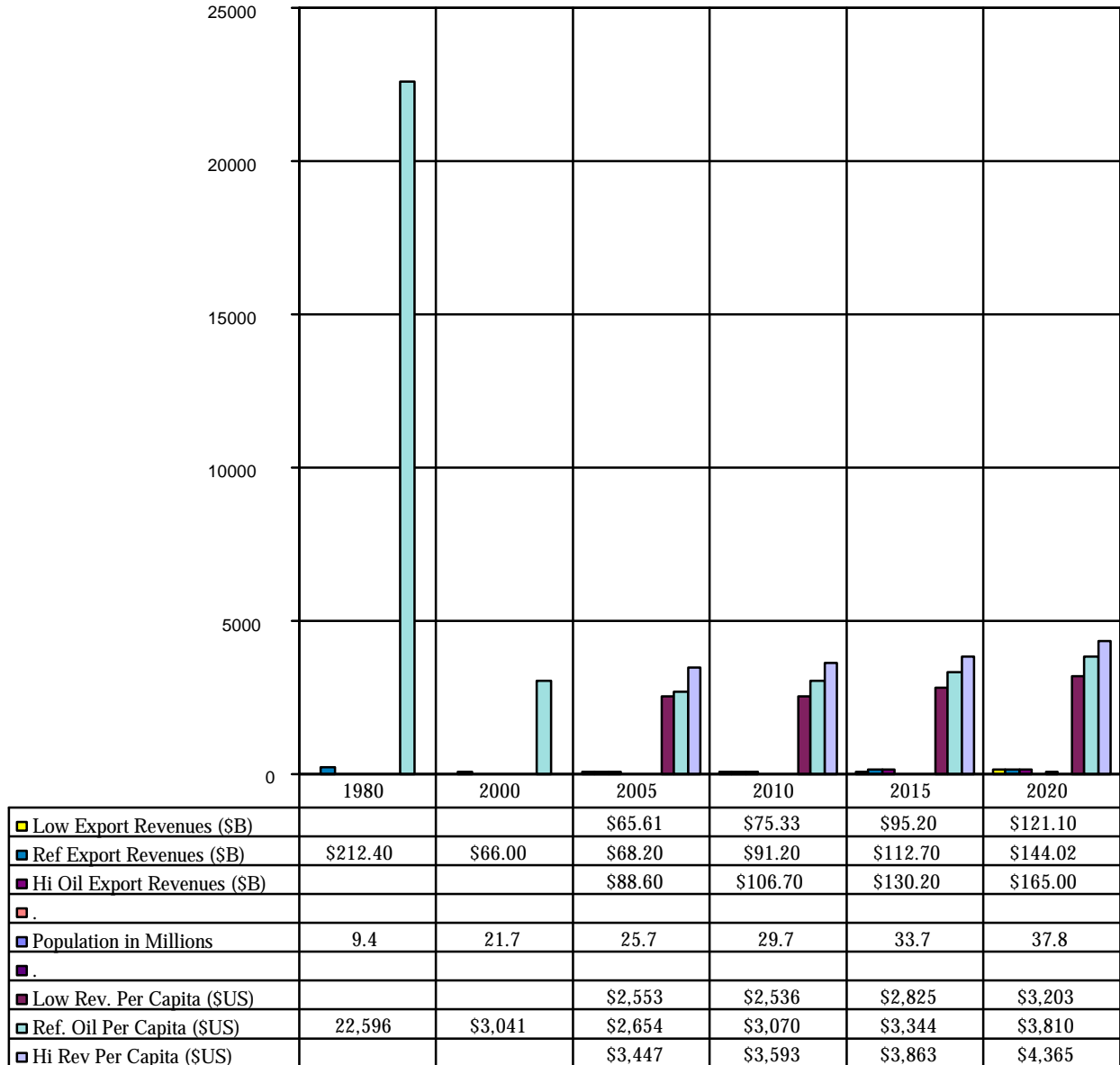
(EIA Cases. Revenues Equal Daily MMBD X 365 X oil price. Export Revenues equal 0.81 X Total Revenues. Prices in Constant \$US2000. Revenues per capita are Total export Revenues Divided by Population)



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.

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

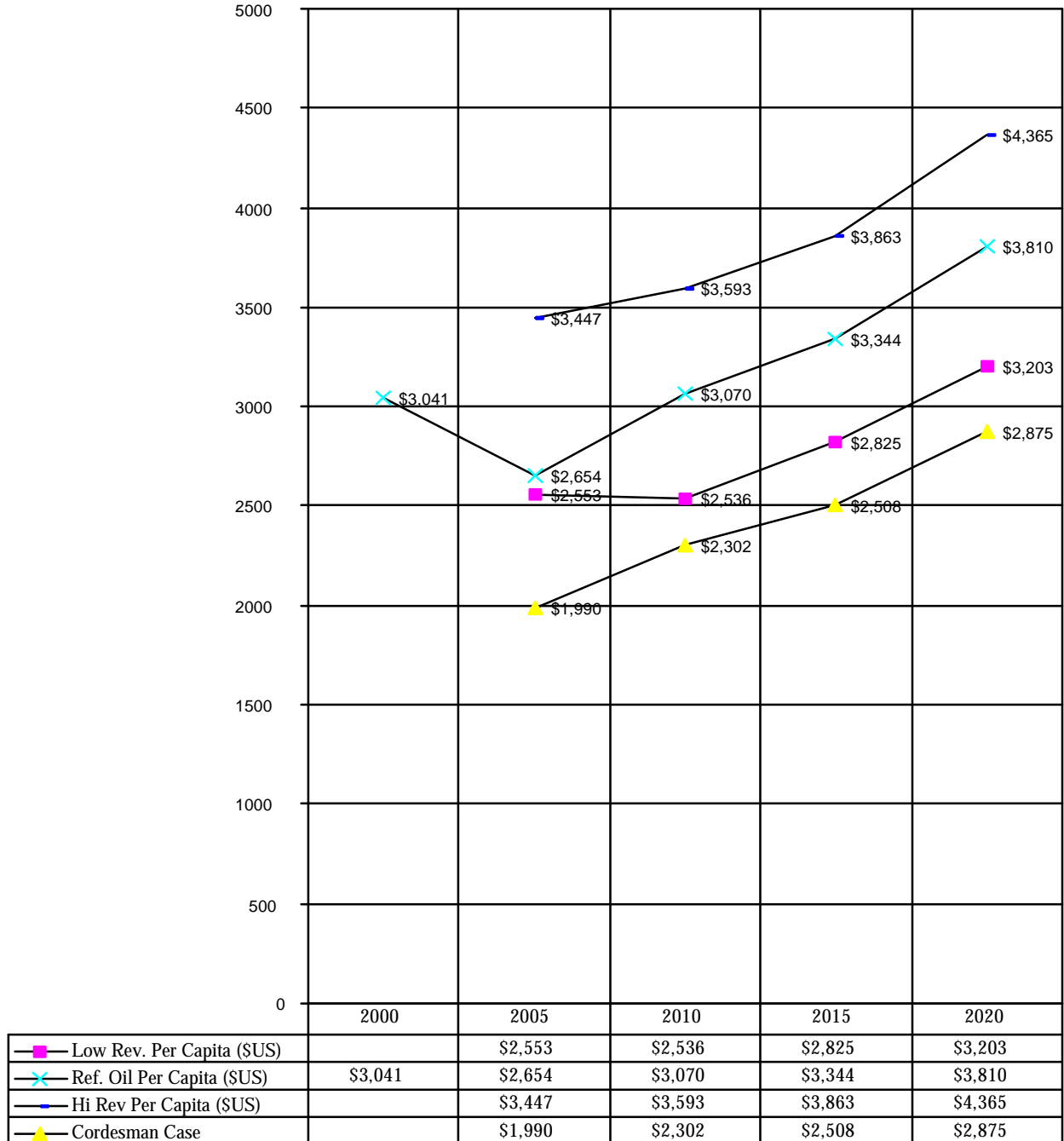
(EIA Cases. Revenues Equal Daily MMBD X 365 X oil price. Export Revenues equal 0.81 X Total Revenues. Prices in Constant \$US2000. Revenues per capita are Total export Revenues Divided by Population)



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.

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)

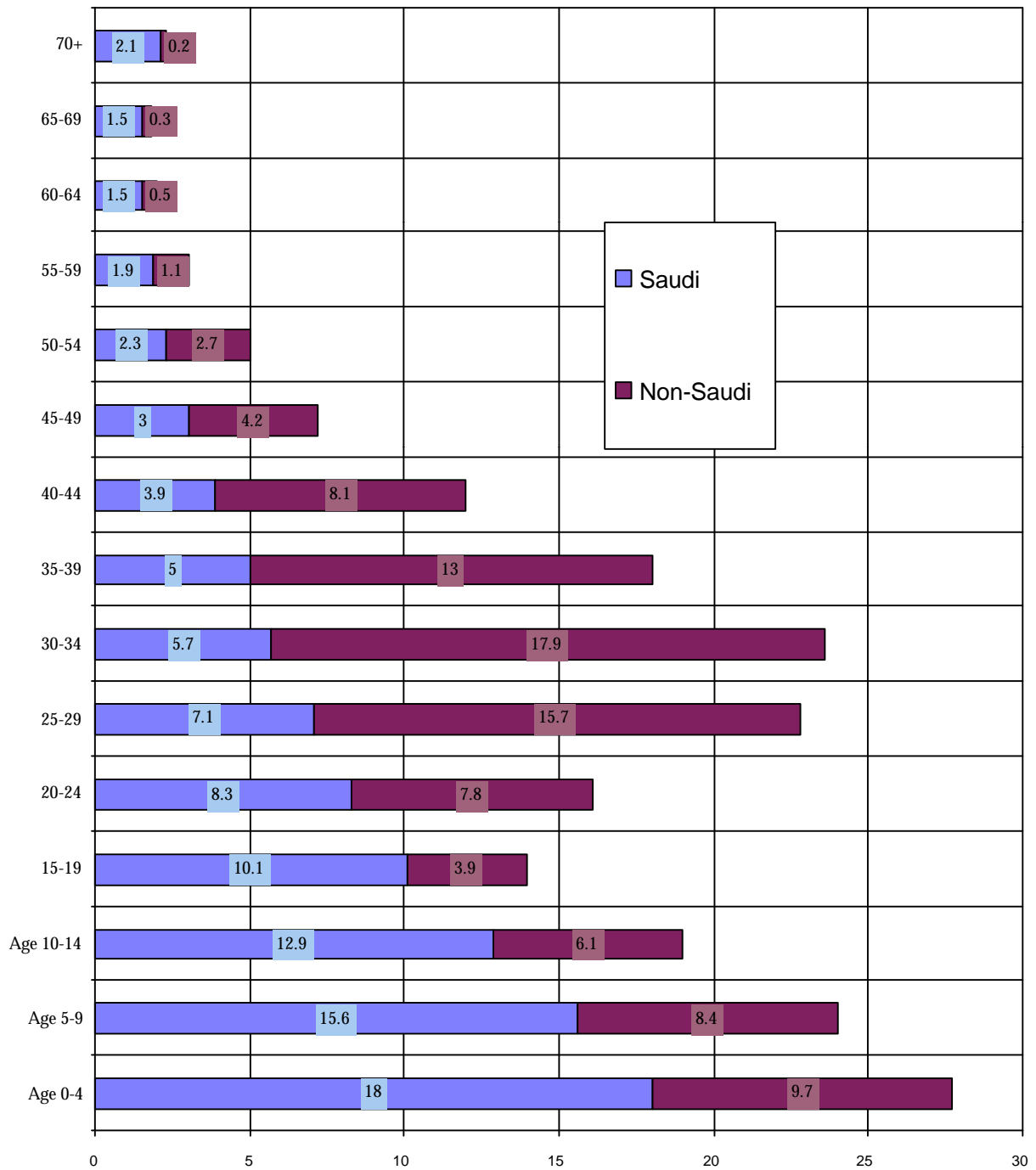


Source: Adapted by Anthony H. Cordesman from EIA, International Energy Outlook, DOE/EIA, DOE/EIA-0484(2000), March 2000, pp. 38, 39, and Table D.

Part Four

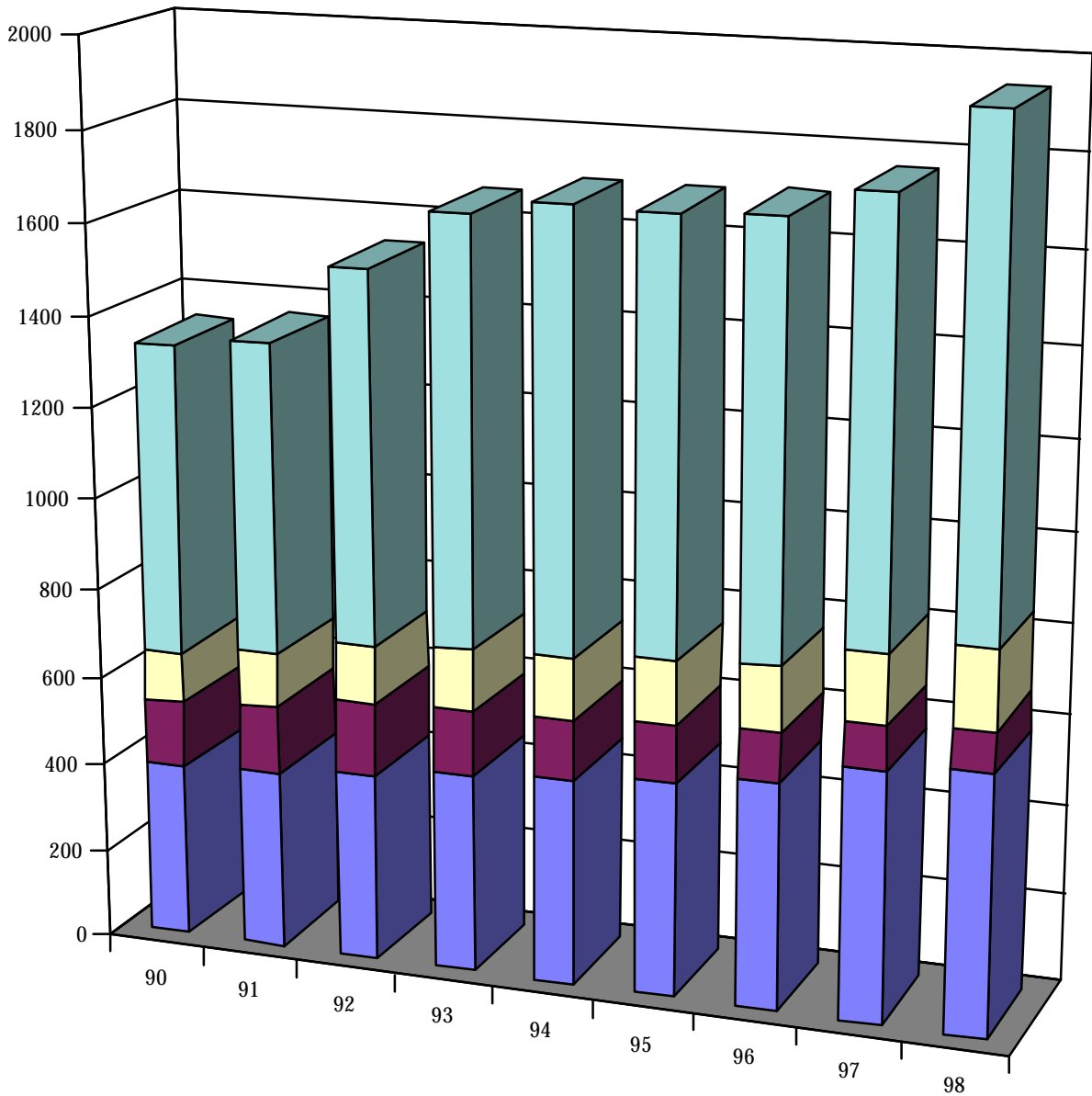
Saudisation and Social Change

The “Youthening” of Saudi Arabia: 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.

Saudisation Isn't Working: Recent Trends in the Saudi Labor Force (In Thousands)

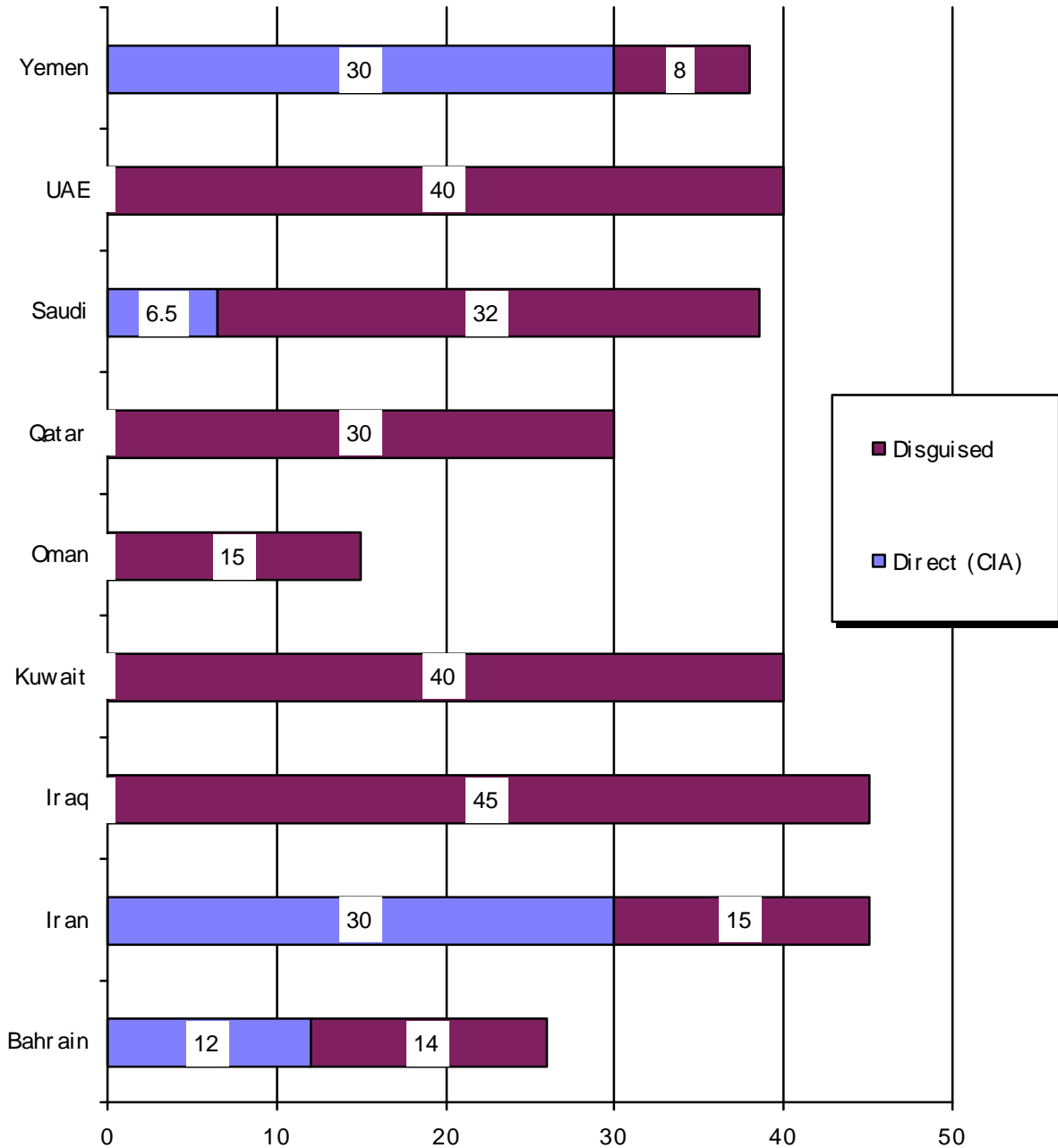


	90	91	92	93	94	95	96	97	98
Foreigners in Private Sector	686.2	686	822.2	938.1	964.4	945	940.8	949.6	1097.8
Saudis in Private Sector	114.2	122.2	128.9	136	137.1	137.6	142.7	155.3	173.6
Foreigners in Government	147.9	151.6	159.6	144.9	133	128.7	109.7	96	89
Saudis in Government	386.8	396.9	420.7	444.4	460.8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

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

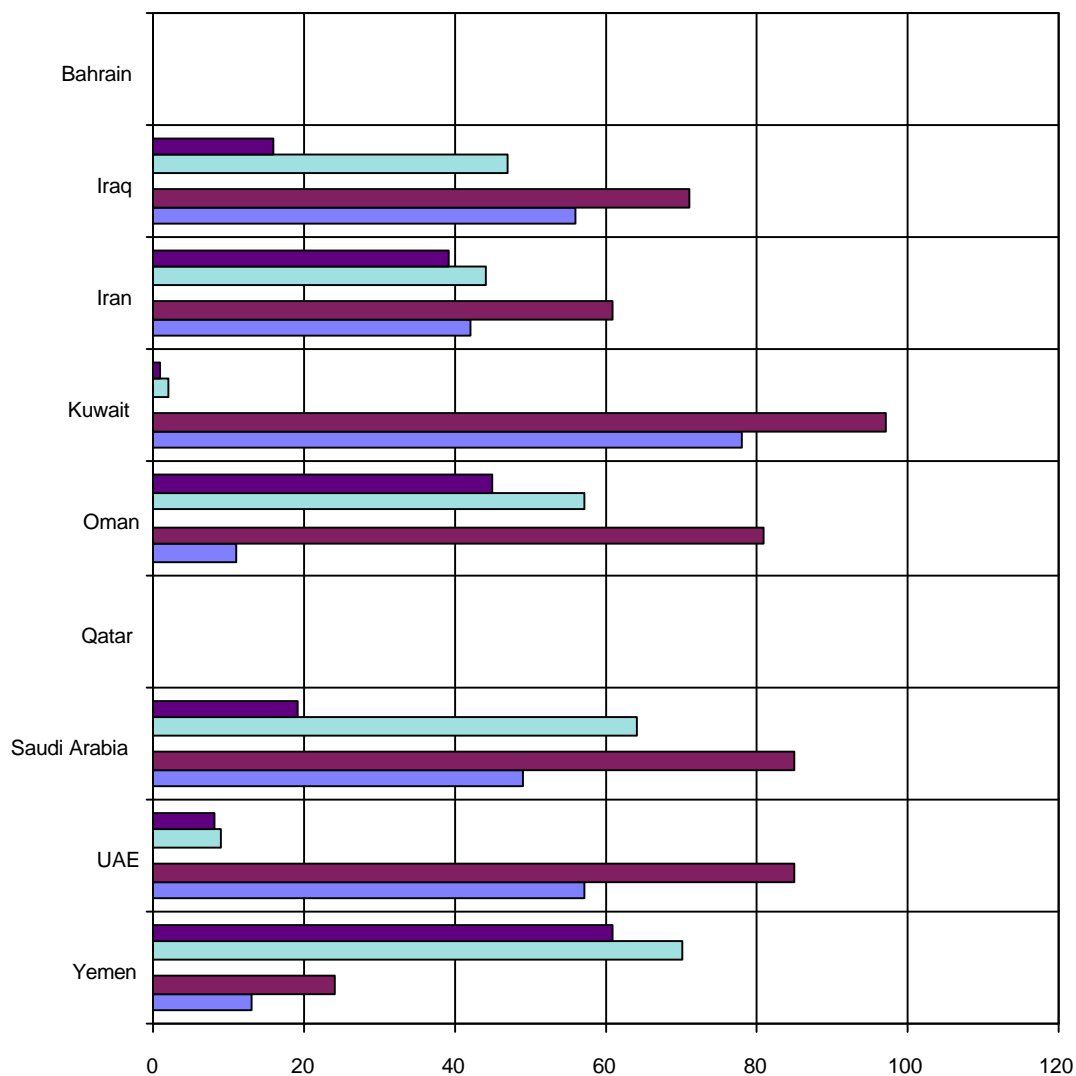
(Rate measured in Percent)



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.

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

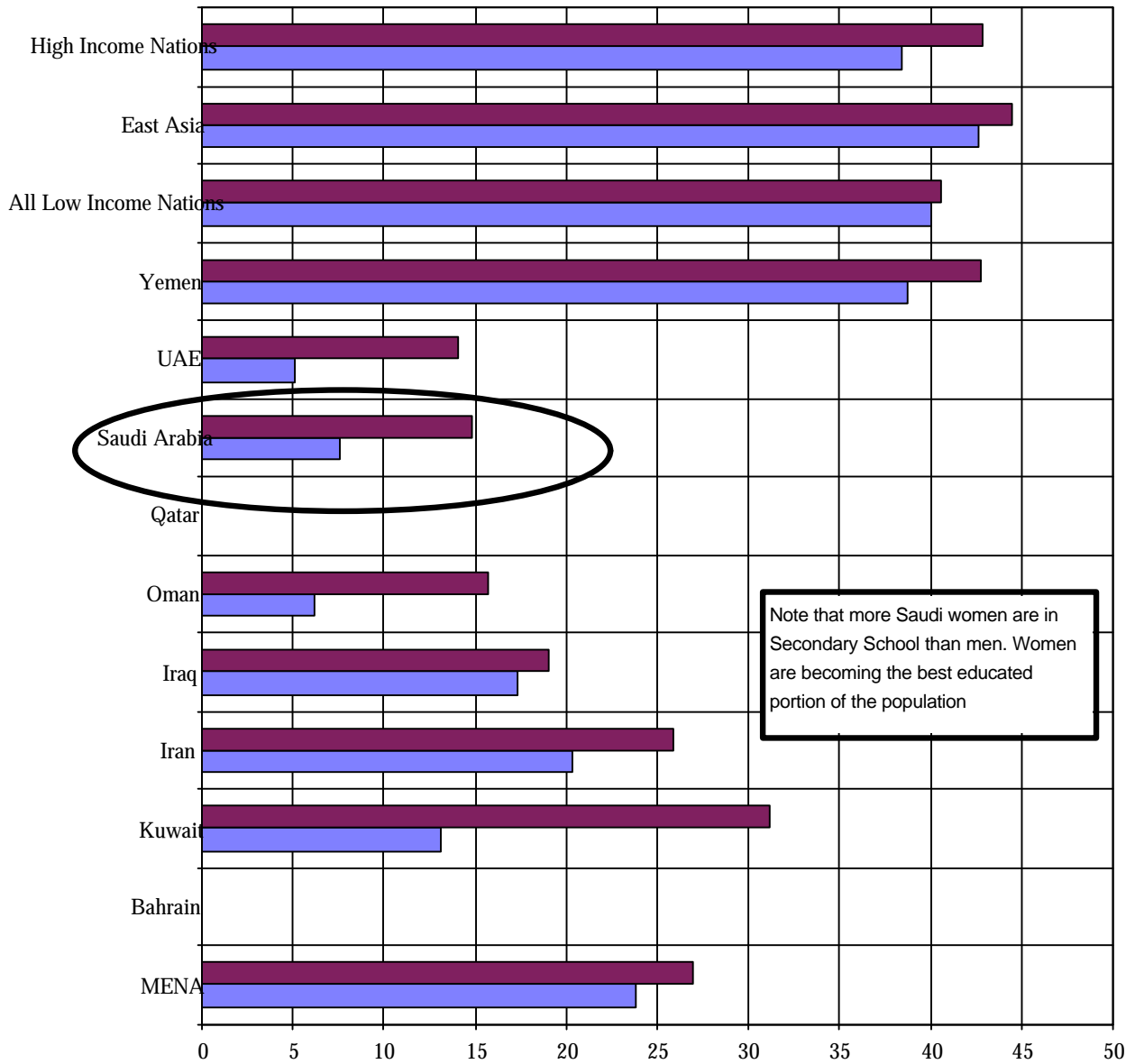
(Labor in Agriculture in Percentages of labor force and Urbanisation as Percent of Total Population)



	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

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



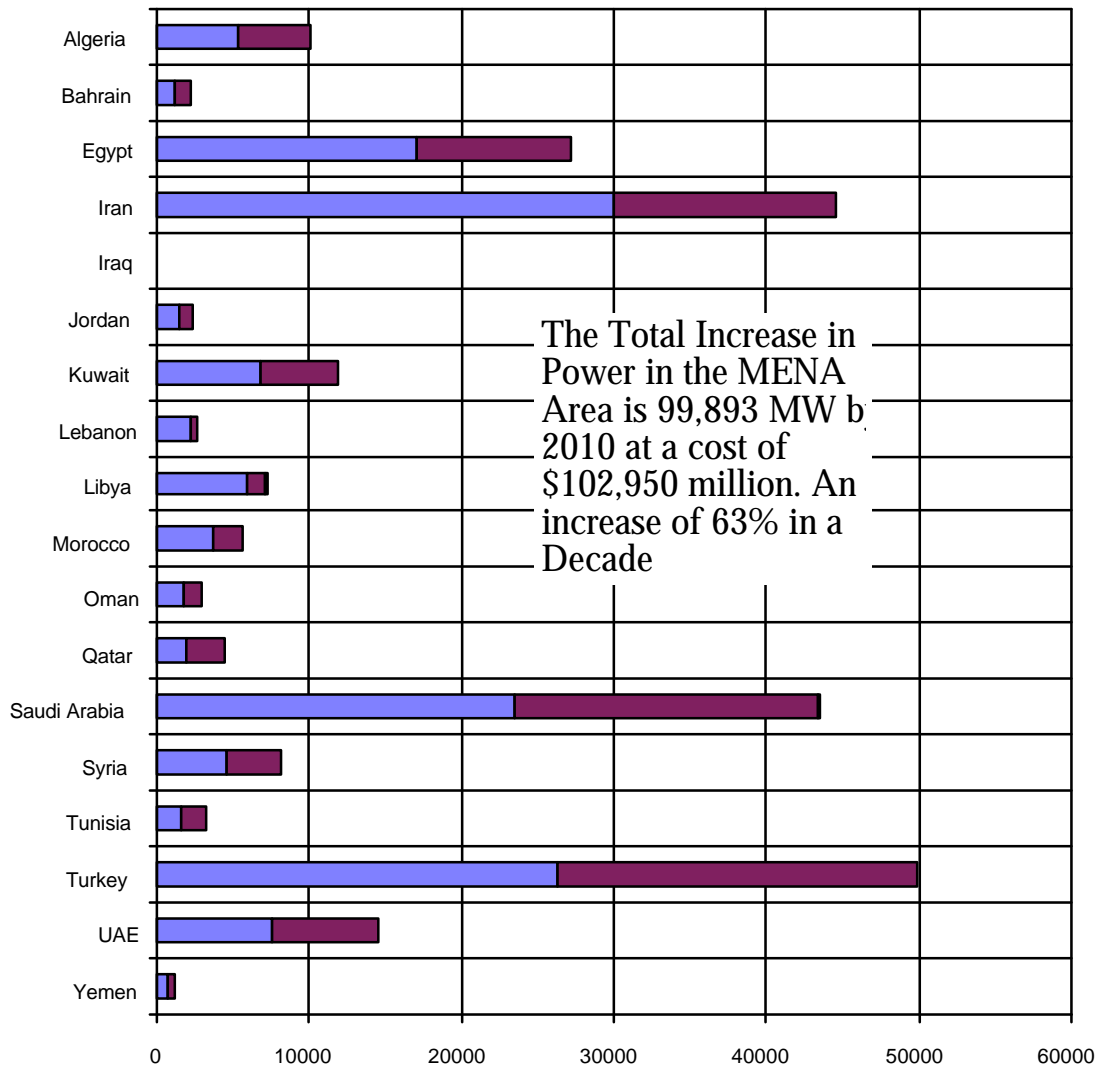
	MENA	Bahrain	Kuwait	Iran	Iraq	Oman	Qatar	Saudi Arabia	UAE	Yemen	All Low Income Nations	East Asia	High Income Nations
■ 1998	26.9	-	31.2	25.9	19	15.7	-	14.8	14.1	42.7	40.6	44.5	42.9
■ 1980	23.8	-	13.1	20.4	17.3	6.2	-	7.6	5.1	38.7	40	42.6	38.4

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

Part Five

Major Budget Pressures from Infrastructure, Military Spending and Entitlements

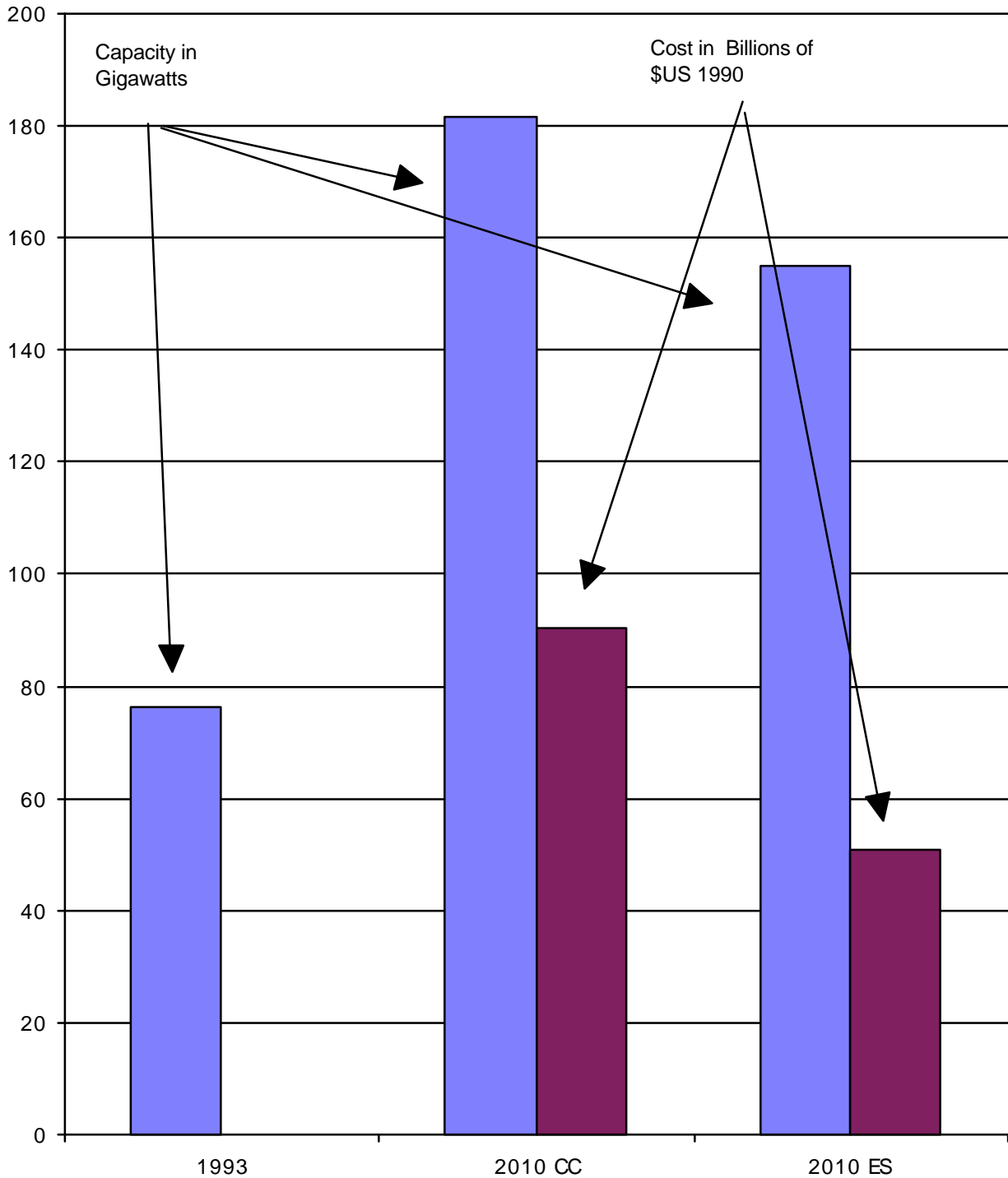
The Infrastructure Challenge will Be Acute During the Coming Decades: Electric Power as a Case Example



	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.

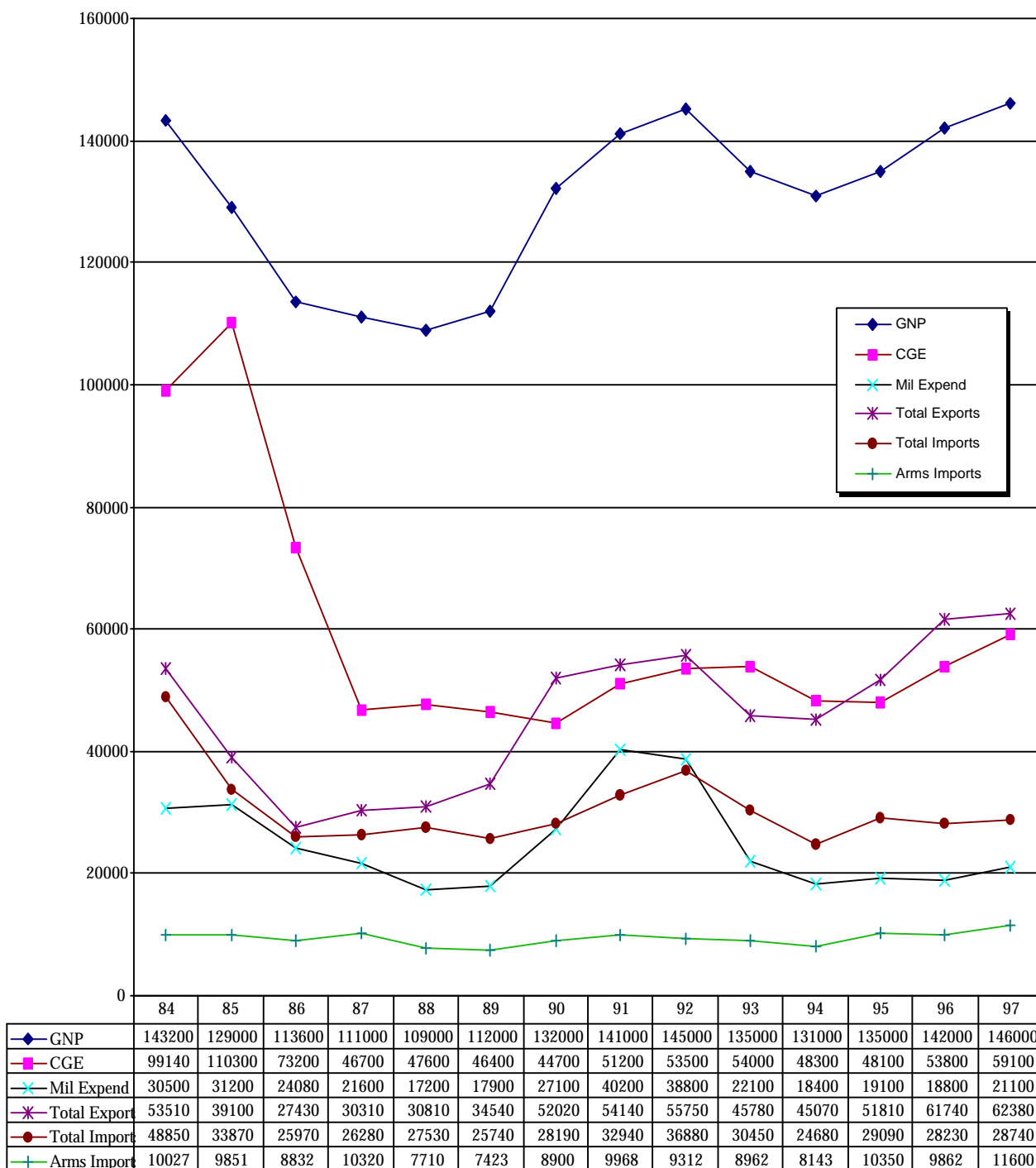
Saudi Arabia's Massive Needs for Infrastructure Investment: Electric Power as a Test Case



CC = Capacity Constrained or maximum production ES = Energy Savings, or reduced energy use.

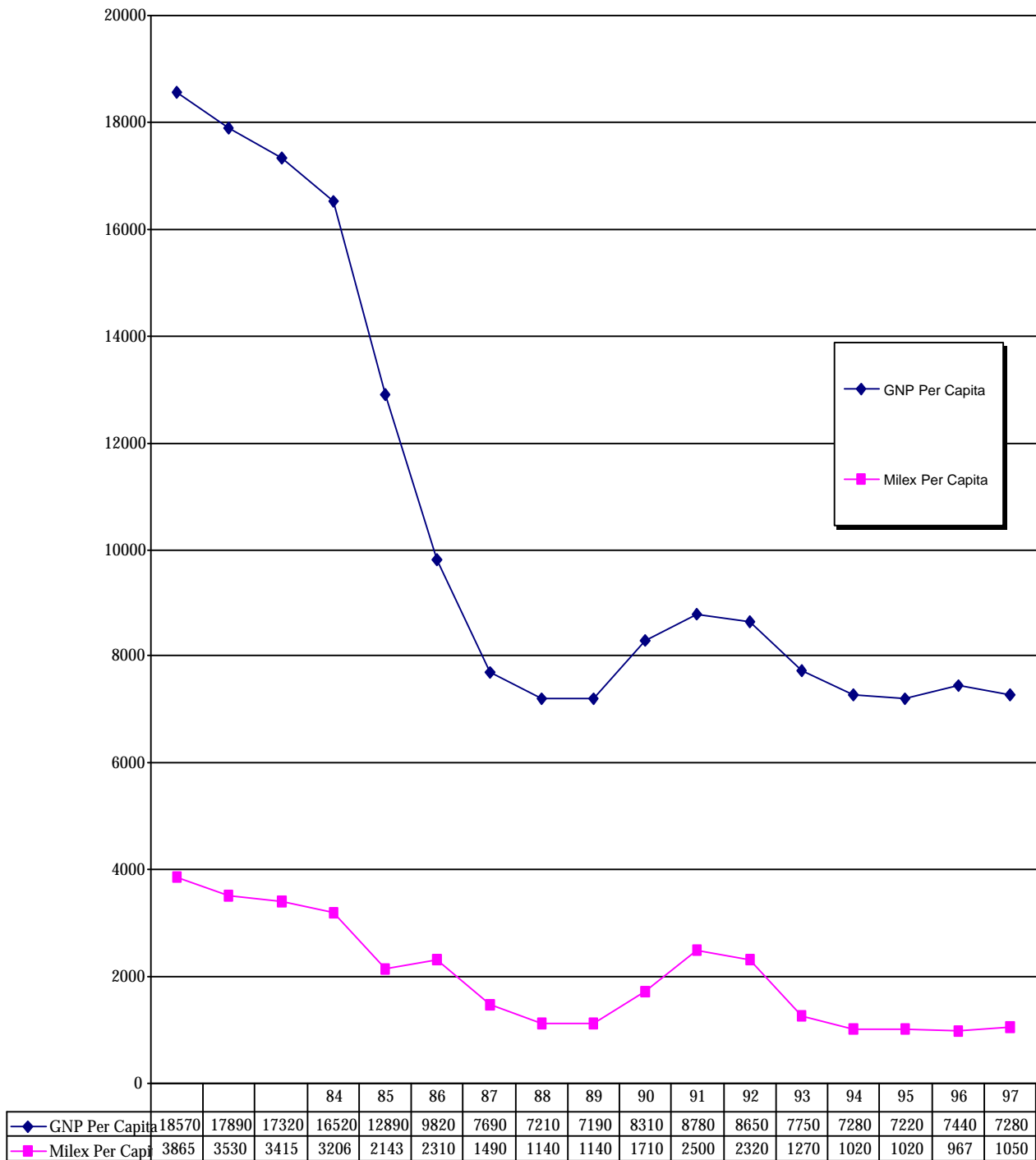
Source: Adapted by Anthony H. Cordesman from IEA, *World Energy Outlook, 1996*, pp. 189-191.

**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 Arms Control, Washington, 1999.

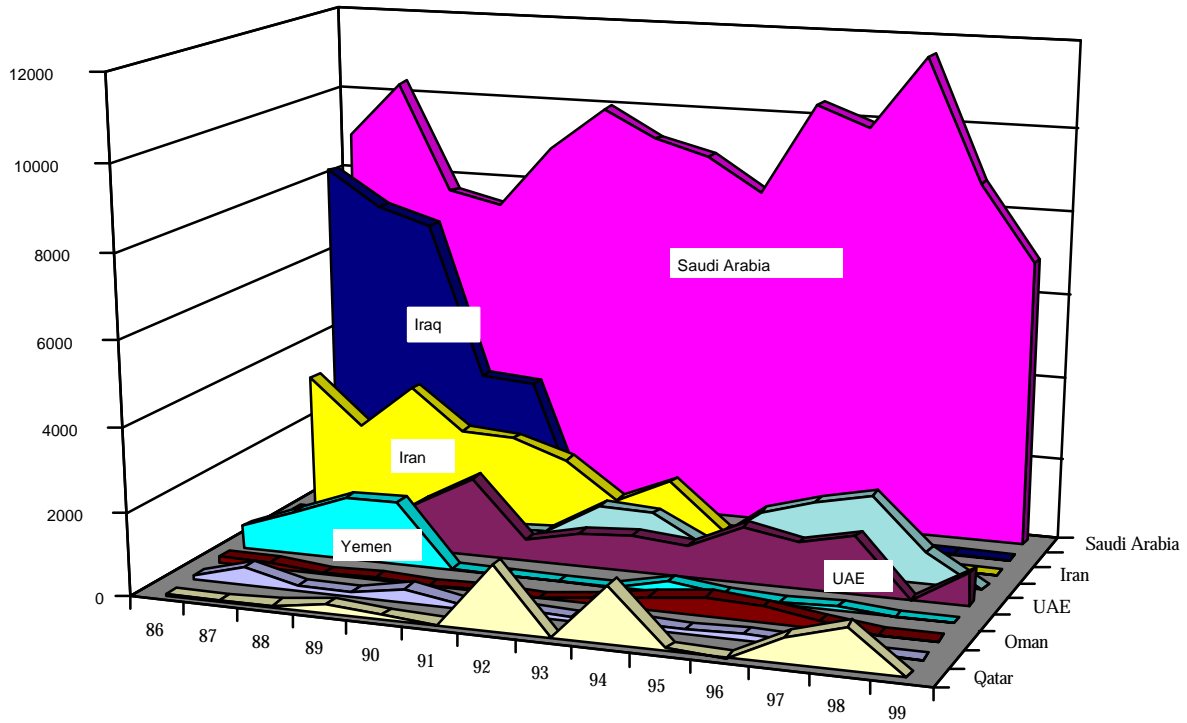
Saudi GNP Per Capita Versus Military Expenditures Per Capita: 1980-1997 (Constant \$97 millions)



Source: Adapted by Anthony H. Cordesman from US Arms Control and Disarmament Agency and Bureau of Arms Control, US State Department, World Military Expenditures and Arms Transfers, GPO, Washington, various editions.

Comparative Arms Imports of the Gulf States – 1986-1999

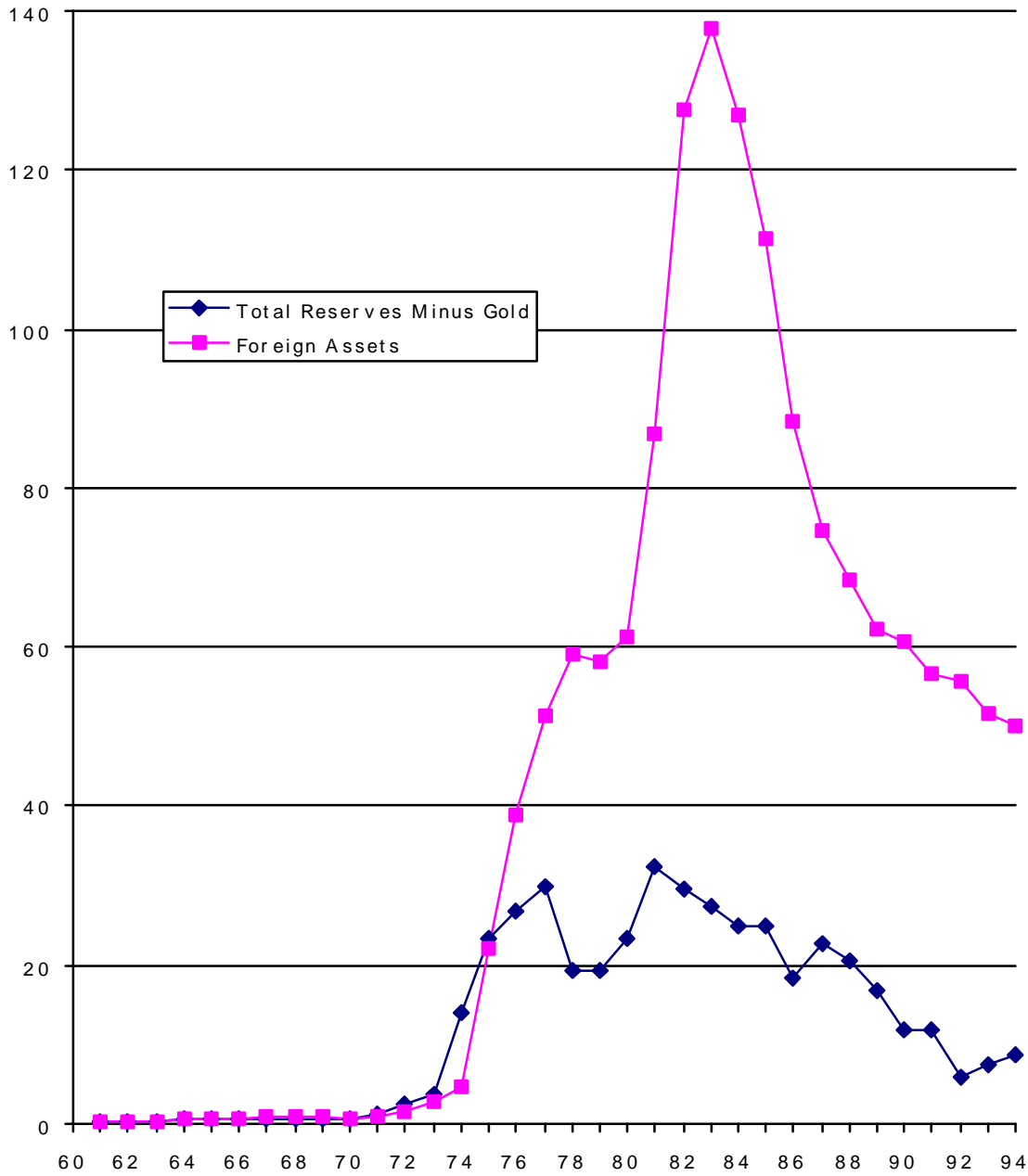
(Value of Deliveries in Constant \$1997 Millions)



	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Qatar	7	12	38	219	117	23	1552	11	1375	52	5	625	1000	
Bahrain	91	418	126	97	328	79	122	86	106	72	132	90		
Oman	178	157	38	73	12	57	11	140	307	445	376	160		
Yemen	564	1045	1523	1554	35	41	6	22	275	145	81	110		
UAE	247	261	404	1187	1874	532	804	891	793	1346	1118	1400		800
Kuwait	271	248	152	316	316	374	1109	1080	412	1346	1728	2000	800	
Iran	3305	2221	3286	2312	2225	1812	942	1512	412	342	356	850		
Iraq	8288	7448	7078	3407	3279	0	0	0	0	0	0	0		
Saudi Arabia	8978	10320	7710	7423	8900	9968	9312	8962	8143	10350	9862	11600	8700	6900

Source: Adapted by Anthony H. Cordesman from US Arms Control and Disarmament Agency, *World Military Expenditures and Arms Transfers*, GPO, Washington, various editions.

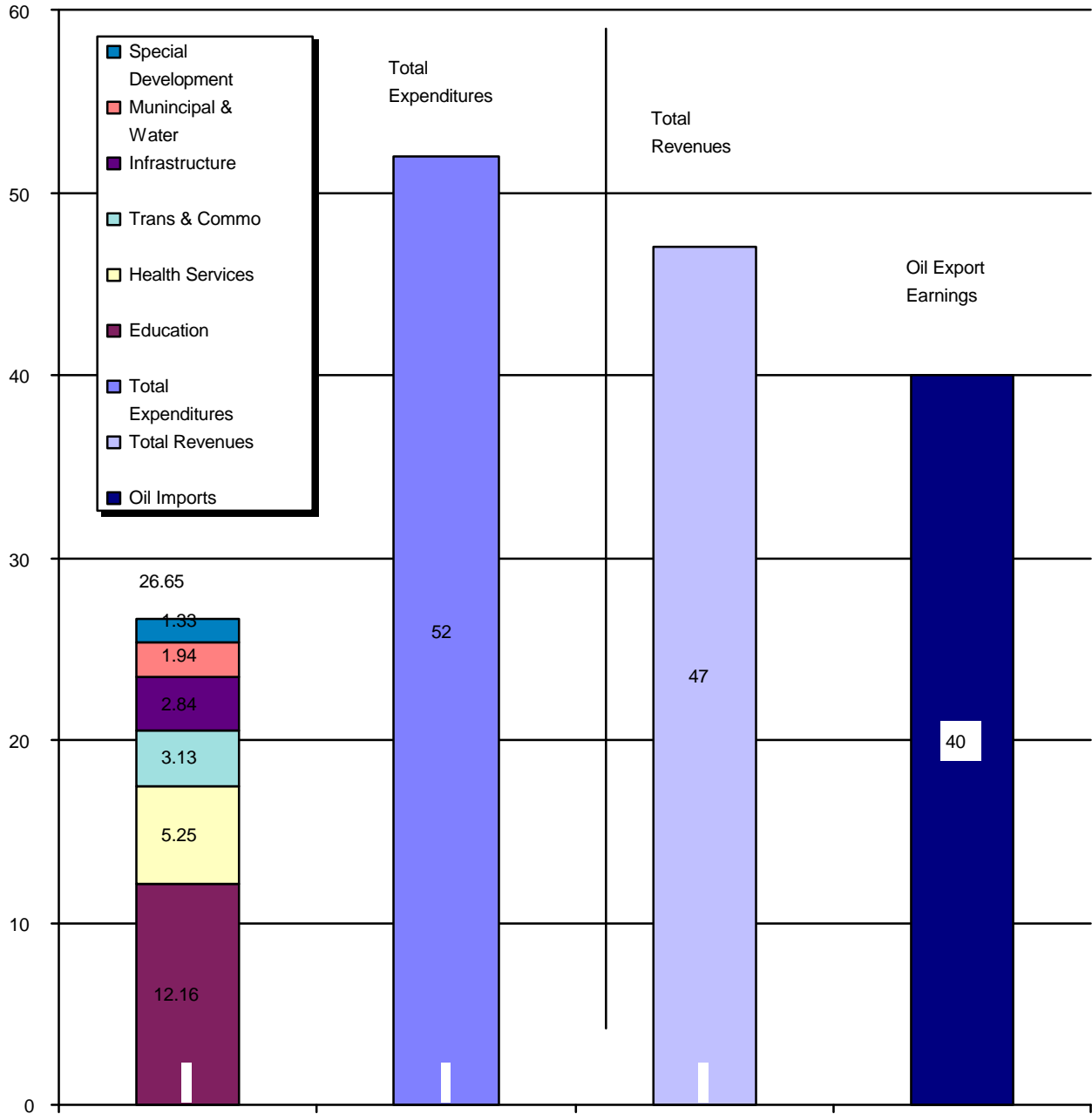
Saudi Arabia: Liquidity in Billions of US Dollars: 1960-1994



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.

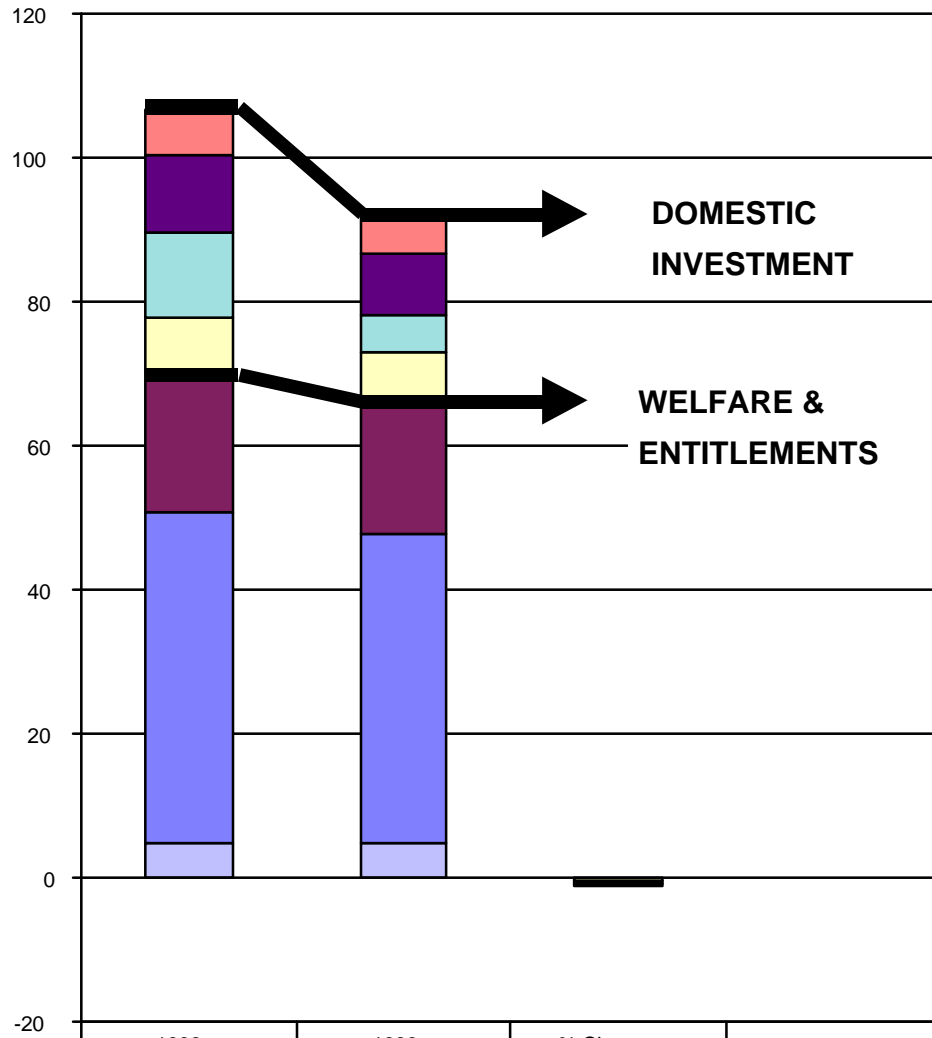
Saudi Oil Exports, Budget Expenditures, Budget Revenues, and “Entitlements” in 1998 (in \$US billions)



Source: Adapted by Anthony H. Cordesman from US-Saudi Business Brief, Winter, 1998, p. 1, and Middle East Economic Digest, April 3, 1998, p. 2.

Pressures on the Saudi Budget: The Entitlements Problem

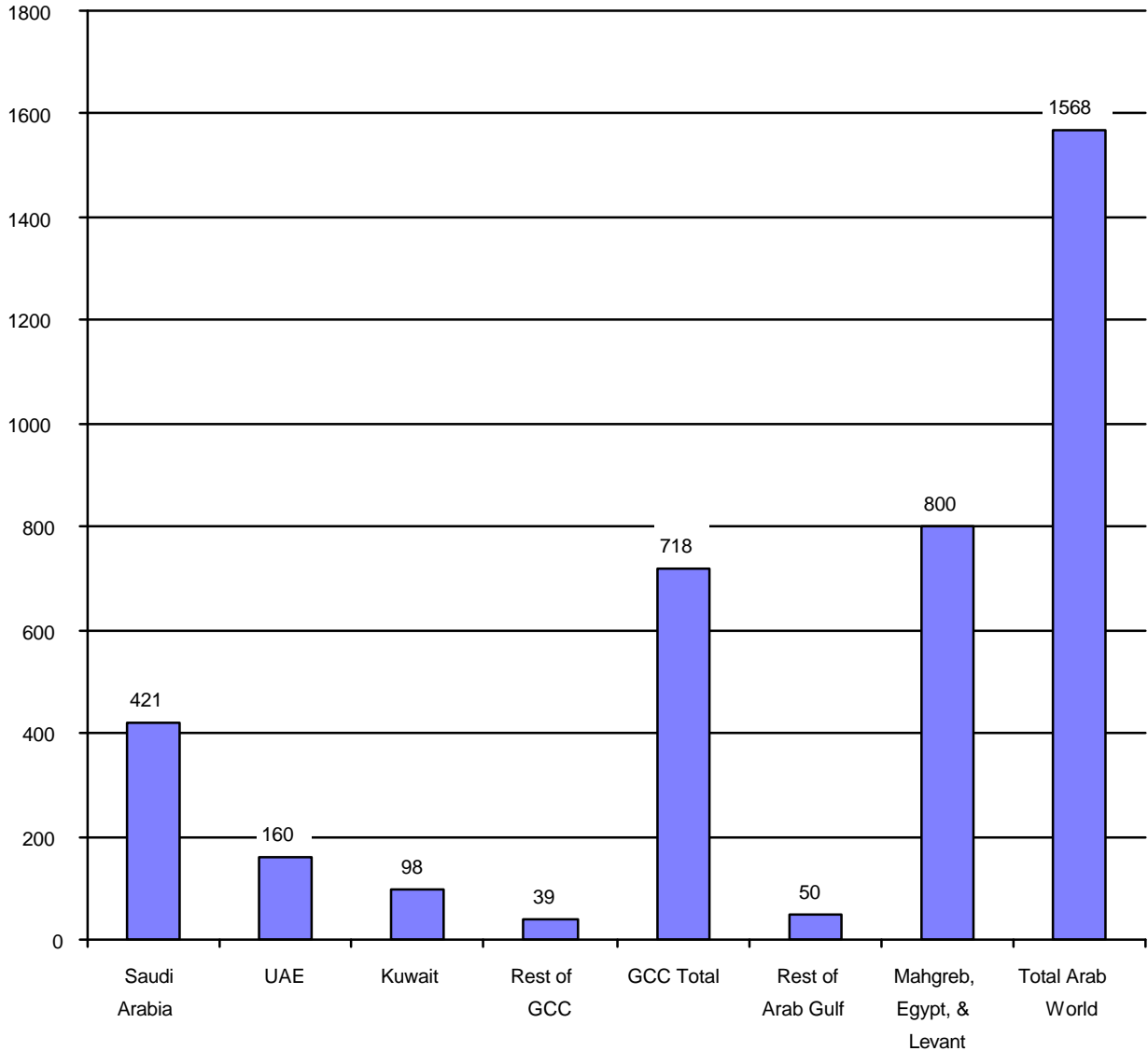
(in billions of Saudi Riyals)



	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.

The Arab World Has Considerable Private Wealth of its Own: \$1,568 Billion is Held by 200,000 People
 (\$Current Billions)



Region	Individuals holding wealth
Saudi Arabia	78,000
UAE	59,000
Kuwait	36,000
Rest of GCC	12,000
GCC Total	185,000
Rest of Arab Gulf	15,000
Mahgreb, Egypt, & Levant	-
Total Arab World	-

Note: Total region does not include Lebanon and Mahgreb. Merrill Lynch estimates private wealth in these countries at \$800 billion.

Total world private wealth estimated at 16,700 billion. As a result, Saudi Arabia has 2.5% of world total, GCC has 4.2% of total, Arab world less Mahgreb has 4.6% of total, and Arab world with Mahgreb has 3.4% of total.

Adapted by Anthony H. Cordesman from Merrill Lynch, Gemeni, and Middle East Economic Digest, February 14, 1997, p. 9.

Part Six

Saudi Efforts to Find a Solution

Saudi Efforts at Reform

- **Reform Royal Family and Government**
 - **Strengthen family council, create real advisory councils for major policy issues.**
 - **Discipline corrupt princes, Find real jobs for poorer ones, review entitlements payments.**
 - **Added transparency in government, budgeting.**
 - **Rely more on open bidding and contracting.**
- **Restructure Investment and Business Practices**
 - **Privatize and quasi-privatize utilities and services, move more towards market prices.**
 - **Encourage foreign investment in upstream gas, and downstream oil and gas and other ventures.**
 - **Diversify economy by encouraging foreign and private domestic investment in non-petroleum ventures. Cut taxes and reduce barriers at every level.**
 - **Permit foreign ownership of companies and property**
 - **Added transparency in government, budgeting.**
 - **Restrict foreign company use of middlemen and agents.**
 - **Use membership in WTO to force modern business practices and competitive business operations, reduce tariffs and regulatory barriers, and prevent tariffs on Saudi petrochemicals.**
- **Deal with Population Growth and Social Change**
 - **Make Saudisation real. Force reductions in foreign workers and strengthen social and economic incentives to find jobs..**
 - **Expand and modernize infrastructure.**
 - **Phase down subsidies and those entitlements not vital to “social contract.**

Macroeconomic Goals of the Seventh Development Plan – 2000-2004 (1420-1425)

- **Achieve average annual real GDP growth of 3.16%**
 - **Emphasize private sector that is expected to grow at average annual rate of 5.04%.**
 - *But, population growth rate is at least 3.0%. Plan essentially calls for zero increase in real per capita income during 2000-2004.*
- **Achieve average annual non-oil growth rate of 4.01%**
 - **Increase share of non-oil sectors in GDP from 68.4% in 1999 to 71.6% by late 2004.**
 - **Achieve average annual growth rate of 3.44% in services sector, 3.05% in agriculture, 8.34% in non-mining, 5.14% in industrial sector.**
 - **Electricity, gas, and water sector to grow by average annual rate of 4.62% and construction by 6.17%.**
- **Achieve average annual growth rate of 8.29% in petrochemicals and 7.16% in other manufacturing.**
 - **No goals are set for increase oil and gas production, or maintaining surplus capacity. Saudi officials discuss raising capacity to 13 MMBD; maintaining 2 MMBD cushion of surplus production.**
 - **Plan calls for increased gas production and to develop reserves and domestic use in order to serve development objectives and contribute in the diversification of income sources.**
 - **Enhance private sectors participation in petroleum industries.**
 - **Consolidate efficiency in production, refining, and distribution.**
- **Achieve average annual real growth rate of 6.85% in investment; increase investment from 22.7% of GDP in 2000 to 25.4% in 2004.**
- **Reduce State budget deficit as percent of GDP for –10.8% in 1999 to zero by 2004 by increasing government non-oil revenues and rationalizing government expenditures.**
 - **Improve current account balance and go from deficit equal to 3% of BDP in 1999 to surplus of 6.9% in 2004.**

Labor Goals of the Seventh Development Plan – 2000-2004 (1420-1425)

- **Increase share of Saudi nationals in total national employment from 44.2% in 1999 to 53.2% in 2004.**
 - **Provide 817,300 new jobs for Saudi nationals.**
 - **Create 488,600 of these jobs by replacing foreign workers.**

- **Create 328,6000 new job opportunities over five years**
 - **Raise total employment from 7.17 million workers in 1999 to 7.5 million in 2004.**
 - **Raise employment in non-oil private sector from 6.16 million to 6.47 million.**
 - **94.6% of the total new job opportunities created during 1999-2004 will be in the private sector.**

- *But, in 2000, 221,000 males and 222,000 females entered the job market. This is over 440,000 a year in 2000, and the number will rise significantly by 2004.*
 - *80% employment would require 352,000 jobs a year for men and women and 175,000 for men alone.*
 - *The total over five years would be more than 2 million jobs for men and women and over 1 million for men.*

Educational Goals of the Seventh Development Plan – 2000-2004 (1420-1425)

- **Total number of male and female students will increase from 4.4 million in 1999 to 4.52 million in 2004. There will be slightly more female students than male.**
- **Students in general education will increase from 3.16 million to 4.53 million.**
- **Students in higher education will increase from 263,000 to 480,000. (280,000 females versus 200,000 males in 2004) Total graduates will increase from 154,000 to 273,000. (127,000 males vs. 146,000 females.)**
- **Students in technical education will increase from 33,000 to 55,000.**
 - **Total graduates will increase from 27,000 as of 2000 to 50,000 in 2004.**
- **Students in vocational education will increase from 12,000 to 17,000.**
 - **Total graduates will increase from 28,000 as of 2000 to 46,000 in 2004.**
 - **Raise employment in non-oil private sector from 6.16 million to 6.47 million.**
 - **94.6% of the total new job opportunities created during 1999-2004 will be in the private sector.**
- ***But, in 2000, 221,000 males and 222,000 females left school. This is over 440,000 a year in 2000, and the number will rise significantly by 2004.***

Infrastructure and Services Goals of the Seventh Development Plan – 2000-2004 (1420-1425)

- **Construct 44 new hospitals with 50 bed and 15 with 100-500 beds, 2 rehabilitation centers with 300 beds. Add 4,630 beds to existing hospitals. Start 10 replacement hospitals.**
 - **Open and operate 250 primary health centers, establish 500 new ones. Open 60 emergency centers and establish 80,.**
- **Start 12 new desalination plants with output of 2.1 cubic million meters of water per day and 2502 MW of electricity.**
 - **Complete 22 dams. Start 62 new ones, and renovate 25.**
 - **Provide Riyadh with 360,000 cubic meters more of water per day.**
 - **2,500 km of new waterworks, replace 2000 km, and provide 130,000 new connections.**
 - **2800 km of waste water connections, treatment plants with 450,000 cubic meter per day capacity, implement 170,000 connections.**
- **Provide electricity to 793,000 new customers and raise power to residential customers from 36,820 Kwh in 1999 to 39,116 in 2004.**
 - **Raise total employment from 7.17 million workers in 1999 to 7.5 million in 2004.**
- **Raise telephone connections to 22-25 per 100 people, eliminate waiting lists and shortages in rural areas.**
 - **Increase radio broadcast coverage from 95% to 97% of population.**
 - **Increase television coverage per channel from 75-90% to 85-95%.**
- **Asphalt 1,600 km of main roads and 11,000 km of secondary roads.**
- **Provide 110 million square meters of residential land for housing; construction 70,000 new housing units.**
 - **Provide 57,000 housing loans at cost of SR15.7 billion.**