SAVING AND INVESTMENT AND THE EFFECTS OF FINAN-
CIAL INTERMEDIARIES ON THE RATE OF
CHANGE OF G.N.P. IN IRAN
1936-71

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ABSTRACT*

There is a close relationship between the quantity   of
saving and the rate of capital formation and economic growth
in a given economy. The quality of this saving also affects
the rate of capital formation and thus the quality of econo-
mic growth and development.

The present article is an attempt to calculate the   qu-
antity of saving in Iran during 1936-1971 period.   Attempt
has also been made to measure the effect of the Oil   sector

on the quantity of saving in Iran. Thus private . saving, public saving and national saving in Iran has been calcula- ted and the effect of the Oil sector on each of these savi- ngs has been measured (Tables 1-2) Attempt was made to eva- luate the pattern of saving and its effects on the Sources- and-Uses-of-Funds and Gross Domestic Capital Formation   in Iran during the same period (Table 3 and Figures 1-3).

It is the contention of this paper that a change   in the rate of either deposits by different sectors   (private or public) in financial intermediaries or a change in   the rate of credit extended by these institutions to   various sectors of the economy in Iran will tend not only to affect investment but also the rate of growth of capital formation and ultimately the rate of change in G.N.P. It was   also been suggested, in this papers with some reservation howev- er, that the ratio of private deposits to G.N.P. may be ta- ken as a leading indicator to determine the future   trends in investment ratio as well as the rate of change in G.N.P.

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The Methodology for the Calculation of Saving in Iran:

To calculate Private Saving, the following   standard procedure of National Income Analysis has been utilized.

$$Y = C + I + G + X - M \qquad (1)$$

$$Y = C + S + T \qquad (2)$$

$$(1 - 2) \; 0 = 0 + (I-S)+(G-T)+(X-M)$$

$$o \quad S = I + (G-T)+(X-M) \qquad (3)$$
$$o \; o$$

To calculate Private Saving including the impact   of the oil sector, the following procedure has been utilized:

Lets assume:

$$(X-M) = A$$

$$(X_o-M) = B$$

$$X_o = X + O$$

To get Private Saving with oil:

$$S_o = I + (G-T)+(X_o-M) \qquad (4)$$

To calculate National Saving without oil, the following formula has been utilized:

National Saving = Private Saving + Government Saving

$$S = I + (G-T) + (X-M)$$

$$S + (T-G) = I + (X-M)$$

$$S_n = S + T - G = I + (X-M) \qquad (5)$$

Where:

    Y = GNP
    C = Private Consumption
    I = Investment
    G = Government Expenditure
  X-M = Export-Import = Balance of Trade
    S = Private Saving
    T = Government Taxation
    S_o = Private Saving including oil
    X_o = Export including oil tax revenue
    O = Trade Surplus from oil
    S_n = National Saving

Using the above methodology one can get a consistent series for the private, public and national savings of the Iranian economy over a long period of time. Table 1 represents the results of these calculations which give these savings in the Iranian economy between 1936-71 period.

Table 1. Calculation of Saving in the Iranian Economy: 1936-1971
All Values at Current Prices in Million Rials

Year	Non Oil Iranian Balance of Visible Trade (X-M) I	Iranian Balance of Visible Trade Including Oil (X-M) II	G.D.F.C. Formation III	Actual Govern Expenditure (G) IV	Govern Revenue (T) V	Budget Govern Balance (T-G) VI	Private Saving Without Oil (I+III-VI) VII	Private Saving Including Oil (II+III-VI) VIII	National Saving Including Oil (II+III-VI+VIII) IX
	(1)	(1)	(2)	(3)	(3)	(3)	(3)		
1936	-384	1174	1400	1000	1000	0	1016	2574	2574
1937	-712	1165	1700	1248	1248	0	988	2865	2865
1938	-816	962	1900	1375	1376	+1	1083	2861	2862
1939	-248	1432	1600	2411	1728	-683	2038	3715	3032
1940	-79	1234	1400	2732	2716	-16	1337	2650	2634
1941	+34	1046	2100	3760	3200	-560	2694	3706	3146
1942	-1824	1659	4300	2663	2744	+81	2395	5878	5959
1943	-1177	2101	5100	3993	1891	-2102	6025	9303	7201
1944	-2556	1361	5500	4419	4575	+156	2788	6705	6816
1945	-2159	3453	5900	4312	4412	+100	3641	9953	9353
1946	-2639	5410	11100	5995	5464	-531	8992	17041	16510
1947	-3512	6482	11500	8021	5559	-2462	10450	20444	16510
1948	-3613	13527	13700	6904	7154	+250	9837	26977	27227
1949	-7537	7855	14700	10687	7785	-2902	10065	25457	22555
				(4)	(4)	(4)	(4)		
1950	-3546	18638	13200	10060	10060	0	9654	31838	31838
1951	-3014	3828	13600	10152	10153	+1	10585	17427	17428
1952	+625	637	13800	9956	9444	-511	14936	14948	14437

Table 1. countinued: Saving in the Iranian Economy

	Non Oil Iranian Balance of Visible Trade (X-M) I	Iranian Balance of Visible Trade Including Oil (X-M) II	G.D.F.C. Formation III	Actual Govern Expenditure (G) IV	Govern Revenue (T) V	Budget Govern Balance (T-G) VI	Private Saving without Oil (I+III-VI) VII	Private Saving Including Oil (II+III-VI) VIII	National Saving Including Oil (II+III-VI+VIII) IX
1953	+2669	2933	18100	(5) 12456	(5) 11944	(5) -512	(I+III-VI) 21281	(II+III-VI) 21545	(II+III-VI+VIII) 21033
1954	+2264	4272	25500	22154	11294	-10860	38624	40632	29772
1955	-2863	6543	34100	23445	17353	-6092	37329	46735	40643
1956	-18272	-2363	40500	30829	23969	-6860	29088	44997	38137
1957	-24256	-4958	46200	39660	32894	-6766	28710	48008	41242
1958	-38411	-15552	59600	47920	(6) 40593	(6) -7327	28516	51375	44048
1959	-42143	7307	71500	52595	45373	-7221	36578	86028	78807
1960	-44297	9093	71300	54761	49787	-4974	31977	85367	80393
1961	-37577	18874	66300	(7) 54667	(7) 49780	(7) -4887	33610	90061	85174
1962	-33302	27543	62400	50100	47600	-2500	31598	92443	89943
1963	-29665	37620	56300	66900	60700	-6200	32935	100120	93920
1964	-45304	29546	78400	80200	69100	-11100	44196	128046	107946
1965	-52959	36256	100900	98700	91300	-7400	55341	144556	137156
1966	-61829	30237	90200 (8)	108400	99200	-9200	37571	129637	120437
1967	-76818	56636	119700	136100	107300	-28800	71682	205136	176336
1968	-90456	45053	136500 (9)	168900	127400	-41500	87544	223053	181553

Table 1. countinued: Saving in the Iranian Economy

	Non Oil Iranian Balance of Visible Trade (X-M)	Iranian Balance of Visible Trade Including Oil (X-M)	G.D.F.C. Formation	Actual Govern Expenditure	Govern Revenne	Budget Govern Balance	Private Saving without Oil	Private Saving including Oil	National Saving Including Oil
	I	II	III	IV (G)	V (T)	VI (T-G)	VII (I+III-VI)	VIII (II+III-VI)	IX (II+III-VI+VIII)
1969	(10) -97034	(10) 52046	156400	197400	143000	-54400	113766	262846	208446
1970	(11) -107068	(11) 56973	167300	231100	170000	-61100	121332	285373	224273
1971	-128730	26845	203300	303100	265000	-38100	112670	268245	230145

Footnots for Table 1. Saving in the Iranian Economy

1. Bharier, J., "Economic Development in Iran:1900-1970",
   p. 114-5.

2. Ibid., p. 50-1. For more detailed information and ana-
   lysis see: "Capital Formation In Iran: 1900-1965" an
   unpublished Ph. D. thesis, London University, 1969,pp.
   126. Also see U. N. Yearbook of National Account Sta-
   tistics, Vol. II, 1969 pp. 188-213, where it uses the
   figures for G.D.F.C.F. at current prices in calcula-
   tion of the financing of G.D.F.C.F.

3. Uited Nations, Statistical Yearbook 1951, pp. 489-99.

4. Ibid., 1952, p. 458.

5. Ibid., 1959, p. 512.

6. Ibid., 1963, p. 592.

7. Bank Markazi Iran Annual Report and Balance Sheet,1967
   p. 67. Also see Annual Report and Balance Sheet, 1968
   p. 238, and Annual Report and Balance Sheet, 1970, p.
   122 and Annual Report and Balance Sheet, 1971, p. 109.

8. Ibid. (Persian), (Tehran: 1970) p. 111.

9. Ibid. (Persian), (Tehran: 1971) pp. 96-8.

10. Ministry of Fiance, Yearbook of Foreign Trade Statis-
    tics of Iran, (Tehran: 1969).

11. Bank Markazi Iran, Annual Report and Balance Sheet,
    (Tehran: July 1972) pp. 120, 127.

Calculation of Some Financial Ratios of
The Iranian Economy

Table 2 has been organized from the data collected and
gives an indication of patterns of growth in Key areas--cap-
ital

formatiom vs. Sources-and-Uses-of-Funds. Columns I-II of table 2 have been taken from tables not included in this paper and columns III-VII has been taken from table 1. The last two columns (VIII and IX) give the ratio between total Sources-and-Uses-of-Funds (Sources and Uses) to Gross Domestic Capital Formation (GDFCE) respectively. These ratios have been calculated for both sources as well as uses so that the discrepencies between the Sources-and-Uses in certain years will not bias the analysis. These ratios make one thing quite clear and that is: between 1936-71 (excluding the war years when the data covering Sources-and-Uses may not be reliable) both of these ratios have been rising over time. It should be noted that from 1936-60 these ratios were basically even or even declined. For example, if we take the ratio using sources we note that during the 1936-60 period the average value of the ratio of total sources to GDFCF was about 1.25 whereas the average value for the period 1960-71 was 2.30. The unusual rise in the values of these ratios during 1960-71 can probably be attributed to the financing of the land reform. This is due to explosive growth in uses as well as sources after the land reform law was put into effect in 1961. There is a strong possibility that this explosive rise in the Uses-and-Sources-of-Funds after 1961 has been a by-product of the financing of the land reform and the resulting transfer of the now liquid assets of the land owners to the banking system. At this time however no concrete suggestion may be made in this regard, mainly due to the lack of needed data on the financing of the land reform, the extent of the land distribution and its impact on income and output in Iran.

The Effect of the Oil Sector on Saving and Investment in Iran (1936-1971).

Let's focus our attention on table 3. In preparation of this table an attempt has been made to relate Total Sources-of-Funds to saving, public or private, with or without oil. For example, column XI calculates the ratio of Sources-of-Funds to private saving with oil for the period 1936-71. Again excluding the war years we note that this ratio had an average value of .80 between 1936-60, whereas the same aver-

Table 2, continued: Financial Ratios

	Financial Assets Sources I	Financial Assets Uses II	Capital Formation GDFCF III	Private Saving without Oil (a) IV	Private Saving with Oil (b) V	National Saving without Oil (c) VI	National Saving with Oil VII	Ratio of Total Sources to GDFCF (I/III) VIII	Ratio of Total Uses to GDFCF (II/III) IX
1956	35774	33768	40500	29088	44997	22228	38137	.88	.83
1957	46503	41066	46200	28710	48008	21944	41242	1.01	.89
1958	56109	56737	59600	28516	51375	21189	44048	.94	.95
1959	70170	75563	71500	36578	86028	29357	78807	.98	1.06
1960	78128	82795	71300	31977	85376	27003	80393	1.10	1.16
1961	99400	98600	66300	33610	90061	28723	85174	1.50	1.49
1962	111300	108800	62400	31598	92443	29098	89943	1.78	1.74
1963	130500	125000	56300	32835	100120	26635	93920	2.32	2.22
1964	158700	150700	78400	44196	128046	33096	107946	2.02	1.92
1965	170800	171800	100900	55341	144556	47941	137156	1.69	1.70
1966	193400	199400	90200	37571	129637	28371	120437	2.14	2.21
1967	236000	243800	119700	71682	205136	42882	176336	1.97	2.04
1968	272900	295200	136500	87544	223053	46044	181553	2.00	2.16
1969	329100	360000	156400	113766	262846	59366	208446	2.10	2.30
1970	391500	434000	167300	121332	285373	60232	224273	2.34	2.59
1971	500500	523500	203300	112670	268245	74570	230145	2.46	2.57

(a,b,c,) See the Methodology of these calculations on pages 173-8 of this dissertation.

Table 2. The Calculation of Some Financial Ratios of the Iranian Economy
1936-1971 All Values at Current Prices in Million Rials

	Financial Assets		Capital Forma-tion GDFCF	Private Saving without Oil	Private Saving with Oil	National Saving without Oil	National Saving with Oil	Ratio of Total Sources to GDFCF	Ratio of Total Uses to GDFCF
	Sources	Uses		(a)	(b)	(c)		(I/III)	(II/III)
	I	II	III	IV	V	VI	VII	VIII	IX
1936	2116	2028	1400	1016	2574	1016	2574	1.51	1.45
1937	2642	2571	1700	988	2865	988	2865	1.55	1.51
1938	2860	2702	1900	1083	2861	1084	2862	1.50	1.42
1939	3104	2791	1600	2038	3715	1352	3032	1.94	1.74
1940	4199	4085	1400	1337	2650	1321	2634	3.00	2.92
1941	5788	5136	2100	2694	3706	2134	3146	2.76	2.45
1942	9180	6662	4300	2395	5878	2476	5959	2.13	1.55
1943	11834	7524	5100	6025	9303	3923	7201	2.32	1.47
1944	13715	8049	5500	2788	6705	2944	6861	2.49	1.46
1945	13706	8547	5900	3641	9253	3741	9353	2.32	1.45
1946	14794	9714	11100	8992	17041	8461	16510	1.33	.87
1947	15444	10448	11500	10450	20444	7988	17982	1.34	.91
1948	16203	11883	13700	9837	26977	10087	27227	1.18	.87
1949	16634	13358	14700	10065	25457	7163	22555	1.13	.91
1950	16967	14399	13200	9654	31838	9654	31838	1.28	1.09
1951	17193	16255	13600	10585	17427	10586	17428	1.26	1.20
1952	20828	19472	13800	14936	14948	14425	14437	1.51	1.41
1953	26943	25560	18100	21281	21545	20769	21033	1.49	1.41
1954	28500	28874	25500	38624	40624	27764	29772	1.12	1.13
1955	30877	30967	34100	37329	46735	31237	40643	.91	.91

age for 1960-71 was 1.27. In general the value of the ratio
of Sources-of-Funds to private saving drifted downward until
1955 and then moved upward. The most dramatic change in th-
ese ratios is demonstrated by the ratio of total sources to
national saving without oil-- column XII of this table. If
one excludes the war years the ratio of total sources to na-
tional saving excluding the oil sector has an average value
of about 2.25 between 1936-60. The average for the same ra-
tio was about 5.2 for the more recent period from 1960-71.
This illustrates the importance of other sources than oil
income on capital formation in Iran. Column XIII of table 3
gives the ratio of total sources to national saving with oil.
This ratio had an upward trend during 1936-44. With some
exceptions the value of this ratio rose from .82 in 1936 to
2.00 by 1944. From 1945 to 55 it drifted downward and then
rose during the rest of the period. Again excluding the
war years and in this case eliminating the effect of nation-
alization of oil by eliminating the years 1951-55, one gets
an average of .90 for the period between 1936-60. From a
comparison of the movements of the ratios of column XII and
XIII it becomes obvious that with some exceptions the oil
sector has played an important role in increasing Sources-of
-Funds for the period 1936-71. The growth of non-oil sourc-
es of funds, especially in the last decade has been even mo-
re impressive, however, Oil income as a percentage of natio-
nal saving increased slightly over the entire period 1936-71.
Oil income as a percentage of total Sources-of-Funds on the
other hand, has declined in recent years.[1] This shows the
increasing role that other sources now play in capital form-
ation.

The above point becomes more apparent if one considers
column XVII and XVIII of table 3. The first column indicates
that income from oil which was about 74% of the total Sou-
rces-of-Funds in 1936, was falling from 1936 until the begi-
nning of hostilities in 1940. This ratio had a shifting ch-
aracter between the war and nationalization years, kept ris-
ing until 1960 and had a range of 31-57% during 1960-71 with
an average proportion of .48 for this period.

1. There has been no attemp to evaluate the effects of the
   recent increases in the selling price of the Oil in this
   article.

Table 3. The Effects of the Oil Sector on Saving in Iran (1936-71)

| | Ratio of Total Sources to Private Saving without Oil (I/IV) | Ratio of Total Sources to Private Saving with Oil (I/V) | Ratio of Total Sources to National Saving without Oil (I/VI) | Ratio of Total Sources to National Saving with Oil (I/VII) | Indirect Calculation of Iranian Income from Oil | | | | |
	X	XI	XII	XIII	Non-Oil Iranian Balance of Trade Visable Inlcuding-Oil / XIV	Iranian Balance of Trade Including Oil Export / XV	Iranian Earning from Oil Sources of Funds (XV-XIV) / XVI	Income From Oil as % of National Sources with Oil (XVI/I) / XVII	Oil Income as % of National Saving with Oil (XVI/VII) / XVIII
1936	2.08	.82	2.08	.82	-384	1174	1558	74	61
1937	2.67	.92	2.67	.92	-712	1165	1877	71	66
1938	2.64	1.00	.264	1.00	-816	962	1778	62	62
1939	1.52	.84	2.30	1.02	-243	1432	1680	54	55
1940	3.14	1.58	3.18	1.59	-79	1234	1313	31	50
1941	2.15	1.56	2.24	1.84	+34	1046	1012	18	32
1942	3.83	1.56	3.71	3.71	-1824	1659	3483	38	58
1943	1.96	1.27	3.02	1.64	-1177	2101	3278	28	46
1944	4.91	2.05	4.66	2.00	-2556	1361	3917	29	56
1945	3.76	1.48	3.66	1.46	-2195	3453	5612	41	60
1946	1.65	.87	1.75	.90	-2639	5410	8049	54	49
1947	1.48	.76	1.93	.86	-3512	6482	9994	65	56
1948	1.65	.60	1.61	.60	-3613	13527	17140	106	63
1949	1.65	.65	2.32	.74	-7537	7855	15392	93	68
1950	1.76	.53	1.76	.53	-3546	18638	22184	131	70
1951	1.62	.99	1.62	.99	-3014	3828	6842	40	39
1952	1.39	1.39	1.44	1.44	+625	637	12	.06	.08

Table 3. continued: Calculation of Financial Ratios

	Ratio of Total Sources to Private Saving without Oil	Ratio of Total Sources to Private Saving with Oil	Ratio of Total Sources to National Saving without Oil	Ratio of Total Sources to National Saving with Oil	Indirect Calculation of Iranian Income from Oil				
					Non-Oil Iranian Balance of Trade	Iranian Balance of Visible Trade Including Oil	Iranian Earning from Oil Funds	Income From Oil as % of National Saving Sources with oil	Oil Income as % of National Income with oil
	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII
	(I/IV)	(I/V)	(I/VI)	(I/VII)				(XV-XIV) (XVI/I)	(XVI/VII)
1953	1.27	1.25	1.30	1.28	+2669	2933	264	1	1
1954	.74	.70	1.03	.96	+2264	4272	2008	7	7
1955	.83	.66	.99	.76	-2363	6543	9406	30	23
1956	1.23	.79	1.61	.94	-18272	2363	20635	44	42
1957	1.62	.97	2.12	1.13	-24256	-4958	19298	42	47
1958	1.97	1.09	2.65	1.27	-38411	-15552	22859	41	52
1959	1.92	.82	2.39	.89	-42143	7307	49450	70	63
1960	2.44	.92	2.89	.97	-44297	9093	53390	68	66
1961	2.96	1.10	3.46	1.17	-37577	18874	56451	57	66
1962	3.52	1.20	3.83	1.24	-33302	27543	60845	55	68
1963	3.97	1.30	4.90	1.39	-29665	37620	67285	52	72
1964	3.59	1.24	4.80	1.47	-45304	29546	74850	47	69
1965	3.09	1.18	3.56	1.25	-52959	36256	89215	52	65
1966	5.15	1.49	6.82	1.61	-61829	30237	92066	48	76
1967	3.30	1.15	5.50	1.34	-76818	56636	133454	57	76
1968	3.12	1.22	5.93	1.50	-90456	45053	135509	50	75
1969	2.89	1.25	5.54	1.58	-97034	52046	149080	45	72
1970	3.23	1.37	6.39	1.75	-107068	56973	164041	42	73
1971	4.44	1.87	6.71	2.17	-128730	26845	155575	31	68

Saving and Investment and the Effect of Financial Intermed-
iaries (1936-71).

  Let us take another look at the behaviour of   changes
in total Sources-and-Uses-of-Funds in relation to   changes
in GDFCF. Figure 1 has been prepared to provide a compari-
son between yearly changes in GDFCF and Sources-of-Funds.
Let us focus on the number of peaks and valleys for both of
these variables from 1936-71. Ignoring the relatively sma-
ll movement between 1961-62, there are a total of   sixteen
peaks and valleys in yearly changes of GDFCF. This   will
give us eight peaks and eight valleys. In the same period
(1936-71) the graph for yearly changes in total sources sh-
ows about 15 to 16 peaks and valleys. Six peaks   (1936,
1942, 1964, 1967, 1969, and 1971) in the sources graph coi-
ncide with corresponding peaks in GDFCF. Two of the   peaks
(1953, 1958) for sources lead the peak in GDFCF by one year.
Almost none of the major valleys contained in the graph for
sources and GDFCF coincided during the entire period betwe-
en 1936-71.   In some cases a valley by sources was follow-
ed by a valley in GDFCF (1938-39, 1960-61, 1962-63,   and
1965-66). Thus as far as the growth in GDFCF is concerned
one can claim that each peak in this time series has had a
close association with the rise in Sources-of-Funds.   Also
one can say that any slowdown in the rate of change   in
GDFCF usually coincided with or followed a slowdown in Sou-
rces-of-Funds.

  Figure 2 contains a graph of the yearly changes   in
GDFCF and total deposits by all sectors for the period 1936
-71[2]. As total deposits by all sectors represents   an
essential part of the Sources-of-Funds tables, one   would
expect to observe a similar relationship between   these
two time series and the time series presented in Figure 1.

  There are about seventeen peaks and valleys in the gr-
aph depiciting the yearly changes in total deposits by all
sectors between 1936-71. There are about sixteen peaks and

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2. Total deposits by all sectors during 1936-71 has   been
 taken from: Measuring the Effect of financial Instituti-
 ons on economic development in Iran, (University of Mic-
 rofilm series. 1973) table 6.1 by the same author.

FIGURE . 1

Yearly Percentage Changes in GDFCF vs.
Total Sources-of-Funds

— GDFCF

Total
Sources-of
-Funds
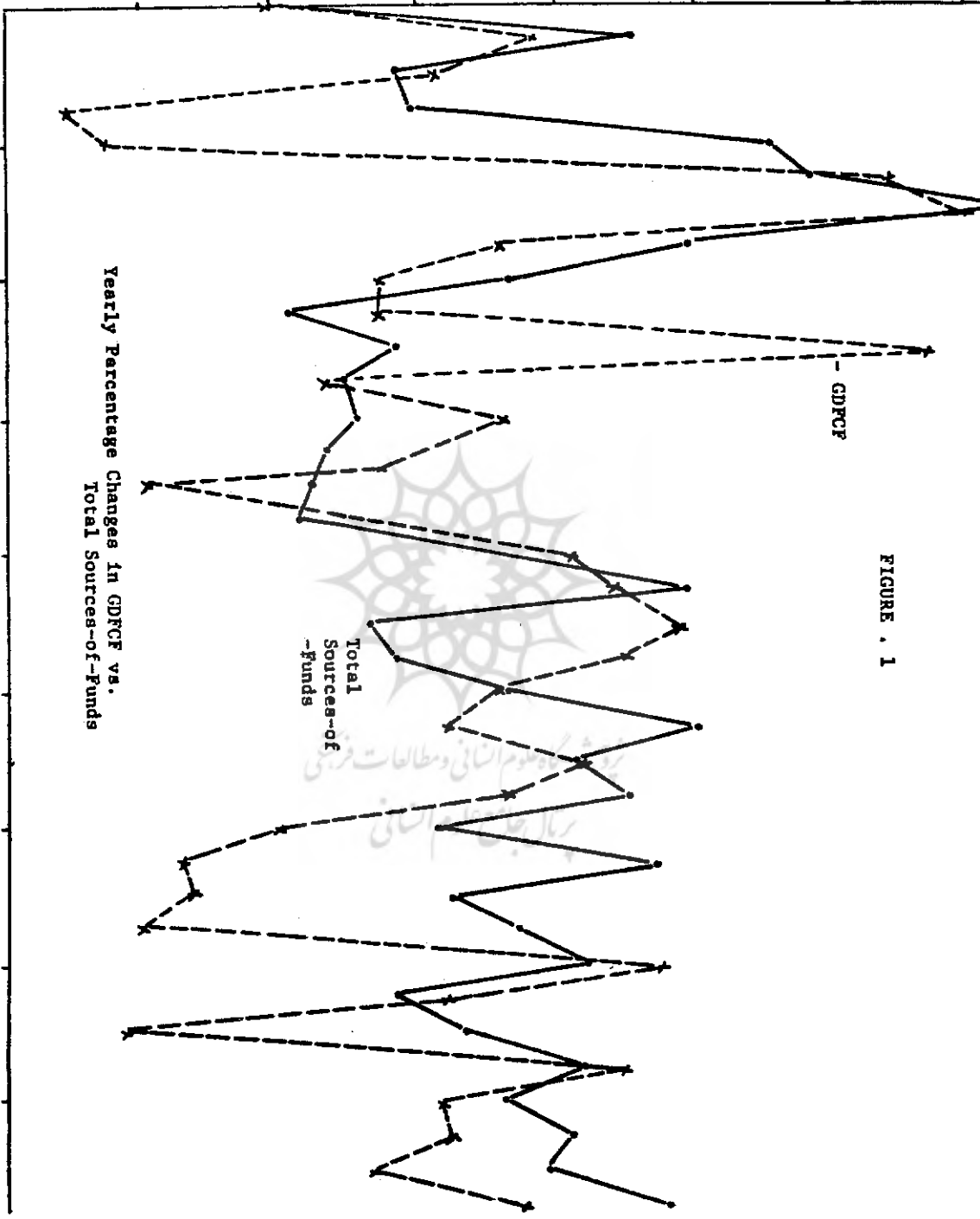
valleys in the graph representing yearly changes in GDFCF.

Again six of the peaks in total deposits by all sectors coincide with six of the peaks in GDFCF. Two of the total deposit peaks lead the peaks in GDFCF by one year. Four of the valleys in total deposits also coincide with the valleys in GDFCF. Again one can see that as total deposits by all sectors (an element of the Flow-of-Funds table and an important part of Sources-of-Funds) rises and reaches a peak, GDFCF also tends to rise and reach a peak. In a majority of the cases, as total deposits by all sectors in the financial intermediaries fall, GDFCF follows suit but with less regularity. This demonstrates the importance of financial intermediaries in facilitating the collection of loanable funds and making them available for investment as reflected in changes in GDFCF.

Figure 3 shows the relationship between changes in GDFCF and credits extended by financial intermediaries for the period 1936-71.[3] GDFCF had eight major peaks and eight major valleys during this period. Yearly changes in total credits extended by financial intermediaries during the same period had seven peaks and six valleys. It is interesting to note that only two peaks (1964, 1967) in total credits to all sectors extended by financial intermediaries coincided with similar peaks in GDFCF. Of the remaining six peaks in total credits to all sectors four led the peaks in GDFCF by one year and two lagged behind. This shows that in a majority of cases an increase in credit extended by financial intermediaries to all sectors of the Iranian economy coincided or was followed by an increase in expenditures in GDFCF. This again demonstrates the important role played by financial intermediaries in allocating loanable funds in Iran.

Let us now concentrate on other aspects of the problem, such as financial intermediation, capital formation and economic growth. One should expect that the growth of financial institutions in a less developed country will increase the efficiency of that economy by providing a mechanism through

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3. Credits extended by financial intermediaries, for the period 1936-71 has been taken from table 6.9 previously mentioned

FIGURE . 2
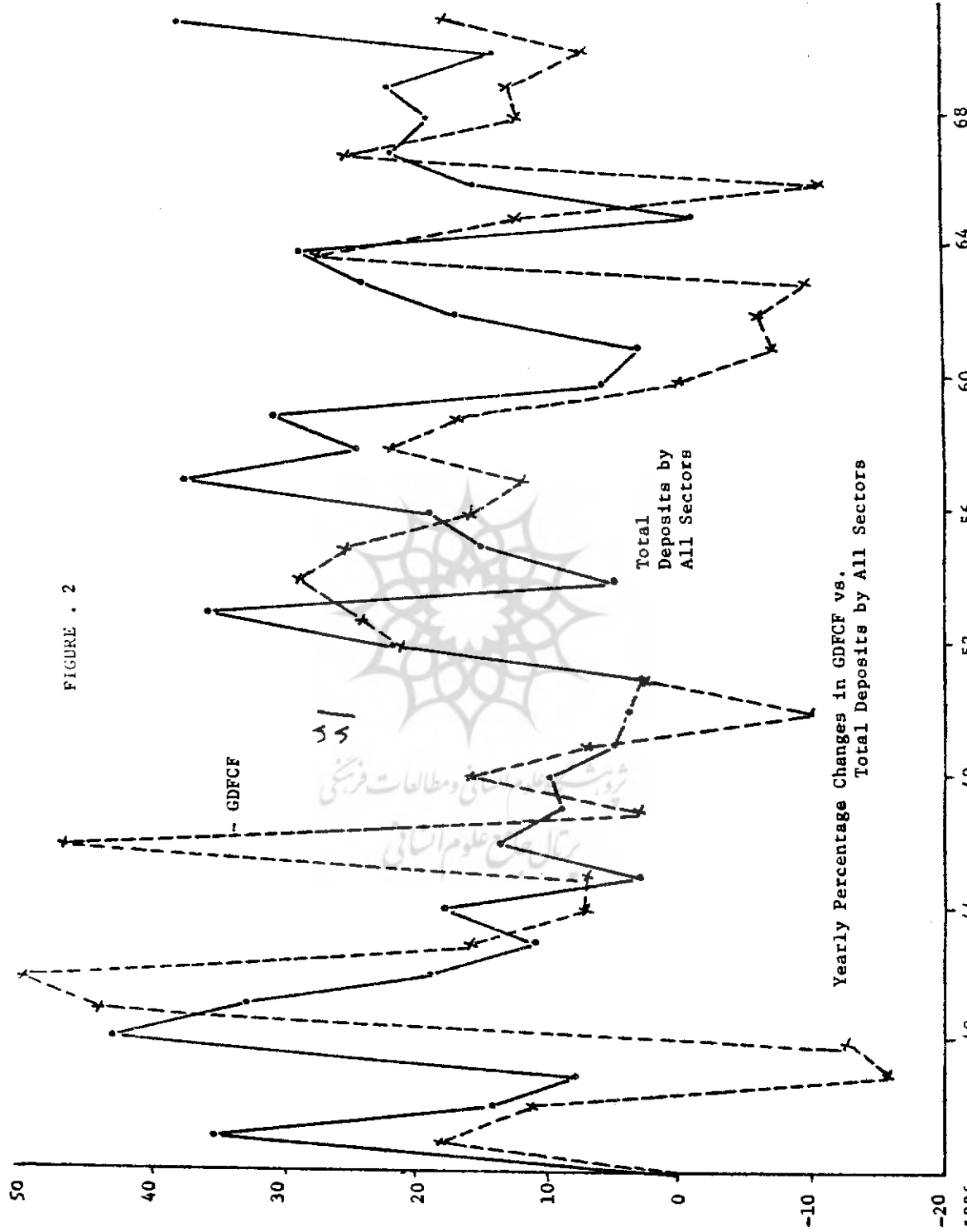
Yearly Percentage Changes in GDFCF vs.
Total Deposits by All Sectors

Total
Deposits by
All Sectors

GDFCF

which savers can come to the financial markets and exchange their cash for interest bearing certificates of deposit and investors can obtain cash in exchange for their interest bearing promisory notes. The cash can then be used to increase business liquidity, obtain more inventory or embark on new ventures which require capital expenditure, all of which may be necessary to increase output.[4]

The following tables, (4 and 5) present the   yearly changes in deposits by the private and the public sectors as well as the yearly changes in credits extended to these sectors by the intermediaries in Iran covering the period 1936-71. In addition to these, yearly changes of   Gross Domestic Fixed Capital Formation at current prices,   the ratio of investment to Gross National Product, as well as the ratio of private deposits to GNP and the change in GNP over time have been calculated and brought together.

These tables provided most of the basic calculations for Figures 1-3. These figures showed that a change   in the rate of either deposits, by different sectors (Private or public) in the financial intermediaries or a change in the amount or the rate of credit extended by these institutions to various sectors of the economy in Iran will tend not only to affect investment but also the rate of growth of capital formation and ultimately the rate of change in GNP.

Let us first focus our attention on the rates of change of total deposits in intermediaries and the rates   of change in credits extended by them with the rates of change that have occurred in GDFCF over time. The data   for these figures has been collected for over 35 years and is presented in table 4 columns III and VI and table 5 column I. Let's take the first three years. During this period as the rate of change in total deposits by all sectors dr-

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4. These issues and others like them have been dealt with in Chapters Two and Three of the previously mentioned dissertation.

FIGURE . 3
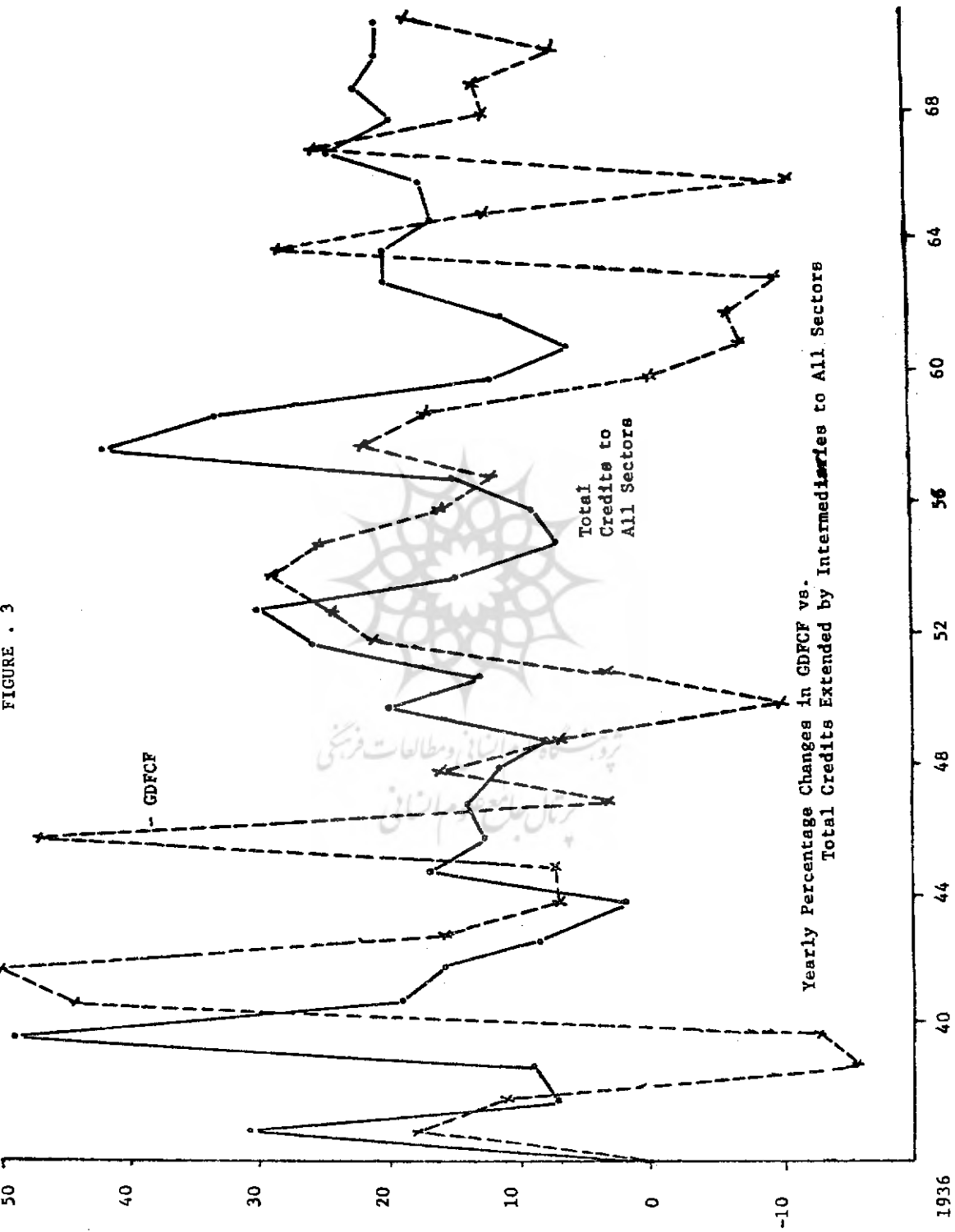
Yearly Percentage Changes in GDFCF vs.
Total Credits Extended by Intermediaries to All Sectors

opped from 35% in 1937 to 14% in 1938 and to 7% in   1939.
Credit extended to all sectors by the intermediaries   also
dropped from 31% in 1937 to 7% in 1938 and to 9% in 1939.
But the effect of a fall in the rate of deposits by all se-
ctors in the intermediaries was felt more on the rate   of
change in capital formation during this same period.   In
fact the rate of change of GDFCF fell slightly from 18% a
year in 1937 to 11% in 1938 and by 1939 experienced a sharp
decline to -16%. Eliminating the war years as has been do-
ne so far in this section one notes that as the rate of ch-
ange of total deposits increased from 3% per year in   1945
to 14% in 1946, there was a slight decline in the rate   of
growth of credit. The rate of change of GDFCF which   was
7% per year in 1945 rose to 47% in 1946. In 1947,   there
was a fall in the rate of change in total deposits by   all
sectors, with no appreciable change in credit extended   to
all sectors by intermediaries. This was accompanied by   a
sharp fall in the rate of change in GDFCF from 47% per year
to 3% per year. A rise in the rate of change of total depo-
sits by all sectors in 1948 was accompanied by a sharp rise
in the rate of change of GDFCF.A fall in the rate of change
of total deposits by all sectors and credit extended to all
sectors followed a fall in the rate of change in GDFCF   in
1949. This pattern continues and one can note that between
1949-53 almost every rise in the first and second magnitud-
es led to a rise in the third magnitude. There was an exc-
eption in 1954 and this can be explained by noting that th-
is was a year after the overthrow of Dr. Mossadegh's gover-
nment. In this and the following five years a strong init-
iative was taken by various U.S. agencies to increase econ-
omic activity in Iran. Thus exogenous forces may have been
the reason behind the unexplained increase in the rate   of
capital formation in the face of a fall in deposits by   all
sectors in financial intermediaries. The data for the yea-
rs 1959-61 supports the proposition that every increase in
GDFCF in Iran corresponds to an increase in the sources of
funds in the financial intermediaries (deposits by all sec-
tors) and that every fall in these sources of financial in-
termediaries has a corresponding reflection on GDFCF in Ir-
an. The years 1962 and 1963 correspond to recession years
which were followed by extreme political instability in the
country. The fall in GDFCF in the face of a rise in these
sources of funds can thus be explained.

Table 4   Percentage Changes in Some Assets and Liabilities of Financial Intermediaries 1936-1971 at Current Prices.

	Total Deposits In Intermediaries			Total Credits By Intermediaries		
	% Change By Private Sector	% Change By Public Sector	% Change By All Sectors	% Change To Private Sector	% Change To Public Sector	% Change To All Sectors
	I	II	III	IV	V	VI
1937	26	54	35	19	32	31
1938	20	5	14	4	18	7
1939	13	-5	7	40	-14	9
1940	42	45	43	19	88	49
1941	69	94	33	15	46	19
1942	51	-20	19	12	17	16
1943	19	-9	11	8	9	9
1944	27	-9	18	28	16	2
1945	0	18	3	36	11	17
1946	13	16	14	32	6	13
1947	13	-5	9	46	0	14
1948	7	20	10	28	2	12
1949	2	17	5	4	11	8
1950	9	-12	4	18	21	20
1951	8	-18	3	3	25	13
1952	23	15	22	5	36	26
1953	28	79	36	15	37	30
1954	7	0	5	22	12	15
1955	9	38	15	21	1	7
1956	26	-5	19	10	9	42
1957	32	66	38	46	1	15
1958	25	23	24	60	29	42

Table 4 Continued: New Series Published by Bank Markazi (Central Bank) Since 1959

	Total Deposits In Intermediaries			Total Credits By Intermediaries		
	% Change By Private Sector	% Change By Public Sector	% Change By All Sectors	% Change To Private Sector	% Change To Public Sector	% Change To All Sectors
	I	II	III	IV	V	VI
1959	16	87	31	27	8	33
1960	6	3	6	13	11	12
1961	4	4	3	19	-12	6
1962	25	-4	17	21	-7	11
1963	20	34	24	18	23	20
1964	16	66	29	21	19	20
1965	17	-20	4	16	15	16
1966	16	13	16	19	13	17
1967	32	22	22	17	38	24
1968	24	3	19	17	24	19
1969	19	30	22	19	31	22
1970	16	9	14	16	37	20
1971	27	75	38	21	20	20

Now let us focus on the relation between changes   in
capital formation and GNP. Unfortunately data on GNP   for
Iran could not be compiled before 1954 thus limiting   the
conclusions somewhat. Even the GNP data for 1954-59   have
many shortcomings and do not represent official data.[5]   But
even these data show some correlation between the   changes
in the total sources in all intermediaries, credits extend-
ed by these intermediaries, changes in capital   formation
and the rate of growth of GNP. For example let us   focus
our attention on the changes in these magnitudes for   the
years 1958-63. In general and with only minor   exceptions
as the rate of change of total sources of funds falls   in
these years so does the credit to all sectors, GDFCF, inve-
ntment ratio and the rate of change in GNP. The same conc-
lusions can be drawn by observing the years 1964-71.

The ratio of the private sector's deposits to GNP   in
Iran is provided in column III of table 5. Since 1954   the
magnitude of this ratio has more than tripled-- rising from
about .82 to over 2.55. A close examination of the   data
reveals, however, that the growth in GNP slowed appreciably
after the ratio of private deposits to GNP had dipped   in
1960-61 period. This slowdown in the rate of growth of pr-
ivate deposits to GNP was followed by a decline in the inv-
estment ratio during 1961-64. This may indicate a   causal
relationship between the rate of change of private deposits
to GNP, the investment ratio and the growth of GNP. It su-
ggests that the ratio of private deposits to GNP may be   a
leading indicator that will be useful in helping to foreca-
st the future trend in the investment ratio as well as   the
rate of change in GNP. It should be emphasized that we do-

5. For the source of these data from 1954-59 the manner of
   their collection see United Nations Conference on Trade
   and Development, Trade Prospects and Capital Needs   of
   Developing Countries; Trade Projections for Iran, (New
   York: U.N. 1968), P.335 R. Moghadam, Saving in the Ira-
   nian Economy, Tehran: Address given before the Investm-
   ent conference, March 1963). For Data on Gross National
   Product in Iran during the period 1959-1971.
   See: Bank Markazi Iran, Annual Report and Balance She-
   et, 1970, (Tehran: July 1971), pp.]09-11.

Table 5 Change in Saving and Investment Ratios and Gross National Product 1936-1971 at Current Prices

	G.D.F.C.F. At Current Prices % Change	Investment Ratio	Private Deposits GNP	% Change GNP	% Change To All Sectors
	I	II	III	IV	V
1937	18				25
1938	11				8
1939	-16				9
1940	-13				35
1941	44				38
1942	51				59
1943	16				29
1944	7				16
1945	7				0
1946	47				8
1947	3				4
1948	16				5
1949	7				3
1950	-10				2
1951	-3				1
1952	21				21
1953	24				29
1954	29	.13	0.823		5
1955	25	.15	0.830	7.3	8
1956	16	.15	0.902	16.5	16
1957	12	.15	1.084	9.8	30
1958	22	.17	1.245	8.9	21

Table 5 continued: New Series Published by Bank Markazi (Central Bank) since 1959

	G.D.F.C.F. At Current Prices % Change	Investment Ratio	Private Deposits / GNP	% Change GNP	% Change To All Sectors
	I	II	III	IV	V
1959	17	.17	1.273	13.5	25
1960	0	.18	1.230	10.8	11
1961	-7	.16	1.200	5.5	27
1962	-6	.14	1.410	6.5	12
1963	-10	.14	1.609	5.8	17
1964	28	.15	1.663	12.0	22
1965	12	.18	1.776	10.0	8
1966	-11	.19	1.924	7.5	15
1967	25	.22	2.004	11.8	22
1968	12	.22	2.245	10.1	16
1969	13	.22	2.391	12.1	21
1970	7	.21	2.428	13.8	19
1971	18	.21	2.555	20.4	28

n't have sufficient data on national income for a long enough period of time to provide avery meaningful test of this hypothesis, however.

Summary

An examination of the ratio of total sources-of- Funds to private and national savings with and without the oil sector (columns X-XIV of table 3) as well as the ratio of Sources-of-Funds to national saving without oil (columns XVII – XVIII) makes it clear that although oil income has been an important source of national saving and in some cases has outstripped the total Sources-of-Funds (1948, 1950) this ratio is falling. This indicates the emergence of other internal Sources-of-Funds. The growth of other internal Sources-of-Funds, after 1960, may have been stimulated to a large extent by land reform. Tables 4 and 5 make it clear that the growth of financial intermediaries in Iran affected the rate of capital formation. There is a fairly close relationship between fluctuations in the rate of change in Sources-of-Funds and Gross Domestic Fixed Capital Formation during the 1936-71 period. In addition, one can note a close relationship between fluctuations in Gross Domestic Fixed Capital Formation and the Uses-of-Funds in Iran during the same period. The same correlation can be detected between the rate of change of these magnitudes and the rate of change in Gross national product in Iran.

BIBLIOGRAPHY

BOOKS:

BALDWIN, G.B. Planning and Development in Iran, ·Baltimore :
Johns Hopkins Press, 1967

BANK MARKAZI IRAN ECONOMIC RESEARCH DEPARTMENTS,   National
Income of Iran 1962-67, September 1969.

BARAN, P. The Political Economy of Growth, New York: Month-
ly Review Press, Modern Reader edition, 1968.

BASCH, A. Financing Economic Development, New York: Macmi-
llan Co., 1964.

BENEDICK, R. Industrial Finance in Iran, Division of Rese-
arch, Graduate School of Business Administration, Boston   :
Harvard University Press, 1964.

BENNETT, R. The Financial Sector and Economic Development :
The Mexican Case, Baltimore : Johns Hopkins Press, 1965.

BHARIER, J. Economic Developments in Iran: 1900-70, London:
Oxford University Press, 1971.

BHARIER, J. Capital Formation in Iran: 1900-65, unpublished
Ph.D. Thesis, London University, 1969.

BOEHMLER, E. (ed.) Financial Institutions, Homewood, Illin-
ois: R. Irwin, Inc., 1956.

BOS, PIETER C. Money In Development, Rotterdam: Rotterdam
University Press, 1969.

BROTHERS, D.S. Mexican Financial Development. Austin: Uni-
versity of Texas Press, 1966.

BURGER, A. Project for Basic Monetary Studies, Federal Re-
serve Bank of St. Louis, 1969.

DEVELOPMENT OF CAPITOL MARKETS (the): Asymposium held in
Tehran, Iran - May 1965, Ankara: CENTO, 1966.

FRANCK, P.G. The Growth of Money Stock and Liquid Assets in
Iran, Pakistan, and Turkey, 1948-1963, 1966.

GHAFFARI, R. Measuring The Effect of Financial Institutions
on Economic Development of Iran, Doctor Dissertation, New -
York: State University N.Y. At Albany,, 1973.

GODFELD, STEPHEN M. Commercial Bank Behavior and   Economic
Activity: A Structural Study of Monetary Policy in Post War
United States, Amerdam: North Holland - Publishing Co. 1966.

GOLDSMITH, R. Financial Institutions, New York: Random Ho-
use, 1968.

GURLEY, J. and SHAW, E. Money in a Theory of Finance, Wash-
ington, D.C.: The Brookings Institution, 1960.

HOMAYOON, B. National Income of Iran: 1959-62,   Tehran:
1964.

KUH, E. Capital Stock Growth: A Micro-Economic   Approach,
Amsterdam: North Holland - Publishing Co., 1963.

MINISTRY OF FINANCE, Yearbook of Foreign Trade   Statistics
of Iran, Tehran: 1969.

MINISTRY OF FOREIGN AFFAIRS, Iran Basic Facts, prepared by
Bank Markazi Iran.

MOGHADAM, R. Saving in the Iranian Economy, address to the
Investment Conference (Industrial and Mining Development Ba-
nk of Iran), Tehran: March 1963.

NURKES, R. Problems of Capital Formation in Underdeveloped
Countries, New York: Oxford University Press, 1962.

PATRICK, HUGH T. Monetary Policy and Central Banking   in
Japan, Bombay: University of Bombay, 1962.

PERIODICALS:

BANK MARKAZI IRAN, "Experience in Estimating National Income and Product in Iran", a report to National Income Accounting Conference held in Murry, Pakistan, 1962.

BANK MARKAZI IRAN, Annual Report and Balance Sheet, Tehran: 1961-1973.

BANK MELLI IRAN, Annual Report and Balance Sheet, Tehran: 1945-1970.

BANK RAHNI, Annual Report and Balance Sheet, Tehran: March 20, 1970.

BENEDICK, R. "The Money Markets in Iran", Pakistan Development Review, Vol. 2 (3) August 1962.

BHARIER, J. "Banking and Economic Development in Iran", Banker Magazine, Vol. CCIV, Dec. 1967.

FARMANFARMAIAN, A.N. "The Role of Specialized Banks in Capitol Market in Iran", Development of Capitol Markets, 1966 (a symposium held in Tehran, Iran May 1965.)

GURLEY, J and SHAW, E. "Financial Intermediaries and the Saving-Investment Process", Journal of Finance, Vol.XI 1956.

HEZAREH, A. "The Impact of National Economic Policy on Capitol Markets", The Dvelopment of Capital Market, 1966.

INTERNATIONAL MONETARY FUND, International Financial Statistics, various years.

UNITED NATIONS - ECAFE, Programming Techniques for Economic Development: Capital Accumulation and Development, Bangkok: 1961.

UNITED NATIONS, Methods of Financing Economic Development in Underdeveloped Countries, New York: U.N.

UNITED NATIONS, Public Finance Information Papers: Iran,
No. 1951 XVI. 4, New York: 1951.

UNITED NATIONS, Statistical Yearbook, New York: 1949-72.

PLAN ORGANIZATION, Statistical Section, "Estimate of Nati-
onal Income of Iran", Tehran: March 1962.

SAGHATELIAN, A. "The Role of Iranian Commercial Banks   in
Capital Markets", Development of Capital Markets, 1966.

UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT, "Trade
Prospect and Capital Needs of Developing Countries - Trade
Projection for Iran", New York: 1968.

Keyhan Foreign Edition, July 16 1972.

Keyhan International, June 16, 1973.

Keyhan International, May 26, 1973.

KOOROS, A. "How to Pay for Economic Development in   Iran:
A Monetary-Fiscal Dialogue", Bank Markazi Iran Bulletin, 7
(42) March-April 1969.

MAHDAVI, F. "The Demand for Capitol in Iran", Development
Capitol Markets, 1966.

UNITED STATES - DEPARTMENT OF COMMERCE , Investment Facto-
rs in Iran, Washington, D.C.: .963.