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**PATTERNS OF VILLAGE
HOUSEHOLD SAVING: A CASE
STUDY OF BRISTOL BAY**

by

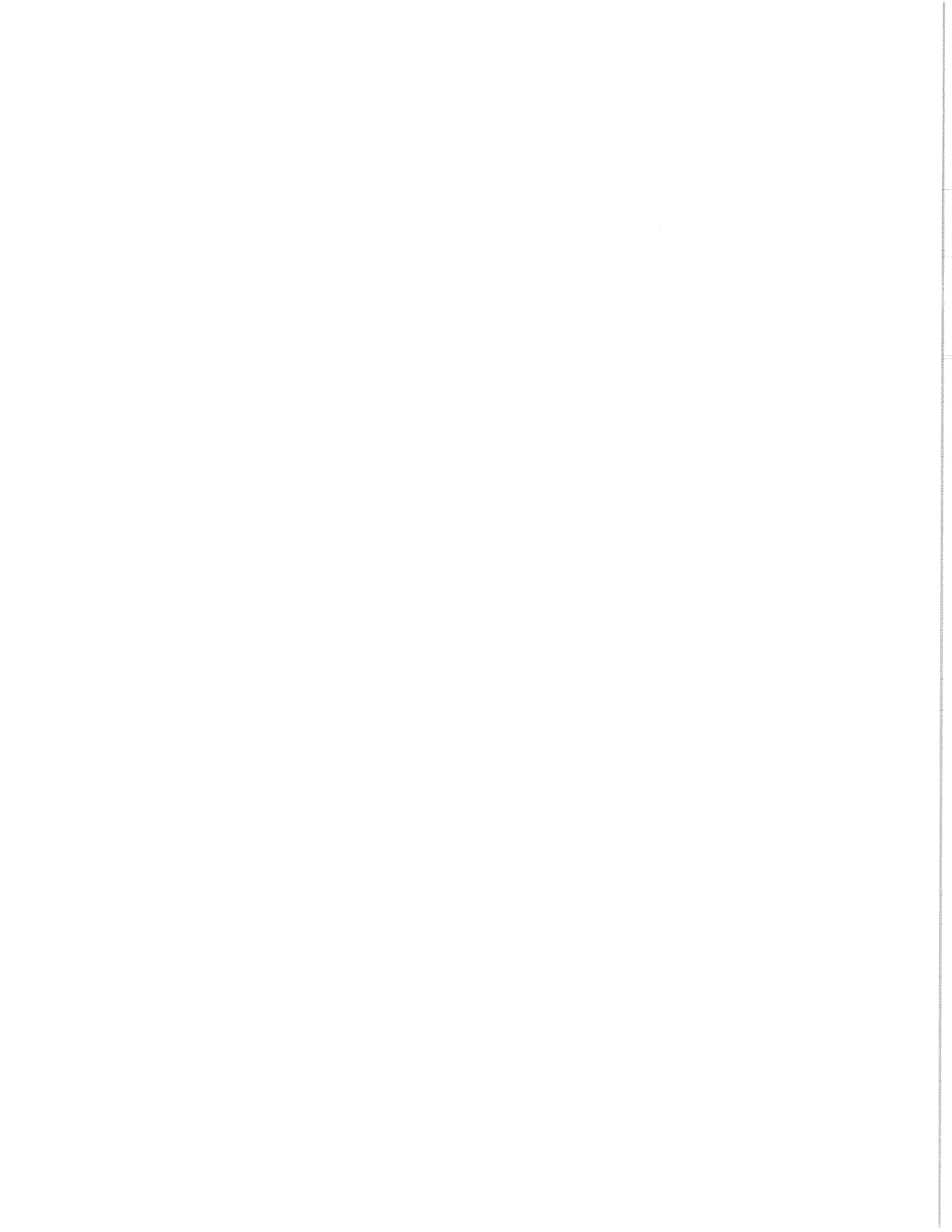
William Nebesky

Institute of Social and Economic Research
University of Alaska Anchorage
3211 Providence Drive
Anchorage, Alaska 99508

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Introduction

Balanced economic growth depends on the correct combination of savings and consumption. Consumption expenditures stimulate business investment. Yet, too much consumption may draw on funds that would otherwise be available for investment. This could produce both rising interest rates and rising prices. If, for example, an economy approached 100 percent consumption, then economic growth would ultimately come to a standstill as banks and lending institutions would be unable to procure sufficient reserves for further capital formation at a price businesses could afford. On the other hand, excess savings would depress consumption expenditures and, in turn, business incentive to invest. Economic growth, as measured in the real (inflation-adjusted) value of goods and services, would decline.

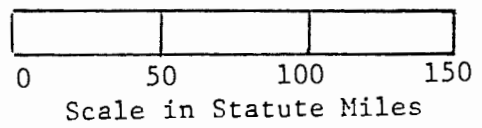
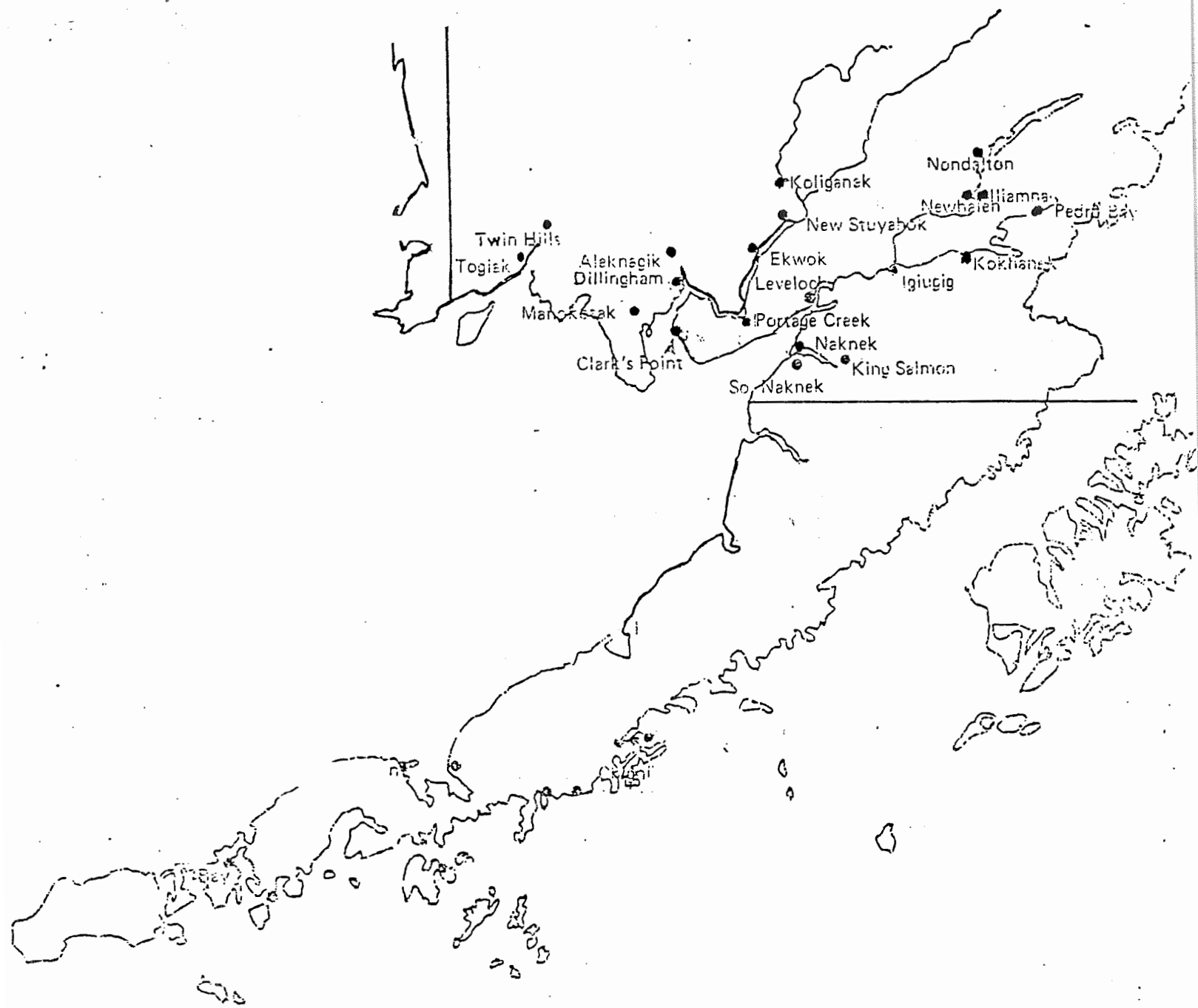
In the modern western economy, personal saving is not directly related to business investment. The banking system plays a vital intermediary role in allocating funds toward investment that were originally set aside for personal saving. Although influenced by market conditions and government macro policies, household savings decisions are made quite independently of business investment decisions. In the Bristol Bay village economy, the household and business sectors are often indistinguishable, suggesting a more direct relationship between personal saving and business investment.

The purpose of this paper is to examine how patterns of personal savings among village households in Alaska's Bristol Bay region interrelate with other conditions of the Bristol Bay economy. In particular, I would like to demonstrate that (1) in spite of relatively high spending rates, savings do occur in less conventional forms among Bristol Bay village households; (2) for the most part, the incentive to save is explained primarily by competitive and institutional factors rather than a conscious desire to expand the households' future consumption opportunities by abstaining from present consumption; and (3) an incipient pattern of commercial lending signals a break in the direct tie between household savings and investment in Bristol Bay.

This paper is part of a more comprehensive study of social and economic change in Bristol Bay. Research is funded by the U.S. Department of the Interior, Minerals Management Services. The study area shown in Figure 1 comprises a network of 20 independent and decentralized villages.

There are several background considerations worth noting about the Bristol Bay economy. First, fishing is a prevailing traditional activity and the driving force of the modern commercial economy. Second, most residents either fish or work in fishing-related industries. As a result, they earn the bulk of their annual income over the course of a short, three- to four-week summer season.

Figure 1 Bristol Bay Study Area



Third, in recent years, three significant independent forces have converged on Bristol Bay's economy simultaneously: the fishery recovery, government spending, and a booming recreation industry.

Zero Cash Savings

The conventional interpretation of household savings is viewed as abstention from present consumption in order to increase future consumption opportunities. Savings is measured as the difference between disposable personal income and consumption expenditures. At the national level, personal savings as a proportion of disposable income varied from 5.9 to 8.6 percent between 1974 and 1981 (see Table 1).

Although comparable data does not exist for Bristol Bay, anecdotal data on spending patterns from key informants suggests that, for the most part, village households spend all of their cash income. Indeed, even in favorable fishing years such as 1979, it was not uncommon for many successful fishing households to run out of cash several months in advance of the next fishing season. Executives from Dillingham's only commercial bank confirm this pattern. The bankers indicated that many households retain positive savings accounts averaging \$5,000 when the fishing season ends. By late winter, those accounts are typically depleted. While households in Bristol Bay's chief regional service centers (i.e., Dillingham and Naknek) are believed to exhibit savings patterns

TABLE 1. PERSONAL SAVING AS A PERCENT OF
DISPOSABLE INCOME - U.S.

<u>YEAR</u>	<u>U.S. PERSONAL SAVINGS - DISPOSABLE INCOME</u>
1960	5.6
1965	7.1
1970	8.0
1974	8.5
1975	8.6
1976	6.9
1977	5.9
1978	6.1
1979	5.9
1980	5.8
1981	6.4

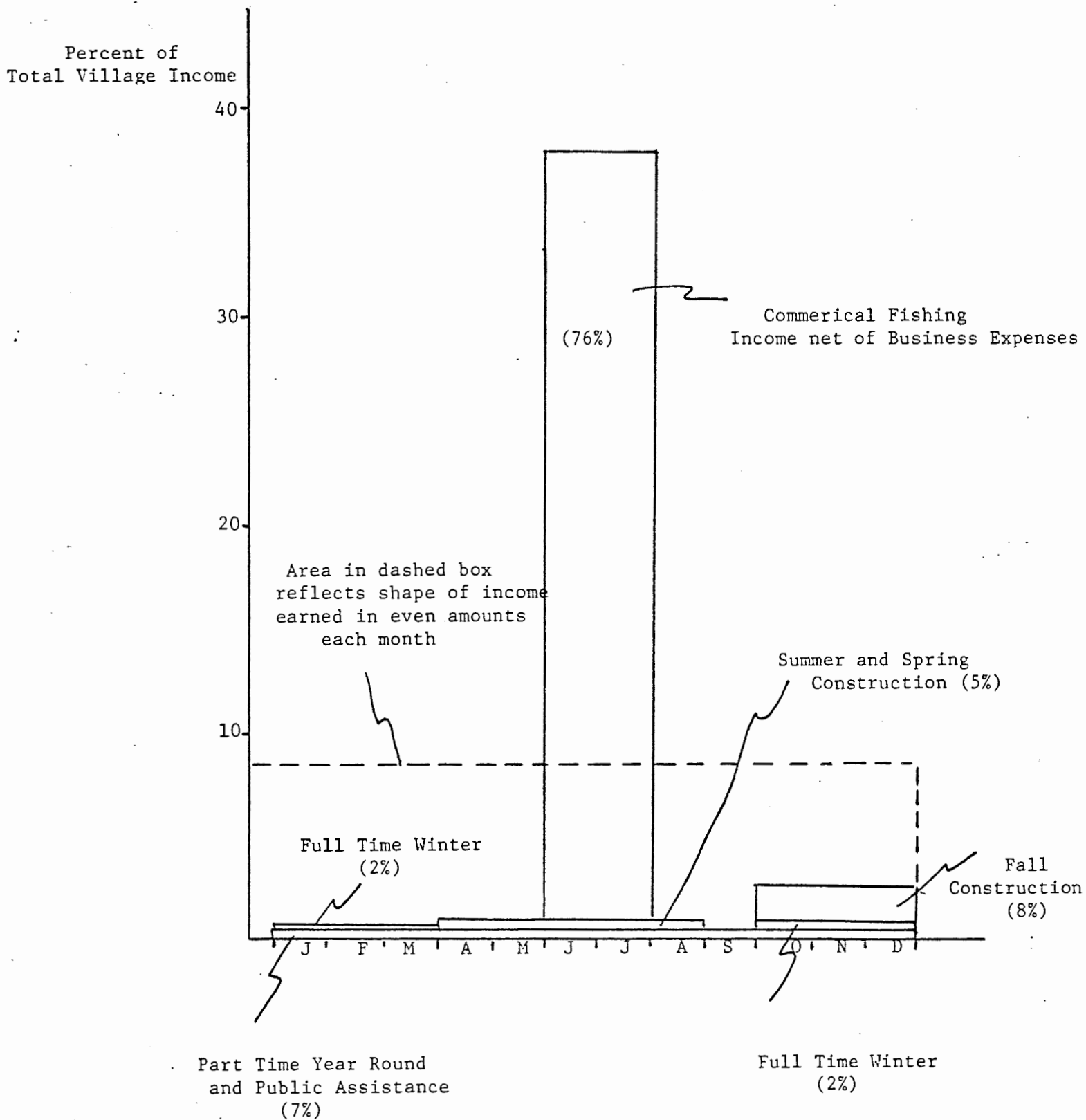
SOURCE: Statistical Abstract of the United States, ed. 103,
1982-83, p. 424, Table 701.

comparable to other more developed commercial economies, the pattern of zero cash savings is prevalent among the outlying villages.

An obvious explanation for zero cash savings is that even households in the higher income brackets cannot keep up with the high cost of living that characterizes Alaska's bush. Alternatively, although more elaborate, well-stocked village stores are starting to appear in larger villages (i.e., Togiak, Manokotak, and New Stuyahok), most villages have limited consumer opportunities. Cash that cannot be spent in the village has less value and produces an incentive for the villager to spend cash before settling in for the winter.

That most income is earned over a relatively short period each year may indirectly explain zero cash savings. The graph in Figure 2 compares the concentrated "windfall" nature of seasonal fisheries earnings to other forms of income for the typical Nushagak River village. Commercial fishery net earnings not only dwarf other income sources, they are concentrated in a short three- to six-week period each summer. Figure 2 was constructed mainly from anecdotal data on the sources, uses, timing of income, and the incidence of fishing and nonfishing jobs in the village. However, several conventional data series confirm the size distribution of Bristol Bay fishing income relative to all other sources. (See, for example, Bureau of Economic Analysis personal income data.)

Figure 2 . Income Patterns for Typical Nushagak River Village
1983



The size and windfall nature of fishing income may help to explain the spontaneous and often careless spending patterns that prevail during and immediately after the fishing season. Furthermore, households usually allocate large amounts of income to one-time, lump-sum disbursements for the annual boat payment, the winter supply of heating fuel, gasoline, food, clothing, materials for building, and for durable items. According to Goldsmith et al. (1981), the typical household spent between \$1,700 and \$4,900 for heat fuel and electricity in 1980, representing between 10 and 31 percent of average household income. Langdon (1981) pegged the median 1980 fishing boat payment at \$7,500.

In summary, the Bristol Bay economy is characterized by villages isolated from markets, a seasonal fishing industry, and large, once-a-year bulk purchases of basic consumer goods. This condition parallels the windfall nature of earnings and probably accentuates the pattern of excessive spending and cash alienation.

Together, limited market opportunities, reduced winter access, and seasonal income may underscore the difficulty of managing funds over a medium-term planning horizon. Under these conditions, it is hardly surprising that households deplete cash reserves by late winter and that local commercial banks will not permit checking services to villagers. As Bristol Bay's commercial economy expands, it is increasingly evident that principals of financial management

and budgeting are neither understood nor practiced by the majority of villagers.

Unconventional Forms of Household Saving

Based on observations of zero cash saving, the occasional visitor to Bristol Bay might conclude that, as a whole, savings plays a minor role in that economy. However, if we broaden the earlier definition of personal saving--abstention from present consumption to increase future consumption opportunities--to include noncash elements, then a different interpretation of savings patterns emerges for Bristol Bay, even if the basic motivations to save are absent.

Bulk Purchases

A one-time bulk purchase that reduces costs from what it otherwise would have been under conditions of repeated, smaller purchases, represents an important form of intangible saving in an economy characterized by high-cost, limited seasonal access to markets. For example, to match \$100 in bulk-purchase savings, a household in the 33 percent tax bracket would have to earn an additional \$150. Furthermore, a bulk purchase that ties up \$1,000 but saves \$100 implies a 15 percent tax-free return on investment from the standpoint of the \$150 opportunity-cost savings. The \$1,000 in tied-up funds reflects abstention from other competing forms of present consumption and increases future consumption opportunities. It therefore satisfies the basis savings criteria.

Taking into account the cost of occasional transportation to Dillingham to purchase items that could have been bought once in bulk and shipped upriver on the household fishing boat's last run suggests that bulk purchases in Bristol Bay probably produce savings well in excess of 10 or 15 percent.

Four literage companies haul fuel, supplies, and durable goods to outlying Bristol Bay villages. Each company makes about ten barge trips upriver per season and transports a total of about one million gallons of fuel oil for residential and small commercial space-heating. In 1981, the average village household consumed about 1,000 gallons of fuel oil per year, with annual costs ranging from \$1,300 to \$1,600, including a shipping surcharge of about 25 cents per gallon (Goldsmith et al., 1981). Conservatively pegging the cost of transport at four times literage rates and assuming that the average village household ties up \$1,600 in upfront fuel purchases each fall season suggests that this household realizes a 56 cent tax-free return on each dollar spent. Summed over about 500 outlying village households, this implies intangible yearly bulk-purchase savings of about \$450,000 for fuel oil alone.

Residential Housing Stock

Village housing in Bristol Bay is composed primarily of owner-built dwellings and a sizable portion of government homes. Most nongovernment village housing is owned outright and constructed from unfinanced materials. Cash additions are another common

feature of Bristol Bay's residential housing stock. Growing families typically build single-room additions as they can afford. Older homes can be identified by the number of single room additions that have been built. Although data on cash additions is not available for outlying villages, an unpublished random household survey conducted for ISER by Dillingham high school students indicates that in 1981, 45 percent of residential housing in Dillingham and Aleknagik had single- or multi-room additions.

The figures in Table 2 summarize U.S. census data on housing unit ownership patterns for the 20-village study area. For all 20 villages combined, the proportion of total occupied housing units owned increased from 63 to 72 percent from 1970 to 1980. A different ownership pattern emerges if Dillingham is excluded from the count. The proportion of total occupied housing units owned decreases marginally from 77 to 75 percent over the same period. This suggests that, for the most part, change in housing ownership has been concentrated in Dillingham. Village housing ownerships have remained fairly constant at rates higher than those exhibited in Dillingham.

Census data on the value distribution of owner occupied housing suggests that nominal housing values appreciated sharply from 1970 to 1980. In 1970, respondents from all 20 villages indicated housing value of less than \$50,000. By 1980, two-thirds of total respondents indicated housing values in excess of \$50,000. The

TABLE 2. PROPORTION OF TOTAL OCCUPIED HOUSING
UNITS OWNED IN 1970 AND 1980

(Percent)

20 Study Area Villages

	<u>Including Dillingham</u>	<u>Excluding Dillingham</u>
1970	63 percent	77 percent
1980	72 percent	75 percent

SOURCE: U.S. Bureau of the Census, Special Tabulations, CNT1: 1970,
STF1: 1980.

median value of 1980 village housing was \$38,840 across all 20 communities. Excluding Dillingham housing units with a median value of \$59,900, the median value of outlying village housing falls to \$28,900 in 1980.

U.S. Department of Housing and Urban Development (HUD) homes are also an important factor in village housing. The timing and distribution of HUD homes are shown in Table 3. By 1980, HUD homes comprised about 12 percent of residential housing in the 20-village study area. Most villages now have HUD homes. Some villages (Dillingham and New Stuyahok) are scheduled to receive additional units from more recent HUD programs.

The Mutual Help Housing Program financed by HUD represents the third in a two-decade series of Federal low-income housing programs designed to gradually permit the owner to build equity and assume ownership. The two-part monthly payment includes a mandatory service charge of almost \$95 plus a conditional equity account charge for households able to afford to build equity. Out of fifty HUD homes in Dillingham, four families presently contribute to the equity account. A smaller proportion of families in HUD units in outlying villages are contributing to housing equity. For the most part, the HUD program has had a negligible effect on equity building and ownership. HUD's most significant impact may be the destabilizing effect of tying households that earn income seasonably into regular monthly payments.

TABLE 3. NUMBER OF HUD HOUSING UNITS BUILT

SUB REGION	COMMUNITY	DATE OF FULL AVAILABILITY						ALL YEARS
		PRE 1970	1970-1975	1976-1980	1981	1982	1983	
<u>1 WESTERN</u>								
	TOGIAK	0	0	30	0	0	0	30
	TWIN HILLS	0	0	0	0	0	0	0
	MANOKOTAK	19	0	0	0	0	0	19
	ALEKNAGIK	0	0	0	0	0	9	9
	SUM	19	0	30	0	0	9	58
<u>2 DILLINGHAM</u>								
	DILLINGHAM	0	0	50	0	20	0	70
<u>3 NUSHAGAK</u>								
	CLARKS POINT	0	0	0	15	0	0	15
	EKUK	0	0	0	0	0	0	0
	PORTAGE CREEK	0	0	0	0	0	0	0
	EKWOK	0	0	0	0	0	0	0
	NEW STUYAHOK	0	17	0	0	0	0	17
	KOLIGANEK	0	0	0	0	0	0	0
	SUM	0	17	0	15	0	0	32
<u>4 LAKE ILIAMNA</u>								
	NONDALTON	0	0	0	0	0	11	11
	NEWALEN	0	0	0	0	0	15	15
	ILIAMNA	0	0	0	0	0	0	0
	PEDRO BAY	0	0	0	0	0	0	0
	SUM	0	0	0	0	0	26	26
<u>5 KVICHAK/ALAGNAK</u>								
	KAKHONAK	0	0	0	0	0	12	12
	IGIUGIG	0	0	0	0	0	4	4
	LEVELOCK	0	0	0	0	0	15	15
	SUM	0	0	0	0	0	31	31
<u>6 BRISTOL BAY BOROUGH</u>								
	NAKNEK	0	0	15	0	0	0	15
	KING SALMON	0	0	0	0	0	0	0
	SOUTH NAKNEK	0	0	15	0	0	0	15
	SUM	0	0	30	0	0	0	30
<u>ALL VILLAGES</u>								
	SUM	19	17	110	15	20	66	247

SOURCE: U.S. Department of Housing and Urban Development, Special Tabulations.

Housing stock expansion from government programs addresses part of Bristol Bay's growing demand for residential housing. Between 1970 and 1980, the number of households in the Dillingham and Bristol Bay Borough Census Divisions increased from 988 to 1,460. This implies an annual average growth rate of 4 percent--double the rate of population growth over the same period. Part of this housing stock expansion is tied to the sharp decline in the average number of persons per household. Average household size fell from 4.6 persons in 1970 to 3.8 persons in 1980 (including Dillingham households). There are several reasons for this decline. They are:

1. Population expansion from net in-migration and natural increase;
2. A growing segment of young adults with smaller families than that reflected in populations with more advanced age distributions; and
3. rising average household income.

For the most part, housing stock accumulation patterns reflect pressure from population's changing age distribution and from economic expansion. Except for government housing subsidies, new housing units and housing additions are usually paid for with cash. Standard home-mortgage financing is all but absent in the outlying villages. According to Dillingham bankers, it is difficult to receive BIA approval to use Native land allotments as collateral for home mortgages. This institutional consideration is one of several barriers to standard housing finance in outlying villages. The difficulty in managing a monthly housing budget with seasonal cash earnings reflects a more fundamental constraint.

Capital Formation

Capital formation refers to net additions to a community's real capital. Examples include nonhousing-stock additions, rising entry-permit values, and new or upgraded fishing vessels. Cash invested in fishing and hunting gear that calls forth higher commercial and subsistence returns per dollar (or, equivalently, lowers the unit cost of harvesting fish and game) represents another form of household saving. In addition to expanded future consumption through harvest gains, capital formation that improves labor productivity and increases household net worth (i.e., total assets minus total liabilities) satisfies the basic savings criteria. The following discussion centers on two elements of capital formation in the Bristol Bay Salmon Fishery: limited entry permits and fishing vessel upgrading.

Limited Entry Program. Because of its effect on household net worth, the Limited Entry Program's influence on household savings patterns can not be ignored. Starting in 1975, participation in Alaska's commercial salmon fisheries was fixed according to the number of limited entry permits authorized by the Alaska Department of Fish and Game (ADFG). Permit value varies with the ebbs and tides of salmon runs, market prices, and expectations. The price of a limited entry permit is thought to reflect the expected value of the future stream of excess profits (i.e., total revenues minus total costs, including a normal return on investment for gear and equipment) available to the permit holder.

Bristol Bay drift gill net permit prices increased from \$1,166 in 1975, to nearly \$70,000 in 1979. Set gill net permit prices also appreciated, as shown in Table 4. As expected, growth in the number of drift and set gill net permits fished was comensurate with permit price appreciation over the same period. As shown in Table 5, residents of the 20-community study area owned 828 drift- and set-gill net permits in 1979. This implies a total value of \$41 million, or about \$34,000 in additional average household net worth for 1,188 census households--a reflection of long-run excess profitability in Bristol Bay's commercial fishery. By 1983, the number of permits increased to 1,051 for the same villages.

According to Langdon (1983), the bulk of this increase reflects a combination of several factors: (1) ADFG permanent-status authorization given to interim-use permits, (2) interfamily transfers, and (3) inmigration of persons who either held permits or purchased them after becoming Bristol Bay residents. Except for Port Moller (which is outside of the 20-community study area), there is not any evidence of permit purchases from outside holders by Bristol Bay residents since 1975.

Under unregulated circumstances, an industry favored by excess profits invites entry of new participants. Because entry into Alaska's commercial salmon fishery is fixed, permit holders are protected from competition by outside fishermen. In order to compete successfully, a the Bristol Bay permit holder need only

TABLE 4. NUMBER AND PRICE OF BRISTOL BAY LIMITED ENTRY PERMITS

YEAR	NUMBER OF PERMITS ISSUED			NUMBER OF PERMITS FISHED		PRICE \$
	INTERIM USE	PERMANENT	TOTAL	NUMBER	PERCENT	
<u>DRIFT GILL NET</u>						
1975	644	1,416	2,060	1,195	58	\$ 1,166
1976	99	1,621	1,720	1,288	75	2,536
1977	65	1,663	1,728	1,287	74	6,180
1978	78	1,700	1,778	1,490	84	21,638
1979	83	1,717	1,800	1,610	89	69,667
1980	110	1,717	1,827	1,670	91	NA
1981	107	1,720	1,827	1,667	91	NA
1982	<u>100</u>	<u>1,722</u>	<u>1,822</u>	<u>1,791</u>	<u>98</u>	<u>NA</u>
AVERAGE	161	1,660	1,820	1,500	82	\$22,797
<u>SET GILL NET</u>						
1975	205	716	921	409	44	NA
1976	5	759	764	471	62	\$2,755
1977	16	824	840	478	57	2,694
1978	19	891	910	610	67	8,507
1979	24	911	935	718	77	19,445
1980	34	914	948	754	80	NA
1981	42	915	957	744	78	NA
1982	<u>41</u>	<u>906</u>	<u>947</u>	<u>859</u>	<u>91</u>	<u>NA</u>
AVERAGE	48	855	903	630	70	\$9,546

SOURCE: Alaska Department of Fish and Game, 1982, Appendix Table 1, Langdon, 1980, p. 65.

TABLE 5. BRISTOL BAY RESIDENT LIMITED ENTRY PERMITS
BY COMMUNITY: 1979 AND 1983

SUB REGION	COMMUNITY	1979			1983					
		DRIFT	SET	TOTAL	DRIFT		SET		TOTAL	
					TOTAL	(INT)	TOTAL	(INT)	TOTAL	(INT)
<u>1 WESTERN</u>										
	TWIN HILLS	14	(0)	14	6	(0)	0	(0)	6	(0)
	MANOKOTAK	37	27	64	43	(0)	52	(3)	95	(3)
	TOGIAK	70	23	93	84	(16)	51	(6)	135	(22)
	ALEKNAGIK	30	19	49	31	(4)	13	(0)	44	(4)
	SUM	151	69	220	164	(20)	116	(9)	280	(29)
<u>2 DILLINGHAM</u>										
	DILLINGHAM	136	93	229	179	(20)	109	(2)	288	(30)
<u>3 NUSHAGAK</u>										
	KOLIGANEK	15	3	18	27	(0)	7	(1)	34	(1)
	EKWOK	16	0	16	8	(0)	0	(0)	8	(0)
	CLARKS POINT	10	9	19	13	(2)	10	(0)	23	(2)
	PORTAGE CREEK	10	2	12	5	(1)	6	(0)	11	(1)
	NEW STUYAHOK	30	4	34	31	(6)	1	(0)	32	(6)
	SUM	81	18	99	84	(9)	24	(1)	108	(10)
<u>4 LAKE ILIAMNA</u>										
	NEWHALEN	6	3	9	1	(0)		(0)	1	(0)
	ILIAMNA	12	21	33	16	(0)	16	(1)	32	(1)
	NONDALTON	12	13	25	14	(3)	14	(1)	28	(4)
	PEDRO BAY	2	2	4	4	(0)	4	(0)	8	(0)
	SUM	32	39	71	35	(3)	34	(2)	69	(5)
<u>5 KVICHAK/ALAGNAK</u>										
	IGIUGIG	6	0	6	6	(0)	1	(0)	7	(0)
	LEVELOCK	11	8	19	14	(1)	8	(0)	22	(1)
	KAKHONAK	12	3	15	3	(0)	0	(0)	3	(0)
	SUM	29	11	40	23	(1)	9	(0)	32	(1)
<u>6 BRISTOL BAY BOROUGH</u>										
	SOUTH NAKNEK	15	34	49	21	(5)	32	(4)	53	(9)
	NAKNEK	47	66	113	53	(1)	85	(7)	138	(8)
	KING SALMON	3	4	7	24	(1)	37	(2)	61	(3)
	SUM	65	104	169	98	(7)	154	(13)	252	(20)
<u>ALL VILLAGES</u>										
	SUM	494	334	828	605	(68)	446	(27)	1051	(95)

SOURCE: Langdon, Steve. Special Tabulations for the Commercial Fisheries Entry Commission data base, 1983.

guard against productivity gains of other registered fishermen that could capture part of his/her share of the resource. Net capital formation in the Bristol Bay commercial salmon fishery is, therefore, confined to existing participants.

Vessel Ownership Patterns. The primary method for improving fishing productivity is to upgrade fishing vessels. Basic characteristics of Bristol Bay's total drift gill net fleet (including nonresidents of Bristol Bay) are shown in Table 6, from 1969 to 1980. While average length has remained fairly constant at about 29 feet, average horsepower increased sharply and average vessel age dropped rapidly after 1977. Other characteristics not shown in Table 6, including the number of vessels with diesel engines and fiberglass hulls, also registered significant gains after 1977 (see Terry et al., 1982). Except for vessel length, the data suggests a clear pattern of vessel upgrade in the late 1970s. Less clear is whether these improvements are evenly distributed across residents and nonresidents of Bristol Bay.

According to the results of a 1980 survey of Bristol Bay Native Fishermen, Langdon (1980) reported that although "the majority" of drift gill net fishermen operated vessels in the 32-foot class in 1980, over 40 percent operated smaller skiffs powered by outboard motors. Langdon (1980) notes further that drift gillnetting in open skiffs still predominates in the western communities of Togiak and Manokotak. Indeed, none of the 25 survey respondents from Togiak

TABLE 6. FLEET SIZE AND PERMITS FISHED IN BRISTOL BAY SALMON
DRIFT GILL NET FISHERY

YEAR	VESSEL CHARACTERISTICS ^a				TOTAL DRIFT GILL ^b NET PERMITS FISHED	RATIO OF FLEET SIZE TO PERMITS
	NUMBER OF VESSELS	AVERAGE LENGTH (feet)	AVERAGE HORSEPOWER	AVERAGE AGE (years)		
1969	1,216	29.3	149.3	10.1	NA	NA
1970	1,298	29.0	150.4	10.4	NA	NA
1971	1,383	29.0	148.5	11.0	NA	NA
1972	1,357	29.1	151.9	11.7	NA	NA
1973	1,136	28.9	152.1	12.3	NA	NA
1974	626	28.3	150.1	11.3	NA	NA
1975	1,203	29.1	154.9	14.1	1,195	1.01
1976	1,299	29.2	155.6	14.5	1,288	1.01
1977	1,281	29.1	155.6	15.0	1,287	1.00
1978	1,578	28.6	160.1	13.5	1,490	1.06
1979	1,821	28.6	175.7	12.3	1,610	1.13
1980	1,832	29.1	200.4	10.1	1,670	1.13
1981	NA	NA	NA	NA	1,667	NA
1982	NA	NA	NA	NA	1,791	NA

SOURCES: ^aTerry et al., 1982.

^bNelson, Alaska Department of Fish and Game, 1981.

operated a 32-foot vessel in 1980. Recent field investigations indicate that only a few Togiak residents have upgraded to the 32-foot class since 1980. Skiffs and vessels in the 28- to 29-foot class are also in demand.

Data on units of gear fished by residence of operator shown in Table 7 suggests that resident drift gill net fleet participation has increased since 1974, but at a slower rate than nonresident Bristol Bay vessels. As a result, the share of total vessels owned by residents fell from 60 percent in 1974, to 36 percent in 1980. The resident share of total set gill net gear declined from 75 to 58 percent over the same period.

In summary, although a clear pattern of vessel upgrade is evident, there does not appear to be exclusive focus on 32-foot, limit-class vessel purchases. The evidence reveal does not reveal resident versus nonresident patterns of vessel improvement.

Changing Debt Structure

In addition to traditional cannery lending practices, there are two primary sources of debt capital available to Bristol Bay fishermen. The Alaska Department of Commerce and Economic Development (DECD) operates a Commercial Fishing Loan Program that is geared primarily toward fishing vessels. Processor loans and entry permit loans also receive a small portion of DECD loanable funds.

TABLE 7. UNITS OF GEAR FISHED IN BRISTOL BAY
BY RESIDENCE OF OPERATOR, 1969 - 1980

YEAR	BRISTOL BAY	OTHER ALASKA			NON- RESIDENT	TOTAL
		RURAL	ANCHORAGE	TOTAL		
<u>DRIFT GILL NET</u>						
UNITS OF GEAR FISHED:						
1969	569	224	97	321	914	1,804
1970	533	251	175	426	667	1,626
1971	574	230	153	383	816	1,773
1972	554	195	120	315	611	1,480
1973	1,052	256	151	407	740	2,199
1974	388	67	37	104	148	640
1975	491	163	88	251	501	1,243
1976	506	159	101	260	557	1,323
1977	484	74	167	242	560	1,287
1978	568	89	230	319	691	1,578
1979	656	101	270	371	794	1,821
1980	658	107	274	381	788	1,827
<u>SET GILL NET</u>						
UNITS OF GEAR FISHED:						
1969	335	48	52	100	81	516
1970	354	60	65	125	62	541
1971	328	34	42	76	67	471
1972	348	21	50	71	59	478
1973	384	16	42	58	36	478
1974	177	15	21	35	23	235
1975	262	29	43	72	37	371
1976	315	42	46	88	57	460
1977	279	15	99	114	85	478
1978	NA	NA	NA	NA	NA	NA
1979	NA	NA	NA	NA	NA	NA
1980	549	26	156	182	217	948

SOURCES: 1969-76 units fished from Rogers.

1977-1980 estimates based on resident distribution of permits held from Steve Langdon, 1980, and on proportion of total permits fished from Alaska Department of Fish and Game, 1982.

The number and value of commercial fishing loans from DECD are shown for the period 1974 to 1984, in Table 8. This data indicates that loans to Bristol Bay fishermen for fishing vessels increased sharply prior to the peak fishing seasons of 1979 and 1980, before declining in later years.

The decline in loans administered after 1980 may reflect a combination of reduced fishery potential and of rising involvement in lending by the Alaska Commercial Fish and Agriculture Bank (CFAB). CFAB began operations in 1980 and represents the second primary source of debt capital to commercial fishing interests. Like DECD, CFAB procures loans for vessels, entry permits and gear, and fish processor facilities. At the time of this writing, CFAB data on loan involvement in Bristol Bay were not available. However, it is probable that CFAB has processed about 50 loans for commercial fishing vessels over the period 1980 to 1983. This would tend to offset the decline in number of state loans after 1980, shown in Table 8.

Data from Table 8 suggests further that availability and use of state financing for fishing vessels may signal an important departure from traditional cannery financing. Although cannery loan data is not available, recent field investigations tend to confirm that resident fishermen are moving away from cannery indenture toward independent status; a pattern that would preclude continued cannery participation in commercial fishing-vessel financing.

TABLE 8. ALASKA DEPARTMENT OF COMMERCE
AND ECONOMIC DEVELOPMENT
LOANS IN BRISTOL BAY^a

<u>YEAR</u>	<u>COMMERCIAL FISH^a</u>	
	<u>NUMBER</u>	<u>VALUE</u>
1974/1975	2	65.0
1976	0	0
1977	2	35.9
1978	10	294.1
1979	41	1,630.9
1980	83	4,002.5
1981	12	627.3
1982	20	1,313.1
1983	7	2,554.7
1984	<u>0</u>	<u>0</u>
ALL YEARS COMBINED	177	9,669.2

^aLoan count and value in 1983 and 1984 are for district 26.

According to Jerry Liboff, a resident, commercial fisherman, and tax consultant for several Bristol Bay villages, prior to 1978 nearly all village fishermen received cannery loans to finance their boats. Today, Liboff claims that only 10 percent of village fishermen receive cannery financing. Liboff suggests that several factors account for this change:

1. Rising interest rates in the late 1970s discouraged cannery lending.
2. Rising fish prices encouraged fishermen to shift from canneries to higher-price independent buyers.
3. Increased government involvement in low-interest commercial fishing loans presented fishermen with alternative (often subsidized) financial support.

To summarize, coincident with a decline in traditional cannery financing was the emergence of state and private capital to finance vessel improvements. The data in Table 8 suggests that Bristol Bay resident fishermen have actively participated in lending programs for vessel upgrading. However, Bristol Bay fishermen who now rely on commercial finance, no longer enjoy the often negotiable terms of traditional cannery fishing boat loans, typically a proportion of the seasons gross receipts. In unfavorable fishing years, the negotiable terms of cannery financing were an important safety valve for many Bristol Bay fishing households.

In contrast to this, fishermen are tied to strict, yearly loan payments under conventional financing arrangements. More important,

the limited entry permit is typically used as collateral for state and private lending. This, more than any other consideration, represents a significant change in the structure of Bristol Bay's household debt. It signals a potentially unstable precedent given the strict terms of conventional finance, the uncertainty of future salmon markets and run size, and the overriding importance of the entry permit as the key to the Bristol Bay fisherman's livelihood.

Conclusion

Despite significant economic growth over the past decade, zero cash saving is still a predominant factor in Bristol Bay's outlying villages. About three-fourths of total household cash income is earned over a short but intense fishing season, and it is usually spent well in advance of next season's salmon runs. In this regard, cash appears to be used in patterns similar to the yearly cycles of resource harvest.

Yet, household saving does occur in less obvious, noncash forms. One-time bulk purchases represents a method of implicit household saving; one that is tied to seasonal availability of cash and limited access to markets.

Capital formation (i.e., net investment) in the form of commercial-fishing vessel upgrades represents another form of saving. The availability and use of state and private bank loans to finance vessel improvements is a significant departure from

traditional cannery financial assistance to fishermen. The trend toward commercial lending suggests two important changes in the structure of household debt: First, the limited entry permit is the principal form of collateral for commercial-fishing loans. It is also essential to the villager's participation in Bristol Bay's expanding commercial economy. Strict financing terms--for which the implications are not fully understood by most village fishermen--combined with uncertainty surrounding future salmon markets and run size suggests a hazard to the stability of the village-household economic unit; one that goes well beyond the difficult task of making do in a single bad fishing season.

Second, the use of commercial financing signals a break in the traditionally direct relationship between household saving and investment. Commercial loans enable villagers to leverage certain assets to expand future production and consumption opportunities beyond what other forms of household savings could attain. It implies increased banking system involvement and increased villager commitment to the commercial economy.

Evidence of this pattern is already beginning to appear in connection with consumer loans for snow-gos, three-wheelers, and other moderate-size durable goods. Dillingham's only commercial bank is presently processing seven consumer loans for snow-go purchases by Togiak residents.

Greater banking system lending implies that more money is being retained and circulated in Bristol Bay's economy--both in Dillingham and in the outlying villages. This implies a structural change that could have a progressive affect on Bristol Bay's relatively low income multiplier.

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