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Effects of Transfers on Remote Regional Economies: The Transfer Economy in Rural Alaska

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ABSTRACT In this paper we examine the effects of transfers on the economies of remote regions. A model which describes the consequences of different types of transfers on settlement patterns is developed. The growth of the transfer economy in rural Alaska and its effect on population and income is reviewed. We find that transfer programs in remote regions may have consequences far broader than their original intent. While the programs may improve the standard of living for regional residents, they may also lead to inefficient settlement patterns, increasing dependence on transfers, and a higher cost of eventual adjustment.

THIS PAPER EXAMINES the effect of transfers upon the economies of remote regions, or regions with limited development potential. As an example, we examine the transfer economy of rural Alaska.

The effects of transfer programs on individuals have received extensive treatment in the literature. One effect which has been suggested is that transfer programs may keep people poor and dependent (Darity and Myers 1987, Anders 1981). This paper examines the effects of transfers at a regional level. This approach recognizes that not all transfers are given to individuals; transfers may also be given to local governments or other organizations, and be received in the form of public services or facilities. We suggest that the effects of transfers at the regional level may be similar to and may compound those found at the individual level.

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Regional transfers have significant effects upon the economies of remote regions. Without transfers, the economies of remote regions depended on the local resource base. With transfers, a remote regional economy may no longer be limited by its resource base, but rather by its ability to secure transfers from other regions. If the "need" for transfers is high, due to high costs of providing for minimum economic rights, or if the region has a political right to high resource rents, transfers may replace resources as the base of the economy.

"Transfer economies" raise a number of policy issues. Transfers may provide for legitimate needs and rights of citizens. However, they may also hinder development based upon local resources. As transfer regions grow in population, they require more transfer resources. This creates political pressures in the transferring regions to limit transfers. This political pressure, together with fluctuations in the economies of the transferring regions, makes transfer economies vulnerable to rapid decline in their economic base.

Rural Alaska provides dramatic examples of how transfer economies may arise in remote regions, due to the scale of per capita transfers and the high cost of providing public services. In some regions of rural Alaska, transfers directly account for more than two-thirds of all income. Rural Alaska also provides examples of the many policy issues raised by transfer economies.

This paper examines the origins and implications of transfer economies in remote regions, using rural Alaska as an example. The paper is divided into four sections. The first section defines the concepts of remote regions and transfer economies. The second section presents a model of transfer economies. The third section examines transfer economies in rural Alaska. The final section examines public policy issues raised by transfers to remote regions.

Transfer Economies

A region may be distinguished from a nation by the fact that resources may easily flow to other regions in which rates of return are higher.[1] Handel (1966) considered a region "developed" when residents and resources are fully employed at real rates of return equivalent to those earned in other regions. For mobile resources, the real income condition is necessary to maintain the existing population level. Handel defined a "viable economic region" as one which can be developed without a permanent subsidy or loss of population. Thus a region may be "developed" but not necessarily "viable" if development is achieved through subsidy.

An underlying assumption of much regional development literature is that every region has the potential for viable development, or to fully employ its population at a competitive rate of return without subsidy. Bringing about this development is simply a matter of finding the missing ingredient. The list of potential missing ingredients includes human capital and physical capital, both private and public. This list has been expanded to include entrepreneurial abilities (Hirschman 1958, Beveridge and Schindelka 1978). Transfer of capital, training of labor, or a change in the incentive structure is assumed to be all that is necessary for economic development.

Recently, Leven (1980) offered the concept of a "remote economic region," which is counter to this underlying assumption of regional development literature. A remote economic region has limited opportunities for investment. Without subsidies, a remote economic region can offer only limited employment for its residents at the national wage rate and can support only a limited viable population. There is no ingredient which could bring about development to support a population above this viable level without subsidy.[2]

Unless outmigration occurs, remote regions with populations above a viable level require permanent transfers. We refer to the economies of these regions as "transfer economies."

The Creation of Transfer Economies. Remote regions become transfer economies whenever transfers allow population to increase beyond a region's viable level. Transfer economies may be created either through attempts by the central government to increase the standard of living in a region above that which can be supported by the existing economic base, or through central government attempts to mitigate the effects of decline in a region's economic base. Rural Alaska experience illustrates both of these mechanisms for the creation of transfer economies.

In Alaska, contact of Native peoples with the outside world has led to a dramatic increase in the desired material standard of living. The political and legal expansion of minimum economic "rights" guaranteed to individuals by government made the standard of living of rural residents the concern of the central government. The minimum standards were out of all proportion to the ability of many rural regions to support them. A variety of federal and state government programs have attempted to make up the difference.

Rural Alaska also offers abundant examples of decline in an economic base, such as abandoned mines and fish canneries. These declines may occur due to resource depletion or economic or regulatory reasons. If only market forces were at work, decline in the original economic base would be accompanied by either outmigration or lower per capita incomes. Because outmigration and reduced incomes are painful, government's response may be to reduce the pain of the adjustment through transfers (Jacobs 1984).

A Model of the Transfer Economy

Regional transfers are usually provided for the purpose of increasing per capita income. However, the effect of transfers on per capita income will be dampened to the extent that higher per capita incomes cause people to migrate into the region. In this section, we use a simple model to illustrate these effects.[3]

The model is summarized in Equations 1 through 3. Income (Y) in the regional economy is either basic sector income (B), support sector income (S), or transfer income (T). Transfer income, which is provided by a central government, may be either direct cash transfers to individuals or central government spending to support employment in the region—for example, through capital projects or funding of government employment.[4]

Using an economic base framework, support sector income is related to basic sector income and transfer income through the multiplier (m). Regional population is endogenous, and is a function of per capita income (y), as shown in Equation 3, which we refer to as the "migration function."

$$(1) \quad Y = B + T + S$$

$$(2) \quad S = (B + T)\, m$$

$$(3) \quad P = P(y)$$

Regional income (Y) is a function of basic sector income, transfer income, and the multiplier:

$$(4) \quad Y = B + T + S = (B + T)\,(1 + m)$$

By injecting income into the local economy from outside the region, transfers have the same effect upon regional income as basic sector activity (Mulligan and Gibson 1984).

The effect of transfers upon per capita income depends upon the migration function. The effect of transfers is maximized if population is fixed, with no migration response to changes in per capita income. In this case, dividing Equation 4 by population (P), we have

$$(5) \quad y = (b + t)\,(1 + m)$$

where (b) is per capita basic income. Per capita transfers of (t) increase per capita income by t $(1 + m)$. Transfers may allow residents of a community with no economic base to earn a positive per capita income.

The effect of transfers upon per capita income is reduced if increases in per capita income attract immigrants to the region. For a given level of basic income and transfer income, an increase in population causes both per capita basic income and per capita transfer income to decline.

The extreme case would be one in which any increase in income is completely offset by a corresponding increase in population. In this case, per capita income is fixed at an equilibrium level y^*, which may be a function of per capita income outside the region or alternatively a desired or "target" standard of living within the region. The total population which can be supported at per capita income y^* is given by[5]:

$$(6) \quad P = \frac{B\,(1 + m)/y^*}{1 - (t/y^*)(1 + m)} .$$

Without transfers, population (P) which could be supported at per capita income y^* would be simply:

$$(7) \quad P = B\,(1 + m)/y^* .$$

Thus, in the fixed per capita income case, transfers serve to "multiply" population by a factor of

$$(8) \qquad \frac{1}{1 - (t/y^*)(1 + m)} .$$

In general, we would expect transfers to have effects between these two extremes, with transfers tending to increase per capita income, but with this effect reduced to the extent that population responds, through migration, to the level of per capita income.

We might expect the migration response to be greater, the higher the pre-transfer level of per capita income is relative to per capita income in other regions, and the more important non-income related factors are as reasons for desiring to live in a region. In other words, the higher per capita income already is in a region, and the more that people are willing to accept a lower-than-average standard of living in order to live in a region, the more difficult it will be to raise the standard of living in the region through transfers.

Transfer Policies. The economic effects of transfers depend not only on the regional migration response but also upon the transfer policies of the central government. There are two critical components to transfer policies: the form in which transfers are provided, and the extent to which total transfers are tied to population and income.

The form in which transfers are provided may directly affect the migration response to transfers. If transfers pay for employment in government services or capital projects (as opposed to being provided as direct payments), they will lead directly to migration from outside the region if local residents do not have the skills required for these jobs.

The greater the extent to which total transfers are tied to population, and the less they are tied to per capita income levels, the greater their potential economic impact upon a region. If population responds to per capita income and regional transfers are tied to regional population, then the potential for transfers to "multiply" regional population is reinforced as increases in population further increase transfers. The population multiplier in Expression 8 is greatest if per capita transfers (t) are fixed, rather than declining as population rises.

The population multiplication effect will be greater, the higher per capita transfers and the lower the "target" standard of per capita income y^*. Ironically, the more remote and high-cost a region, the greater the fixed per capita transfer entitlement is likely to be, and thus the greater the population multiplier effect.

There are several reasons for which central governments are likely to provide higher per capita transfers to remote regions. First, central governments may wish to guarantee a minimum level of public services in all regions. The per capita costs of providing this minimum level of public ser-

vices may be higher in remote regions. There may be economies of scale associated with the provision of services. For example, one school principal may be needed whether or not the school has 20 or 200 students. If communities in remote regions are small, the per capita cost of providing public services will be higher. In addition, extreme physical conditions in remote regions, such as harsh climates, may increase per capita costs of providing public services. Remote regions may also have special needs, such as bilingual education.

In the extreme, high costs of providing public services could actually benefit a region if higher costs entitle the region to more transfers. For example, snow-plowing income can be higher in a region which needs snow-plowing than in one which does not, if the central government pays for the plowing.

Second, central governments may also wish to guarantee a minimum level of real per capita income in all regions, and may thus provide higher nominal transfers for regions with a higher "cost of living." The level of real per capita transfers may also be higher, depending on the extent to which the cost-of-living index reflects actual costs and purchasing patterns within the transfer region. For example, high local food prices may result in a high cost-of-living index. However, if residents of a region obtain a substantial portion of their food from hunting and fishing, their actual cost of living may be considerably lower than reflected by this index. Thus, if the cost of living index reflects national rather than regional consumption bundles, it may overstate the actual cost of living within the region, resulting in higher real per capita transfers.

A third reason for which remote regions may receive higher per capita transfers may be a low level of "target" per capita income for residents of the region. The central government may wish to provide a higher level of per capita transfers to "poor" places, in order to increase their standard of living. However, if the target standard of living in a remote region is lower than in other regions, transfers may instead have the effect of encouraging return migration or discouraging out-migration, while the region remains poor.

In sum, the provision of transfers can increase the level of population in a region beyond its viable level. In the extreme, it may be possible for transfers to provide the entire economic base of a region or for people to live in a region without any basic activity. These effects may be exaggerated for remote regions to the extent that they receive higher levels of per capita transfers, so that transfers may tend to increase population the most in the least viable areas.

The Transfer Economy in Rural Alaska

In this section, we examine the economic structure of coastal western Alaska, a remote region which has received very high transfers. Competitive investment and employment opportunities in rural Alaska are limited by a wide variety of factors: a harsh environment, low population density,

limited infrastructure, long distances from markets, and a traditional subsistence culture.

Coastal western Alaska includes the four census divisions of Wade-Hampton, Bethel, Nome and Koyuk.[6] These four census divisions have a combined area nearly twice that of Iowa. The 27,000 residents of this area live in 83 villages, 57 of which have populations of less than 300. There are only three communities with populations of more than 2000, of which Bethel (3600) is the largest.

Costs of living and doing business in coastal western Alaska are extremely high. Contributing to these costs are limited market size, low population density, and lack of infrastructure. There are no railroads and very few roads between communities. Most transportation is by air, or during the summer by water.

More than 85 percent of the residents of coastal western Alaska are Alaska Natives. Historically, the economic base of the region consisted of subsistence activities—fishing, hunting, and gathering—which supported a population similar to that of today, but at a much lower material standard of living (Rogers 1962). Subsistence activities continue to be important, providing a major source of food (Huskey 1983).

Besides subsistence, basic activities in coastal western Alaska are limited primarily to seasonal commercial fishing and trapping. Placer mining, tourism, and military sites are also important in some areas. There is potential for some growth in these and other activities, such as hard-rock mining, reindeer herding, and fur farming. However, this potential is limited: almost all of these activities can be undertaken elsewhere more cheaply and with a higher rate of return.

Further limiting the economy of the region is the small size of the support sector multiplier. Despite high transportation costs, most goods and services can be imported more cheaply than they can be produced locally. As a result, income in activities such as fishing generates relatively little additional income.

A wide variety of federal and state programs provide direct or indirect transfers to rural Alaska. Direct transfers to coastal western Alaska are summarized in Table 1. Direct transfer programs include direct employment by the federal and state governments, direct cash payments from the federal and state governments, and local government and private sector employment funded by state and federal transfers. Indirect transfers include school lunch programs, postal service subsidies, passenger air service subsidies, and a wide variety of state loan programs. It is difficult to estimate total indirect transfers, but it is likely that they amount to thousands of dollars per capita.

Net transfers to rural Alaska are similar to total transfers, because taxes in rural Alaska are low: Alaska has no statewide sales or income tax, and low cash incomes result in low federal income taxes. The transfer programs listed in Table 1 have arisen as a result of three broad factors. The earliest basis for transfers to rural Alaska, and a continuing source of transfers, has been the special relationship of the federal government to Alaska Natives.

Payments of nearly one billion dollars to Alaska Native corporations under the Alaska Native Claims Settlement Act was a major one-time transfer, and the federal government continues to provide substantial funding for Native health care, Native education, and a variety of Native social service programs.

TABLE 1. SELECTED DIRECT TRANSFER PROGRAMS IN COASTAL WESTERN ALASKA, 1984

	Approximate per capita transfers 1984
Transfers through Federal and State Funding of Local Services and Facilites	7100
State employment	1200
State assistance to local governments	300
State assistance for education	2400
State social service grants	1900
State office leases	40
State and federal capital spending	600
Federal assistance to local governments	20
Federal employment	700
Transfer Payments to Individuals	2000
Alaska Permanent Fund dividend program	300
Alaska longevity bonus program	100
Aid to families with dependent children	200
Supplemental security income payments	200
Food stamps	200
Other income maintenance programs	20
Unemployment insurance benefits	200
Retirement, disability and health insurance benefit payments	600
Veterans benefits	50
Other transfer payments	100
Negative Transfers	
Federal income taxes	− 1000
Net Transfers	8100

Sources: Estimates based on figures published by Alaska Department of Revenue, Alaska House Research Agency, Bureau of Economic Analysis.

Note: Amounts over $100 are rounded to nearest $100. Amounts under $100 are rounded to nearest $10.

A second factor has been the growth of federal and state programs which attempt to provide minimum levels of income or services for all citizens. Some programs provide income or commodity assistance based on need, such as Aid for Families with Dependent Children (AFDC), food stamps, or Alaska's rural energy assistance program. More than one-third of the

families in coastal western Alaska receive transfer income under needs-based public assistance programs. Other programs provide indirect subsidies, such as those which provide in large part for postal freight service, television service, and telephone service in rural Alaska.

These programs reflect a social, political and legal trend in American society to define minimum levels of income or services as entitlements or rights. Examples of such rights include "the right to decent housing" or "the right to adequate health care" or "the right to a safe water supply." The growth in entitlements or rights has particularly significant implications for the economy of rural Alaska because rights are not limited by cost. Since the cost of providing services in rural Alaska can be extraordinarily high, they can be the basis for very high transfer levels. As the result of a lawsuit in the mid-1970s, the State of Alaska agreed that children in rural Alaska had a right to a local high school education in every village with an elementary school—even if there is only one student (Kleinfeld et al. 1985). Since this settlement, the state has provided transfers of hundreds of millions of dollars to fund the construction and operation of high schools in small rural villages.

A third factor in the growth of rural transfers has been the discovery of the Prudhoe Bay oil field and the capture of enormous resource rents by the State of Alaska (and some local governments, such as the North Slope Borough). These rents made possible a wide variety of transfer programs to all areas of Alaska, urban as well as rural. While there is no comprehensive time series which measures the growth of state transfers due to oil rents, the overall growth in the state budget provides an indication of this growth. Between 1969 and 1984 total state expenditures per resident increased by a factor of more than ten, from $680 to nearly $7000 (Goldsmith et al. 1986). Net transfers were increased by the elimination of the state income tax in 1979. Further contributing to the growth of rural transfers has been the evolution of rural political power within the state and federal systems.

Table 2 shows our estimates of per capita income by sector in coastal western Alaska for 1969 and 1984. The "transfer" sector includes direct transfer payments or income earned in activities directly supported by transfers.[7,8]

In 1984, we estimate that transfers accounted for nearly one-half of personal income in coastal western Alaska, and represented nearly two-thirds of the economic base of the region.
coastal western Alaska was 3.1. Thus, transfers permitted this region to support a population three times as great as could have been supported at the same per capita income level without transfers.

Comparing the region in 1969 and 1984 provides an indication of the effects of transfers on the regional economy. During this period real per capita transfers tripled. Increased transfers resulted in an increase in both real per capita income and population: real per capita income in the region increased by 89 percent and population increased by 30 percent. These increases occurred even though per capita basic sector income declined slightly.

TABLE 2. ECONOMIC STRUCTURE OF FOUR RURAL ALASKA CENSUS DIVISIONS, 1969 and 1984

	1969	1984	Ratio, 1984 to 1969
Population	21,200	27,600	1.30
Real Per Capita Income (a)			
Transfer	1966	5951	3.03
Basic	3636	3526	0.97
Support	1440	3520	2.44
Total	7041	12,997	1.85
Per Capita Income as Share of Anchorage Per Capita Income (Percent)	56	68	1.21
Share of Income (Percent)			
Transfer	28	46	
Basic	52	27	
Support	20	27	
Share of Economic Base (Percent)			
Transfer	35	63	
Basic	65	37	
Share of Transfers (Percent)			
Earnings	64	67	
Other	36	33	
Support Multiplier	0.48	0.47	0.98
Transfer Multiplier	1.7	3.1	1.80

Source: Bureau of Economic Analysis. Basic income is assumed to include 100 percent of earnings in agriculture, mining, manufacturing, military, and non-disclosed employment, 10 percent of earnings in federal civilian employment, subsistence earnings of $2000 per capita, and all income from dividends, interest and rent. Transfer income is assumed to include direct transfer payments, 80 percent of earnings in construction and state and local government employment and 20 percent of earnings in transportation, public utilities, and services employment. All other income is assumed to be support income. See Note 8 for a discussion of subsistence earnings assumptions.

[a] 1969 figures adjusted by ratio of Anchorage CPI in 1984 to Anchorage CPI in 1969.

The pattern found in western coastal Alaska appears to have been repeated throughout rural areas of the state. Transfers have expanded similarly for all rural residents. Between 1970 and 1980 rural Native per capita income increased from 34 to 40 percent of urban Alaska income (U.S. Census 1980). The pattern of population growth found in western Alaska was also repeated in other rural regions. Kruse and Foster (1986) found the population of the smallest places in Alaska—those with populations of less than 500—experienced net in-migration between 1970 and 1980. This was a reversal of the historic trend which had led to predictions of the eventual disappearance of these places (Alonso and Rust 1976).

Transfer Economies and Public Policy

From a national perspective, place-specific transfers are an inefficient way of addressing poverty. Not all regions have a viable economic base which provides the potential to support their existing population. Limited public funds can most efficiently be used to encourage development in those regions with viable economic development opportunities or to subsidize the movement of population to regions which can support additional population.

While transfers may increase the welfare of residents of transfer regions, they may also have significant costs for these regions. Transfers may encourage the growth of places which are already nonviable. In addition, the existence of transfers may magnify the population effect of regional growth policies and may limit their usefulness (Boadway and Flatters 1981).

Another problem is that transfers may compete with and distort the nontransfer economy of a region. Government and private transfer agencies compete with the nontransfer economy for labor, thus inflating wages and prices above those which would prevail in the absence of transfers. Wage inflation is increased to the extent that wages for transfer employment are based on nonlocal labor markets, or wages are deliberately inflated to increase transfer income. This wage inflation may limit the supply of labor to nontransfer activities which would be viable at lower, market-clearing wages. Employment in transfer jobs may also cause residents to bypass viable seasonal activities such as commercial fishing. Often, such distortions due to transfers may not be recognized within the region. Growing transfer employment may create an illusion of economic development while the basic sector of the economy is actually declining.

The existence of transfers also encourages rent-seeking behavior on the part of regional residents. Residents of non-viable regions are not concerned with global efficiency, but with their own welfare. They wish to remain in their regions and they want their regions to prosper. Because residents of these regions are also voters and citizens, they have a claim on public resources. Efforts to secure a share of these resources are not costless (Krueger 1974, and Bhagwati and Srinivasan 1980). The costs to the region include the entrepreneurship and human capital that are not available for the nontransfer sector of the economy.

Transfer economies are dependent economies. As a group, residents of transfer economies have limited control or influence over their economic destiny: political decisions made by others are keys to their livelihood. The very political factors which generate transfers limit the standard of living in transfer economies to levels below that of viable regions. As individuals, recipients of transfers may also become increasingly dependent upon the transfer income and services, such as energy subsidies to heat new, energy-inefficient homes. It is ironic that the greater material prosperity which has been provided by the transfer economy has been accompanied by a decline in many measures of individual well-being. For example in coastal western Alaska, substance abuse, family violence and suicide have increased dramatically even as per capita incomes have been rising.

The greatest problem with transfers as the base of a regional economy may be that they are unstable. Transfers are limited by the ability and willingness of other regions to provide transfers. As transfer economies grow, they require more transfer resources. This creates political pressure to limit transfers. This political pressure, together with fluctuations in the economies of the transferring regions, makes transfer economies vulnerable to rapid decline in their economic base. Rural Alaska is currently faced with just such a decline in transfers, as state oil revenues have declined dramatically with the decline in world oil prices. State and local government employment is being cut back, benefits under direct transfer programs are being reduced, and capital projects which provided important cash income for many families have been nearly eliminated.

Thus residents of nonviable transfer regions may eventually face locational adjustments anyway. Current transfers may merely serve to delay these adjustments. Thus the most important public policy issue for the citizens of nonviable regions may be whether the postponement of adjustment through transfers makes the eventual adjustment more or less painful.

Conclusions

We have argued in this paper that transfers to remote regions may have economic effects far broader than the original intent of particular transfer programs. Transfer programs which are intended to provide citizens of a region with minimum levels of income and services may lead to inefficient patterns of settlement, increasing dependence on regional transfers, and a higher cost of eventual economic adjustments. These effects are magnified to the extent that the flow of transfers is linked to the "needs" of the region. Since "needs" are higher where costs are higher, transfers tend to favor those areas which are least economically viable.

Recent literature suggests that transfer programs may actually work to increase the extent of poverty by reducing labor supply effort and initiative (Darity and Myers 1987). We suggest that there may be an additional spatial effect of transfers which keep the poor in nonviable areas, reducing their opportunities to escape poverty.

The example of rural Alaska suggests that regions and individuals rarely refuse transfers. For transfer recipients, the benefits outweight the perceived potential long-run costs, which may receive little consideration. More generally, the potential problems associated with regional transfers also seem to receive little attention at the state or national level. Public policy debates over transfers generally focus on the cost of the transfer programs, rather than on negative effects which they may have.

Not all groups would agree as to the goals or implications of transfers. Not everyone agrees that regional economic efficiency and mobility are good things. In rural Alaska, mobility is perceived by many as a direct threat to cultural integrity. In addition, changes to transfer policies may represent economic and political threats to individuals and groups within transfer regions.

There are no easy solutions to the distortion caused by regional transfers. Nevertheless, public policy effects of transfers should be addressed; over time, transfers may have significant effects on national and regional economic structure, settlement patterns and well-being.

NOTES

1. A "region" may be a broad area or an individual community.
2. Remoteness is not absolute: over time a region may become more or less remote, and the viable population may change, due to changes in technology, markets, and competitive rate of return for capital and labor. However, a region may be considered remote for a given period during which these factors are unlikely to offer opportunities for competitive investments.
3. We are indebted to Matt Berman for helpful suggestions in the development of this model.
4. We assume that the economy pays no taxes to the central government. Alternatively, transfers may be measured as net of taxes. The identical model may be used to examine the impacts of taxes upon a transferring region.
5. $Y = (B + t\,P)\,(1 + m)$

   $= (B + t\,(Y/y^*))\,(1 + m)$

   $= (B + Y\,(t/y^*))\,(1 + m)$

   Rearranging, we have:

   $$Y\,(1 - (t/y^*)(1 + m)) = B\,(1 + m)$$

   which gives:

   $$Y = \frac{B\,(1 + m)}{1 - (t/y^*)\,(1 + m)},$$

and

$$P = Y/y^*$$

$$= \frac{B\,(1 + m)/y^*}{1 - (t/y^*)\,(1 + m)}.$$

6. A census division is similar to a county for data collection purposes. Data published at the census division level are the best source of regional economic information for rural Alaska. Of the 23 Alaska census divisions, these four are the most heavily dependent on transfers. While similar areas may be found throughout the rest of Alaska, other census divisions include at least some communities which are less dependent on transfers.
7. There are no data which allow a precise determination of the transfer share of income from each source. Our assumptions for transfer allocations represent conservative estimates, based on years of experience in studying the economies of rural communities, as to the share of income supported directly from state or federal transfers. We developed our basic sector allocations in the same way, with the remaining income being allocated to the support sector.
8. No regional data exist for subsistence harvests, nor is it clear how subsistence harvests should be valued. In order not to ignore this important part of the regional economy in our calculations, we assumed a value for 1984 subsistence harvests of $2000 per capita. Wolfe (1983) reported harvests worth $12,595 per household (about $1900 per person) for the village of Kotlik, valued at store prices for the same quantities of food. We assumed the same real value of total subsistence harvests for 1969 (i.e., we assumed that total harvests did not increase between 1969 and 1984, although population increased by 30 percent). Assuming an increase in total subsistence, harvests would have resulted in a slightly higher estimate of basic sector per capita income in 1984.

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