EFFECTS OF TRANSFERS ON REMOTE REGIONAL ECONOMIES: THE TRANSFER ECONOMY IN RURAL ALASKA

by

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"Dawson existed as a metropolis for exactly twelve months: from July 1898 to July 1899. Before this period it had been nothing more than an overgrown frontier community of shacks and tents. Afterward it subsided slowly but inevitably into a ghost town. But for one glorious twelve months it was the 'San Francisco of the North' enjoying almost every amenity available to civilized cities the world over."

Pierre Berton
The Klondike Fever (p. 369)

"Our district's expenses may be better understood if we hypothetically superimpose the Aleutian region's operating conditions on the Anchorage School District. We have 100 students in five K-12 schools with a total of 14 teachers located throughout a district that is 1,300 mile long with the worst weather of any place in the world. The approximately 40,000 Anchorage students, under these conditions, would require the operation of 2,000 K-12 schools, with 5,600 teachers organized into 400 separate administrative units, each with its own superintendent, professional/administrative staff, and maintenance staff. All supplies would have to be ordered air freight from either Seattle or New York. And anyone travelling between schools would, during the course of the trip, have to fly to Chicago, stay over night, and then come back to incur the same costs we face in travel."

Letter to Anchorage Times from Clayton Brown, board member of Aleutian Region School District, Alaska
I. INTRODUCTION

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 has received extensive treatment in the literature. One effect which has been suggested is that transfer programs may keep people poor and dependent (Darity et al., 1987). 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 received in the form of public services or facilities. We suggest that the effects of transfers at the regional level may be similar to those found at the individual level.

Regional transfers within developed countries have expanded greatly during this century as a result of two broad factors. First, transfers have increased with the political and legal expansion of minimum economic "rights" guaranteed to individuals by government. Secondly, transfers have increased with the political distribution of resource rents captured by government.

Regional transfers have significant effects upon the economies of remote regions. Without transfers, the economies of remote regions depended on the local resource base. As illustrated by the story of the gold rush town of Dawson, when the resources disappeared, so did the community (Berton, 1958).

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, transfer economies tend to be self-perpetuating. They may 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 at very high per capita costs, while populations continue to grow. 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.
II. REMOTE REGIONS AND 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.\footnote{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.\footnote{2}

Unless outmigration occurs, remote regions with populations above a viable level require permanent transfers. We may refer to the economies of these regions as "transfer economies."
III. A MODEL OF THE TRANSFER ECONOMY

Regional transfers may influence not only the welfare of a region's population, but also the size of the population which the region can support. In this section, we present a model which illustrates how transfers may affect both population and per capita income.

Assume an economy in which there are three kinds of income: basic, support, and transfer. Basic income (B) is income earned in resource production, such as mining, fishing or trapping. We assume that the economy is remote: the scale of basic activity is fixed.

Transfer income (T) is provided by a central government outside the region. Transfer income may be either direct cash transfers to individuals or income earned in employment directly supported by transfers. Transfers are proportional to population by the per capita transfer rate (t):

\[ T = t \cdot P \]

Support income (S) is income generated by spending of local residents for goods and services such as locally-grown vegetables or haircuts. Support income is related to basic and transfer income through a multiplier (m):

\[ S = m \cdot (B + T) \]

Total income (Y) is given by

\[ Y = B + T + S \]

\[ = (B + T) \cdot (1 + m) \]

\[ = (B + t \cdot P) \cdot (1 + m) \]

If population is fixed, then transfers increase total and per capita income. However, if migration into or out of the region is sensitive to the level of per capita income, then transfers may also affect population. The total population which can be supported at any given level of per capita income \( y^* \) is given by:

\[ P = \frac{B \cdot (1 + m) / y^*}{1 - (t^* / y^*)(1 + m)} \]

where \( t^* \) is the level of per capita transfers received at per capita income \( y^* \). Without transfers, population would be simply:

\[ P = B \cdot (1 + m) / y^* \]
If transfers are added to the economy, the population which can be sustained at this per capita income level increases by a factor of

\[
\frac{1}{1 - (t^*/y^*)(1 + m)}
\]

This leads us to the first conclusion of our model:

Transfers create a "transfer multiplier" to the size of the population which can be supported by a region at a given per capita income. The strength of this transfer multiplier depends upon \((t^*/y^*)\), or the share of per capita transfer income in per capita income.

For example, if per capita transfers are four-fifths of per capita income, the transfer multiplier will be more than five. Thus, if per capita transfers are large compared to per capita income, a much larger population can be supported than could be supported by the basic sector alone.

The transfer multiplier is independent of whether transfers are provided as direct transfers to individuals or to support employment. Thus, a transfer economy may be a high employment economy. If transfers support employment, the economy receives the additional benefit of the services provided by this employment.

**Effects of Transfer Policies**

We may characterize the effects of transfer policies in terms of their effects on per capita income and population. We may illustrate these effects by graphing possible combinations of per capita income, per capita transfers, and population.

If we divide the expression for total income \((Y)\) by population \((P)\), we have:

\[
y = \frac{B}{P}(1 + m) + t(1 + m)
\]

For a given population level, the higher per capita transfers \((t)\), the higher will be per capita income \((y)\), as shown by the "per capita income function" in Figure 1. Similarly, for a given per capita income, the higher per capita transfers, the greater the population which can be supported. Put differently, a change in population causes the per capita income function to shift up or down, as shown in Figure 2.

**Fixed per capita transfers.** In Figure 3, without transfers, per capita income would be \(y_0\). If the central government institutes a policy of providing per capita transfers of \(t_1\), per capita income may rise to \(y_1\) if population remains unchanged. However, if
Figure 1

\[ Y = \frac{B}{p} (1+m) + t(1+m) \]

Figure 2

\[ p < p_0 \]
\[ p = p_0 \]
\[ p > p_0 \]

Figure 3

\[ y_0 \]
\[ y_1 \]
\[ p_0 \]
\[ p_1 \]

Figure 4

\[ p_0 \]
\[ p^*>p_0 \]
\[ p^{**}<p_1 \]
\[ p_1 \]

Figure 5

\[ y_0 \]
\[ y_1 \]
\[ y_2 \]
\[ p_0 \]
\[ p_1 \]
\[ p_2 \]

Figure 6

Transfer function

Figure 7

\[ p_0 \]
\[ p_4 \]
\[ p_1 \]

Figure 8

\[ p_0 \]
\[ p_5 > p_0 \]
immigration occurs in response to higher per capita income, the per capita income function will shift downwards. Over time, the effect of fixed per capita transfers will be either to increase per capita income to $y_1$, to increase population to $P_1$, or to increase both per capita income and population by lesser amounts. These possible outcomes are represented by the dark line in Figure 3. Thus the adjustment to increased transfers can occur either through an increase in income or an increase in population.

Which type of adjustment is dominant will depend upon the type of transfer and the level of per capita income. We would expect transfers which create jobs to have a greater migration effect than direct income transfers. We would also expect that migration would account for more of the adjustment at higher levels of per capita income, as per capita income becomes more competitive with that which can be earned in other regions.

There may be a "competitive per capita income" ($y^*$) above which all adjustment to increased transfers would be through in-migration of new residents. Similarly, there may be a "minimum per capita income" ($y^{**}$) needed to prevent out-migration by current residents. If so, the range of possible adjustments to an increase in transfers is illustrated by the shorter dark line in Figure 4. Population will increase to between ($P^{**}$) and ($P^*$). A minimum level of per capita transfers ($t^{**}$) is needed to prevent a decline in the regional population. However, per capita transfers greater than ($t^*$) will not result in higher per capita income, but rather higher population.

Per capita transfers based on costs. The central government may seek to treat different regions "fairly" by basing the level of per capita transfers on the cost of providing public services. There are several reasons for which the costs of providing public services may be higher in some regions. First, 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. Second, physical conditions such as climate may increase per capita costs of services such as snow-plowing. Third, a region may have special needs, such as bilingual education. The costs of providing education services in the Aleutian Region School District is a dramatic example of how all of these factors can combine to result in high per capita costs of providing public services (Brown, 1986).

As shown in Figure 5, at the higher level of transfers $t_2$, the high cost region can enjoy higher per capita income and/or a higher population than the low cost region, because it receives more transfers. For example, snow plowing income can be higher in a region which needs snow-plowing than in one which doesn't, if the central government pays for the plowing. Thus,

High costs of providing services may benefit a region if the services are funded by transfers.
The greater the costs of providing government services, and the more services which the central government is willing to support through transfers, the greater the level of employment which transfers can support. Thus,

If transfers are sufficient, it is possible for residents of a region without any economic base to be fully employed in providing government services for themselves.

Another rationale for higher per capita transfers to a region might be a higher "cost of living." In this case, the effect of higher transfers will depend on the extent to which the "cost of living" index reflects actual costs and purchasing patterns within the transfer region. If the cost of living index reflects national rather than regional consumption bundles, it may overstate the actual cost of living within the region. As a result, the increased transfers may result in a higher real per capita incomes or a higher population.

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. Higher transfers designed to compensate for higher food prices may instead result in a higher real per capita income or a higher population in the region.

Per capita transfers based on per capita income. The central government may provide a higher level of per capita transfers to "poor" places. This policy may be depicted by the "transfer function" in Figure 6. The effect is to dampen the extent to which transfers may increase per capita income and/or population. The lower the slope of the transfer function, or the more per capita transfers vary in response to per capita income, the greater will be this dampening effect. Thus,

Fixed per capita transfers will have a greater multiplier effect on a region's economy than transfers based on per capita income.

Cost constraints may cause the central government to provide lower levels of per capita transfers as population increases, thus shifting the transfer function to the left as shown in Figure 7. This will further dampen the extent to which transfers may increase per capita income and/or population.

Basic Sector Development in a Transfer Economy

As shown in Figure 8, the effect of basic sector development in a transfer economy is to shift the income function upwards. Over time, the economy can support a higher per capita income and/or a higher population level. Total transfers may increase or decrease, depending on the central government's transfer policies. Thus,

Basic sector development may cause an increase in total transfers, if it causes population to increase without a corresponding decline in per capita transfers.
III. 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. Above, we defined a remote region as one with limited potential for competitive, non-subsidized development. This definition characterizes much of rural Alaska. 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.

One such remote region is coastal western Alaska, which includes the four census divisions of Wade-Hampton, Bethel, Nome and Koyuk. As shown in Table 1, 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 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, 1982). Subsistence activities have other significant economic implications: they generate a need for cash to purchase equipment such as boats and snowmachines, while increasing the opportunity cost of wage employment. They are also part of a strong cultural tradition which limits the mobility of rural residents.

Besides subsistence, basic activities in coastal western Alaska are limited primarily to seasonal commercial fishing and trapping. Placer mining, tourism, and military sites 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.
Table 1: Summary Statistics for Four Rural Alaska Census Divisions

<table>
<thead>
<tr>
<th></th>
<th>Wade-Hampton</th>
<th>Bethel</th>
<th>Kobuk</th>
<th>Nome</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area (square miles)</td>
<td>17816</td>
<td>36104</td>
<td>31593</td>
<td>23871</td>
<td>109384</td>
</tr>
<tr>
<td>Ratio of area to area of Iowa</td>
<td>0.32</td>
<td>0.64</td>
<td>0.56</td>
<td>0.42</td>
<td>1.94</td>
</tr>
<tr>
<td>Population, 1984</td>
<td>4600</td>
<td>11300</td>
<td>5000</td>
<td>6700</td>
<td>27600</td>
</tr>
</tbody>
</table>

Number of communities by size:

<table>
<thead>
<tr>
<th>Size</th>
<th>Wade-Hampton</th>
<th>Bethel</th>
<th>Kobuk</th>
<th>Nome</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 1000</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>300 to 1000</td>
<td>7</td>
<td>8</td>
<td>3</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>&lt; 300</td>
<td>7</td>
<td>29</td>
<td>8</td>
<td>13</td>
<td>57</td>
</tr>
</tbody>
</table>

Percent Native

<table>
<thead>
<tr>
<th></th>
<th>Wade-Hampton</th>
<th>Bethel</th>
<th>Kobuk</th>
<th>Nome</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent Native</td>
<td>95</td>
<td>84</td>
<td>85</td>
<td>79</td>
<td>85</td>
</tr>
</tbody>
</table>

Percentage of families receiving public assistance

<table>
<thead>
<tr>
<th></th>
<th>Wade-Hampton</th>
<th>Bethel</th>
<th>Kobuk</th>
<th>Nome</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of families</td>
<td>40</td>
<td>24</td>
<td>28</td>
<td>23</td>
<td>27</td>
</tr>
</tbody>
</table>

Sources: U.S. Census, 1980; Alaska Department of Labor.
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 2. 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 2 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 represented 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.

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. As shown in Table 1, nearly 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 1970's, 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.
Table 2: Selected Direct Transfer Programs in Coastal Western Alaska, 1984

<table>
<thead>
<tr>
<th>Transfers Through Federal and State Funding of Local Services and Facilities</th>
<th>7100</th>
</tr>
</thead>
<tbody>
<tr>
<td>State employment</td>
<td>1200</td>
</tr>
<tr>
<td>State assistance to local governments</td>
<td>300</td>
</tr>
<tr>
<td>State assistance for education</td>
<td>2400</td>
</tr>
<tr>
<td>State social service grants</td>
<td>1900</td>
</tr>
<tr>
<td>State office leases</td>
<td>40</td>
</tr>
<tr>
<td>State and federal capital spending</td>
<td>600</td>
</tr>
<tr>
<td>Federal assistance to local governments</td>
<td>20</td>
</tr>
<tr>
<td>Federal employment</td>
<td>700</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transfer Payments to Individuals</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alaska Permanent Fund dividend program</td>
<td>300</td>
</tr>
<tr>
<td>Alaska longevity bonus program</td>
<td>100</td>
</tr>
<tr>
<td>Aid to families with dependent children</td>
<td>200</td>
</tr>
<tr>
<td>Supplemental security income payments</td>
<td>200</td>
</tr>
<tr>
<td>Food stamps</td>
<td>200</td>
</tr>
<tr>
<td>Other income maintenance programs</td>
<td>20</td>
</tr>
<tr>
<td>Unemployment insurance benefits</td>
<td>200</td>
</tr>
<tr>
<td>Retirement, disability and health insurance benefit payments</td>
<td>600</td>
</tr>
<tr>
<td>Veterans benefits</td>
<td>50</td>
</tr>
<tr>
<td>Other transfer payments</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Negative Transfers</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal income taxes</td>
<td>-1000</td>
</tr>
</tbody>
</table>

| Net Transfers | 8100 |


Note: Amounts over $100 are rounded to nearest $100. Amounts under $100 are rounded to nearest $10.
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 3 shows our estimates of per capita income by sector in coastal western Alaska. The "transfer" sector includes direct transfer payments or income earned in activities directly supported by transfers. The "support" sector includes income earned in activities supported by local spending. Other income is "basic."8

As shown in Table 3, transfers account for nearly one half of personal income in coastal western Alaska, and represent nearly two-thirds of the economic base of the region. The transfer multipliers for the four census divisions range between 2.7 and 3.2. Thus, transfers permit this region to support a population nearly three times as great as could be supported at the same per capita income level without transfers.

As shown in Table 4, real per capita transfers to the region more than tripled between 1969 and 1984, while per capita basic income declined slightly. As a result, the share of transfers in income increased from 28 percent to 46 percent.

Over this period, the total population of coastal western Alaska grew by 30 percent, and real per capita income increased by 89 percent. Per capita income also increased relative to that of urban areas in Alaska: between 1969 and 1984, per capita income as a share of per capita income in Anchorage increased from 57 percent to 68 percent.

It is difficult to specify whether the impacts of transfers to coastal western Alaska have been reflected primarily in higher per capita incomes or in higher population, since we do not know how per capita income and population might have changed in the absence of transfers. Comparisons with other areas of Alaska do not provide an answer to this question, because transfers have increased similarly throughout the state. However, it seems likely that both per capita income and population in this region are substantially larger than they would have been without the growth in transfers.
Table 3: Economic Structure of Four Rural Alaska Census Divisions, 1984

<table>
<thead>
<tr>
<th></th>
<th>Wade-Hampton</th>
<th>Bethel</th>
<th>Kobuk</th>
<th>Nome</th>
<th>Entire Region</th>
</tr>
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<tbody>
<tr>
<td><strong>PER CAPITA INCOME</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer</td>
<td>4905</td>
<td>5770</td>
<td>6184</td>
<td>6799</td>
<td>5951</td>
</tr>
<tr>
<td>Basic</td>
<td>2676</td>
<td>2959</td>
<td>4191</td>
<td>4571</td>
<td>3526</td>
</tr>
<tr>
<td>Support</td>
<td>1835</td>
<td>3343</td>
<td>3549</td>
<td>4953</td>
<td>3526</td>
</tr>
<tr>
<td>Total</td>
<td>9416</td>
<td>12072</td>
<td>13923</td>
<td>16323</td>
<td>12997</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th><strong>SHARE OF INCOME (Percent)</strong></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>Transfer</td>
<td>52</td>
<td>48</td>
<td>44</td>
<td>42</td>
<td>46</td>
</tr>
<tr>
<td>Basic</td>
<td>28</td>
<td>25</td>
<td>30</td>
<td>28</td>
<td>27</td>
</tr>
<tr>
<td>Support</td>
<td>19</td>
<td>28</td>
<td>25</td>
<td>30</td>
<td>27</td>
</tr>
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<table>
<thead>
<tr>
<th><strong>SHARE OF ECONOMIC BASE (Percent)</strong></th>
<th></th>
<th></th>
<th></th>
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<tbody>
<tr>
<td>Transfer</td>
<td>65</td>
<td>66</td>
<td>60</td>
<td>60</td>
<td>63</td>
</tr>
<tr>
<td>Basic</td>
<td>35</td>
<td>34</td>
<td>40</td>
<td>40</td>
<td>37</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>SHARE OF TRANSFERS (Percent)</strong></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Earnings</td>
<td>60</td>
<td>68</td>
<td>66</td>
<td>69</td>
<td>67</td>
</tr>
<tr>
<td>Other</td>
<td>40</td>
<td>32</td>
<td>34</td>
<td>31</td>
<td>33</td>
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</tbody>
</table>

| **SUPPORT MULTIPLIER**               | 0.33   | 0.50   | 0.42  | 0.53  | 0.47          |
| **TRANSFER MULTIPLIER**             | 3.2    | 3.5    | 2.7   | 2.8   | 3.1           |

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, assumed 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.
Table 4: Changes in Economic Structure of Four Rural Alaska Census Divisions, 1969 to 1984

<table>
<thead>
<tr>
<th></th>
<th>1969</th>
<th>1984</th>
<th>Ratio, 1984 to 1969</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>POPULATION</strong></td>
<td>21200</td>
<td>27600</td>
<td>1.30</td>
</tr>
<tr>
<td><strong>REAL PER CAPITA INCOME (a)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer</td>
<td>1966</td>
<td>5951</td>
<td>3.03</td>
</tr>
<tr>
<td>Basic</td>
<td>3636</td>
<td>3526</td>
<td>0.97</td>
</tr>
<tr>
<td>Support</td>
<td>1440</td>
<td>3520</td>
<td>2.44</td>
</tr>
<tr>
<td>Total</td>
<td>7041</td>
<td>12997</td>
<td>1.85</td>
</tr>
<tr>
<td><strong>PER CAPITA INCOME AS SHARE OF ANCHORAGE PER CAPITA INCOME (Percent)</strong>*</td>
<td>56</td>
<td>68</td>
<td>1.21</td>
</tr>
<tr>
<td><strong>SHARE OF INCOME (Percent)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer</td>
<td>28</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Basic</td>
<td>52</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Support</td>
<td>20</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td><strong>SHARE OF ECONOMIC BASE (Percent)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer</td>
<td>35</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>Basic</td>
<td>65</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td><strong>SHARE OF TRANSFERS (Percent)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earnings</td>
<td>64</td>
<td>67</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>36</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td><strong>SUPPORT MULTIPLIER</strong></td>
<td>0.48</td>
<td>0.47</td>
<td>0.98</td>
</tr>
<tr>
<td><strong>TRANSFER MULTIPLIER</strong></td>
<td>1.7</td>
<td>3.1</td>
<td>1.80</td>
</tr>
</tbody>
</table>

(a) 1969 figures adjusted by ratio of Anchorage CPI in 1984 to Anchorage CPI in 1969.

Source: Bureau of Economic Analysis. See Table 3 for notes on assumptions.
V. Transfer Economies and Public Policy

In this section, we first discuss how public policies influence the creation of transfer economies. We then address several public policy issues raised by transfer economies.

The Creation of Transfer Economies

There are two major ways in which a viable remote region may become a transfer economy. These include (1) population growth or expansion in the standard of living based on increased transfers rather than an increase in basic economic activity, or (2) contraction of the economic base with a corresponding increase in government transfers. In both cases, government policies undertaken for other purposes lead to the creation of nonviable transfer economies.

Rural Alaska experience illustrates both of these mechanisms for the creation of transfer economies. Under one mechanism, government policies attempt to increase the standard of living of a region. In Alaska, contact of Native peoples with the outside world has led to a dramatic increase in the desired material standard of living, out of all proportion to the ability of much of the region to support this standard of living. A variety of government programs have attempted to make up the difference, sometimes with the effect of further increasing dependency on transfers. Programs have encouraged and sometimes required settlement of migratory peoples as a condition for the receipt of transfers or services such as education or housing. Government programs such as provision of housing may increase cash dependency, as residents become dependent upon commercial fuels (Nechesky, 1980). It is through this mechanism that the transfer economy of coastal western Alaska has arisen.

Under the other mechanism, government policies attempt to mitigate the consequences of decline in the original economic base of a region. Rural Alaska offers abundant examples of past decline, such as abandoned mining towns, fish canneries and logging camps. Decline may occur for physical, economic or regulatory reasons. The resource may be physically eliminated: nonrenewable resources may be mined out, while renewable resources may be harvested beyond their ability to regenerate, or devastated through drought or disease. Economic factors, reflected in lower prices or higher costs, may lower the net value of products produced by a region. Regulatory factors may limit access to resources or impose additional costs.

If only market forces were at work, decline in the original economic base of a region would be accompanied by either outmigration or lower per capita incomes. However, outmigration is painful: while labor and capital flow into a region easily during periods of growth, adjustment during periods of decline is more difficult. People develop social and cultural ties to a region, as well as economic ties due to the ownership of fixed assets whose value depends upon the level of economic activity.
Government's response may be to attempt to reduce the pain of the adjustment to economic decline. Often this response involves the transfer of economic surplus between regions, through direct transfer payments to residents, government employment, and subsidies to local government, industry and other employers in the region (Jacobs, 1984). The net effect of such programs is to reduce the mobility of resources, to delay the adjustment to decline of the economic base, and to increase dependence upon transfers.

Public Policy Issues

Government's role in the creation and support of transfer economies raises several dilemmas for public policy. One set of issues is national in scope: What are the costs and benefits of regional transfers for the nation? On what basis should transfers be made between regions?

The benefits of transfers are that they increase the standard of living or reduce the pain of economic adjustments for their recipients. Transfers have dramatically improved the standard of living in rural Alaska. As we have seen, the growth of transfers led to nearly a doubling of real per capita incomes in western coastal Alaska between 1969 and 1984. Between 1970 and 1980, native per capita incomes for all of rural Alaska increased from 34 percent to 40 percent of urban income (U.S. Census, 1980). Accompanying this growth in income has been a dramatic expansion of public services and infrastructure.

A cost of regional transfers is that they avoid or delay adjustment to the economic factors which were originally responsible for the low standard of living or which made economic adjustments necessary. The increase in transfers to western coastal Alaska was accompanied by a 30 percent increase in population. Kruse and Foster (1986) found that the population of the smallest places in Alaska—those with populations of less than 500—experienced net in-migration between 1970 and 1980. This is a reversal of a historic trend: Alonso and Rust (1976) had projected the eventual disappearance of these places. However, it is these smallest places which are usually least economically viable and where the costs of providing public services are highest.

From a national perspective, regional transfers are inefficient. The most efficient use of public resources would be to focus on developing those regions where viable development is possible: where the economic base can expand to support a population at a competitive standard of living, without subsidies. Regional economic efficiency would require that those residents of non-viable regions who cannot be supported by the existing or potential economic economic base move to viable regions.
However, while not all places are viable, they all contain people who are attached to the place and do not wish to leave. Residents of non-viable regions are not concerned with global efficiency, but with their own welfare. They do not want to move to other places where development is viable. Instead, they want to remain in their regions, and they want their regions to prosper. As residents of non-viable regions are citizens and voters, they have a claim on a share of public resources. Implicitly and explicitly, residents of rural Alaska have argued that they have a right to economic prosperity and growth within their own regions.

Over time, however, guaranteeing the prosperity of a region becomes increasingly costly as population grows. Thus the fundamental issue for transfer policy at the national level is the extent to which the nation can guarantee to support both the standard of living and population growth within individual regions, regardless of the economic potential of these regions.

Another set of issues is regional in scope: what are the costs and benefits of transfers for the region? To what extent do transfers really contribute to regional welfare?

Above, we have discussed the benefits of transfers for a region. However, transfers may create a number of problems for regional economies. A first problem, which we have also discussed above, is that transfer economies tend to be self-perpetuating, requiring more transfers over time. Transfers postpone adjustments in population or the standard of living which would be necessary for a viable or self-supporting economy. Transfers can also lead to increased dependence in more subtle ways. For example, transfers provided in the form of capital projects may require increased future transfers to pay for the operations of new facilities.

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 wage rates above those which would prevail in the absence of transfers. This 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.

Other distortions to the nontransfer economy include the redirection of residents' energies away from economic development to political entrepreneurship in the pursuit of transfers. 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.
Another problem is that 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 key 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 transfer 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 decline 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.
Transfer Policies for Remote Regions

We have argued in this paper that transfer policies 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.

Ideally, regional transfer programs should be designed to minimize distortions such as impacts upon population or impacts on the nontransfer portion of the economy. Below, we suggest some principles for minimizing these distortions associated with regional transfers.

One principle is that where possible, transfers should be provided to individuals rather than to governments, with as few restrictions as possible on the use of the transfers. Put differently, the purpose of transfers should be to increase the welfare of individuals rather than places. Given the opportunity to decide for himself on the use of transfers, an individual is less likely to spend the funds on high-cost services within the region. For example, if support for rural education were provided through grants to individuals rather than to local school districts, these funds might be used to pay for higher quality boarding school education outside of the region rather than through small, high cost local schools (although this option would still be open to residents).

A second principle is that economic rights, which are increasingly the basis of individual and regional transfers, should be designed where possible in terms of rights to resources rather than rights to outcomes those resources are intended to provide. Using again the example of education, central governments might guarantee a certain level of educational funding for all students. This would tend to discourage settlement in regions where education is expensive to provide.

A third principle is that transfer payments should minimize distortions to local markets. Wages in transfer-supported employment should be based upon local workers' skills and local wage standards (including the net wages which could be earned in out-of-region employment) rather than national wage standards. Where transfers are to be based upon costs of living, the cost measures used should reflect local consumption patterns rather than national patterns. For example, if local residents drink powdered milk rather than fresh milk because fresh milk is extraordinarily expensive, cost standards should reflect the cost of powdered milk rather than that of fresh milk.
A final principle is that nontransfer policies should work to reduce dependency of remote region residents on transfers. One example is policies which encourage resource development (without becoming permanent transfer programs themselves). Another example is policies which increase mobility, such as improved transportation links or training programs, which may make it easier for residents of remote regions to increase their standard of living either by moving to other regions or by working in other regions.

These principles will not meet with universal acceptance. In part, this is because not all groups agree over the goals or implications of transfers. Not all groups agree 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.

The example of rural Alaska suggests that regions and individuals rarely refuse transfers. For transfer recipients, the benefits outweigh 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.

Thus, there are no easy solutions to the distortions 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. \[ Y = (B + t \cdot P) \cdot (1 + m) \]
   \[ = (B + t \cdot (Y/y*)) \cdot (1 + m) \]
   \[ = (B + Y \cdot (t/y*)) \cdot (1 + m) \]

Rearranging, we have:

\[ Y(1 - (t/y*)(1 + m)) = B \cdot (1 + m) \]

which gives:

\[ B \cdot (1 + m) \]
\[ Y = \frac{-------------------}{1 - (t/y*)(1 + m)} \]

and

\[ P = \frac{Y/y*}{B \cdot (1 + m)/y*} \]
\[ = \frac{-------------------}{1 - (t/y*)(1 + m)} \]

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).
References


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