Comparing the Impacts of Retiree versus Working-Age Families on a Small Rural Region: An Application of the Wisconsin Economic Impact Modeling System

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The Wisconsin Economic Impact Modeling System, a conjoined input-output/econometric model of Wisconsin counties, is used to simulate the economic and fiscal impact of two alternative residential development patterns. Under the first scenario, the impact of migrating retirees on a small tri-county region in northern Wisconsin is examined. Under the second scenario, the impact of the migration of younger families with children is examined. A comparison-contrast between the two scenarios demonstrates that the characteristics of the migrating household can have a significant impact on the nature of the impacts.

Patterns of growth and change across rural America are diverse and complex. Historically, rural areas have lost ground to their urban counterparts with respect to economic growth and development. The 1990s, much like the rural renaissance of the 1970s, however, have seen some amenity rich rural areas experience significant growth and development. Rural areas that are adjacent to metropolitan areas are experiencing renewed growth and development as urban labor markets expand geographically (Walzer and Deller 1996). Here younger families often look for a rural environment in which to raise children, but remain within commuting distance of employment opportunities and urban amenities offered in metropolitan areas. Rural amenity levels or quality of life often drive the spread effect of urban areas (Henry, Barkley and Bao 1997).

Areas with high natural amenity attributes are also experiencing higher than expected levels of economic growth and development (Marcouiller 1997; English and Marcouiller 1998; Nord and Cromartie 1997; Bao, Henry and Barkley 1996). Much of the growth here comes in the form of tourism/recreational developments and the selective migration of retirees. Often time rural areas with a high endowment of natural amenities become destination regions, areas of investment in recreational housing, and subsequently retirement migration (Marcouiller et. al. 1996). These retirement destination regions, as defined by the USDA ERS, are consistently among the fastest growing rural areas (Walzer and Deller 1996; Deller 1995).

While many rural areas are faced with economic stagnation and decline, amenity rich rural areas are faced with significant growth and development opportunities. These communities are in the favorable position to direct or influence their path of growth and development. Through effective planning and policy implementation, these high amenity rural areas can guide the growth process. If these rural communities are interested in attracting younger families with children, investments in public schools, youth programs, and day care facilities will make the community more appealing. Conversely, if the community is more interested in

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attracting retirees, investments in health care services and certain types of recreational activities, such as golf courses, will make the community a more competitive destination.

In this study we compare and contrast the economic and fiscal impact of the relocation of two distinct types of households into a small, high amenity area in northern Wisconsin. Using the Wisconsin Economic Impact Modeling System as a laboratory, 500 households that differ in age, size, income and spending patterns are introduced into a representative region. The simulated impacts on labor, retail and housing markets along with fiscal impacts facing local units of government can be compared and contrasted across the two types. While we do not hypothesize expected differences in magnitudes, we do expect the differences to be significant.

The paper is composed of four parts beyond the introduction. In the next section we introduce the Wisconsin Economic Impact Modeling System. We then lay out the scenarios as introduced to the simulation model. The simulation results are then reported and discussed and the paper closes with a short discussion of the analysis' policy implications.

The Wisconsin Economic Impact Modeling System

The Wisconsin Economic Impact Modeling System (WEIMS) is a county level conjoined input-output/econometric simulation model.[1] For conjoined models the input-output component is used to determine industry outputs and primary factor demands.[2] The econometric component estimates final demands, factor prices, and primary factor supplies. The aim is to retain the sectoral detail afforded by input-output techniques and close it with a system of endogenous econometric relationships. The advantage of this approach for assessing the socioeconomic impact of the in-migration scenarios is that it moves toward the "holistic" approach that is often lacking in this type of analysis.

The theoretical and empirical approaches to thinking about and modeling economic and fiscal impact assessment ranges from simplistic approaches such as the per capita multiplier method (e.g., Burchell and Listokin 1979) and export-base models (e.g., Richardson 1985) to analytical methods such as input-output and computable general equilibrium models (CGE) (e.g., Hewings and Jensen 1986; and Wagner, Deller and Alward 1992; Kraybill, Johnson and Orden 1992) to pure statistical or econometric modeling (e.g., Bolton 1985). The hybrid nature of conjoined models allows us to glean the best elements of the range of modeling approaches. First, hybrid models allow for the sectoral detail of an input-output model that is lost to econometric models. Second, the econometric specification allows for more detailed introduction and analysis of key policy variables that are of interest to local decision makers. Third, the "full employment" assumptions of input-output and CGE models can be relaxed, thus making the modeling effort more reasonable. Fourth, the complex spatial dimensions of regional interactions can be implicitly and explicitly captured. Finally, by using a more flexible econometric format allows for a better representation of how economic agents interact.[3]

While conjoined models, such as the WEIMS, represent an improvement over standard socioeconomic impact modeling approaches, they do have their limitations. First, these models tend to be demand driven and incorporating supply responses can be cumbersome. Second, changes in relative prices must be explicitly built into the modeling framework. But given the nature of the small, rural study area, this latter limitation is of minimal concern.[4] Third, the model relies on marginal analysis, and can not explicitly address structural change. Thus, WEIMS is unable to examine notions of con-

[1] Our model closely resembles a plethora of regional models constructed for policy simulations (e.g., Kort and Cartwright (1981) for U.S. states; Conway (1990) for Washington State; Coomes, Olson and Glennon (1991) for the Louisville SMSA; Treyz, Rickman and Shao (1992) for user-defined regions; and Rey (1997) for San Diego).

[2] The input-output component of the model is derived from Micro-IMPLAN. Minnesota Implan Group, Stillwater, MN.

[3] Beaumont (1990) suggests integrated models fail to accurately portray regional economies because their two main components—I-O and econometric models—are demand-driven; integrating the two does not incorporate the supply-side. He suggests instead that researchers should devote their efforts to CGE models. This seems a rather extreme reaction. While fully integrating the supply-side is desirable, it is not for small economies that have little influence on aggregate market behavior.

In practice, the distinction between integrated and CGE models is becoming increasingly blurred. While starting on separate paths, econometric and equilibrium modeling have slowly converged over time. For example, the conjoined INFORUM model (Almon 1991) incorporates price responses into product and factor demands. Essentially, the main (though consequential) difference between the two approaches is that CGE models assume perfect market clearing, while integrated models allow for disequilibrium, especially in the labor market. Though usually constrained to some long-term equilibrium relationship (e.g., REMI), integrated models emphasize tracking short-term disequilibrium adjustments over time (West 1995).

[4] Given the relative size of the study area, described later in the paper, both theoretical and empirical considerations suggest that the region is a price-taker in the spatial sense. Small, marginal changes, which these models capture best, are not sufficient to affect local prices in any meaningful way.

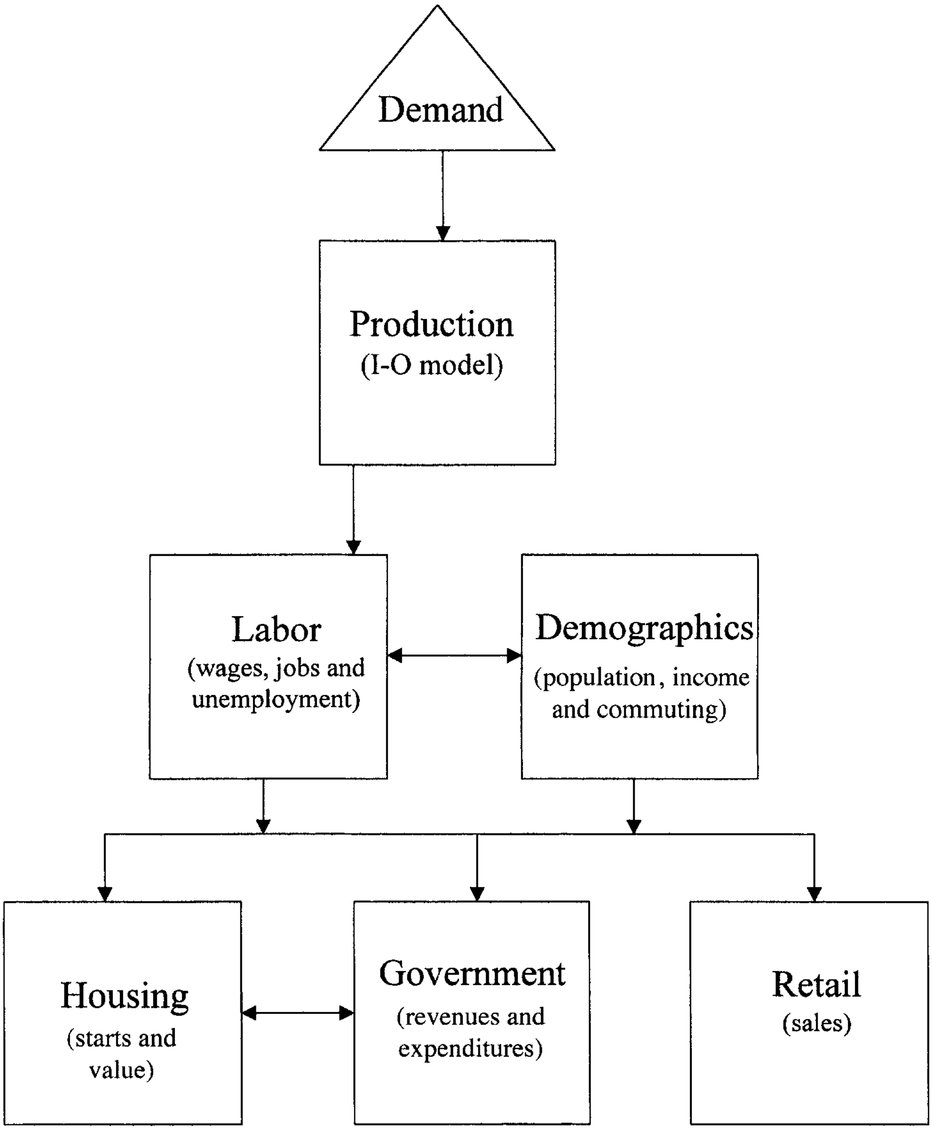

Figure 1. The Wisconsin Economic Impact Modeling System

gestion as they apply to existing local capacity to accommodate change. Finally, while economic theory provides significant insight into how regional economies are structured and function, the degree of modeler discretion can be significant. Therefore, there is much uncertainty in the level of modeling error. The theory of regional economic structure is far from complete and attempts to empirically represent that structure will have elements of error and uncertainty.

A graphical overview of the Wisconsin county model is presented in figure 1. The major modules of the model are:

1. ***Production.*** This module is used to determine regional output in the export production sectors and in the local and mixed industries (IMPLAN-based input-output model).
2. ***Labor.*** This module determines employment by sector, wages, regional unemployment, commuting, labor force and population.
3. ***Demographics.*** In this module, local income and income distribution are examined.
4. ***Housing.*** In this module we examine new housing construction in the region, as determined by changes in local population and income.
5. ***Local government.*** This module provides understanding into local government expendi-

tures and revenues. The political choice processes that determine local expenditures via implementation of the median voter model.

6. ***Local retail sales.*** This module examines spatial retail markets.

All but the production module consist of stochastic econometric equations. To capture interrelationships, the modules are linked by one or more endogenous variables. These modules are used to obtain information on a number of variables of interest to local policy makers and development practitioners. Once the individual modules are econometrically estimated, they are integrated to complete the WEIMS model. When investigating policy scenarios, the model is calibrated by adjusting the intercept of individual equations so as to reproduce the baseline situation. While this adjustment can be substantial in some instances, the individual equations do give insight into the direction and magnitude of marginal changes in both endogenous and exogenous variables.[5]

The interaction of the assorted modules is perhaps best understood by examining the model in the context of traditional simulation analysis. Specifically, the model used here is similar to other regional models in that simulations, or impacts, can be broken-down in detail so as to consider initial, direct, indirect and induced effects. These different effects are emulated in the individual modules of the model.

The *initial* impact can be thought of as an injection (or loss) of autonomous expenditures into the economy. The model recognizes two sources of county level economic demand, external (primarily export) and local. Referring to figure 1, changes in the local economy are driven principally by (exogenous) changes in export production, and in this sense the model can be thought of as following a standard "export-base" approach. As shown here, shifts in the demand for locally produced goods enter the production module either via changes in local demand shocks or a change in one of the local policy levers.

Direct and indirect effects are changes in industry output as businesses try to meet the changing input needs of the sector immediately affected by the initial impact. The direct and indirect effects capture linkages between local producers and are the essence of the production module. In many instances this module serves as the core of the model.

Not only do local industries buy and sell among themselves, but they also buy labor from households. Thus, changes in industry output have implications for local labor demand. For example, in instances where output increases, there may be an increase in the demand for local labor. As new economic opportunities arise, local population may increase. More people having higher incomes may then increase purchase of retail goods, housing, and public goods and services. These types of local demand change are referred to as *induced effects.* Tracing these impacts through the local economy further emphasizes the notion that the economy is an integrated system, characterized by a number of important local linkages.

For policy makers contemplating a particular economic event, the relevant question is often: "What will our economy look like with this particular event and how does that compare to the status quo?" Accordingly, impact analysis can be thought of as "with and without" analysis. In this framework one can examine the potential impacts of a policy by comparing predictions of how the economy will evolve under various scenarios.

An important aspect of good impact analysis is a reasonable and accurate baseline against which to compare the scenario. This involves describing the baseline equilibrium conditions (without) if local actors do not substantially alter their behavior. To determine the economic impact the model is "shocked," either via an exogenous change in final demand or the adjustment of some (exogenous) policy handle (here we use new households). The model is then re-estimated (i.e., simulated) using the new values of the relevant variables that are generated by the shock (with). The difference between the baseline and the simulation result is the local economic impact. By formulating the model this way, an important aspect of impact analysis is how the economic "event" is described to the model. A properly specified scenario should introduce only the *direct* effects of the economic event in question. The model then uses these direct effects to determine indirect and induced effects. Shields (1998) provides a complete description of the model.

Scenario Development

To assess the economic and fiscal impacts of alternative settlement patterns, two separate patterns are constructed and simulated through the Wisconsin System. Each simulation assumes that 500 households relocate into a rural region in north-

[5] A more complete description of the WEIMS model is available from the author, or at the following web address www.aers.psu.edu/d/fac/shields.htm.

Table 1.1. Household Expenditure Patterns

BLS Category	IMPLAN#	Age 65+	Husband and Wife with Children
Shelter maintenance	55	$916	$842
Telephone	441	$516	$845
Electricity	443	$801	$1,128
Natural gas	444	$284	$328
Water and other public services	445	$251	$351
Food at home	450	$2,367	$6,367
Vehicle purchases—gasoline and oil	451	$1,768	$5,638
Apparel and services	452	$875	$2,477
Household furnishings/equipment	453	$1,051	$1,908
Food away from home	454	$1,021	$2,327
Drugs and medical supplies	455	$627	$366
Miscellaneous retail	455	$2,003	$4,376
Shelter (owner dwelling/rent)	456	$509	$3,857
Health insurance	459	$1,541	$959
Vehicle insurance	459	$532	$1,001
Rented dwellings	462	$933	$1,377
Other lodging	463	$335	$524
Maintenance and repair	479	$473	$890
Medical services	490	$480	$777
Cash contributions	502	$1,099	$1,032
Property taxes	522	$972	$1,262
Total		$19,354	$38,632

central Wisconsin.[6] As such, the scenarios take the form of exogenous in-migration of two different household types. The household types are: 1) households age 65 and over and 2) households under age 65. Because we are more interested in the local *consequences* of various migration patterns, rather than its causes (e.g., job creation, amenities), we can consider the new migrants as "manna from heaven."[7] From a modeling perspective this comparison is akin to examining the difference between the impact of attracting retirees and more traditional younger families.

Because the WEIMS has an input-output model at its core, the two scenarios are best described in terms of the changes in final demand that different households types present to the local economy. To do this we turn to the 1995 Bureau of Labor Statistics Consumer Expenditure Survey (BLS-CES). Previous work with these data show that there are significant differences in spending habits between household types (Rubin and Nieswiadomy 1994) and these differences can be used to assess differences in economic and fiscal impacts (Sastry 1992). When initiating our simulations using these expenditure patterns, we adjust for local versus extra local spending according to standard IMPLAN procedures.

The expenditure patterns of a representative household from each of the two household types are presented in table 1.1 while the economic characteristics are summarized in table 1.2. Of particular interest for this comparison is the difference in expenditures between the two groups. The typical retired household in the BLS survey spends $19,354 annually while the more traditional household of a husband and wife with children spend $38,632 (table 1.1). Note that the BLS-CES categories are aggregated to coincide with IMPLAN, the source of the WEIMS core input-output. Given the reported categories of expenditures and industries (commodities) some BLS-CES data are lost to IMPLAN, hence the total aggregate expenditure levels in table 1.1 and 1.2 differ by the lost BLS-CES data. The category that accounts for the largest discrepancy is "entertainment."

While the younger family will spend a greater overall amount in the local economy than a retired household due to income levels and household size, there exists significant variation in patterns

[6] The region selected is the three county area of Oneida-Forest-Langlade in north central Wisconsin. Total population of the three county area is 63,000 with a per capita income of $16,551 (see tables 2a-2d for descriptive statistics). This is an amenity rich area that is experiencing significant in-migration of retirees to seasonal lake front property.

[7] The intent here is to examine differences in impacts levels across different household types. The key in such an experimental framework is to treat the two household types consistently, yet capture the inherent differences across household types. The resulting population changes are 3.1% and 1.3% across the two household types, which is in the same magnitude of order of current annual population growth rates for the study area.

Table 1.2. Household Characteristics

BLS Category	Age 65+	Husband and Wife with Children
Income before taxes	$22,148	$53,694
Income after taxes	$21,068	$49,058
Average number of persons in consumer unit	1.7	3.9
Average number of earners in consumer unit	0.4	2.1
Average number of vehicles in consumer unit	1.4	2.7
Average annual expenditure (total)	$22,249	$44,987
Percent homeowner	79	77
Percent of homeowners with mortgage	14	61
Percent renters	21	23
Estimated market value of owner home	$81,160	$97,530
Estimated market rent of owner home	$530	$661

across BLS commodity groups. For example, although younger families are larger, retired households spend more on drugs and medical supplies ($627 vs $366) and health insurance ($1,541 vs $959), but older households also give slightly larger cash contributions to charities ($1,099 vs $1,032). In some categories, however, the level of expenditures for the younger family vastly outpaces those of the older household. For example, younger households spend significantly more on vehicles ($5,638) than older households ($1,768) as well as more on food for consumption at home ($6,367 vs $2,367).

These households also differ by factors other than expenditure patterns. For example, a typical retired household has 1.7 persons while a younger household has 3.9 persons (table 1.2). In addition, older households have, on average, only 0.4 earners, while younger households have 2.1 earners. Contrary to popular perceptions, not all elderly retire from the labor force: many elderly work part-time for either personal or financial reasons. The fact that the typical household in our scenarios has a person in the labor force part-time is consistent with the literature on aging and work. Haas and Serow (1997) found that among in-migrant retirees in western North Carolina, 30% of the households had someone in the labor force. Many of the elderly work part-time because they want to continue some work, or they work part-time to avoid having Social Security benefits reduced (Kahne 1985). While the motivation to return to, or remain in, the labor force may vary across the two groups studied here, the scenario with some level of employment in elderly households is consistent with the literature.

These are important aspects when describing scenarios to WEIMS. For the simulations reported here differences in household size means initial population changes of 850 versus 1,950, which has significant implications on the simulated impacts. Differences in the number of earners also have implications because it requires the scenario construction to reflect where these persons will be employed. Given the descriptive information reported in table 1.2, 500 additional retired households suggest that there will be 200 (=500*0.4) persons in the work force, compared with 1,050 (=500*2.1) persons in the younger households. For simulation purposes we assume that these "new" entrants to the local labor force are evenly distributed across the Trade and Service Sectors. The predominate source of part- and full-time employment in rural areas are increasingly in these sectors. In addition, the impacts of household consumption on local job creation are also predominately in these sectors. For simplicity, we assume that all of the older workers will work in the local community (i.e., no commuting), but for the younger families we assume that 20% out-commute, matching the region's current commuting pattern.

While information from the BLS Consumer Expenditure Survey provides us with a detailed description of the economic characteristics of the different households, we do not have data on specific taste and preference characteristics. For example, the older households may prefer to devote greater resources to hospitals or police protection than the younger households. Hence, when interpreting the results it is important to keep in mind that the simulated results are based on IO computations and econometric estimations. Subtle, but important, differences in political philosophies that may exist between household groups are lost.

Empirical Results

The simulated long-run (e.g., equilibrium) impacts of 500 new households of each of the two household types are reported in tables 2.1 through 2.5e. While the WEIMS estimates nearly 70 economic and fiscal indicators, three key variables—employment, population and income—drive a significant part of the housing, retail and fiscal modules and hence will be discussed before the results of the other modules are presented.

Table 2.1. Employment and Wage Impacts

		Age 65+		Husband and Wife with Children	
	Baseline	Impact	Percent	Impact	Percent
EMPLOYMENT					
Agriculture	1,604	0	0.01%	0	0.02%
Mining	121	0	0.01%	0	0.02%
Construction	1,806	3	0.18%	4	0.20%
Manufacturing	5,289	0	0.01%	1	0.01%
TCPU	1,581	3	0.17%	5	0.29%
Trade	8,343	145	1.74%	522	6.26%
FIRE	1,343	5	0.34%	14	1.03%
Services	8,966	114	1.28%	443	4.94%
Government	4,259	17	0.39%	22	0.52%
TOTAL	33,312	287	0.86%	1,010	3.03%
WAGES					
Total earnings	$654,971,430	$4,824,526	0.74%	$16,601,716	2.53%
Earnings per worker	$19,662	–$24	–0.12%	–$95	–0.48%

Overall Impacts

The simulated results for the employment and wage components of the model are provided in table 2.1. For the younger household scenario the BLS-CES data suggest that 500 new households will create 840 initial jobs (recall 20% out-commuting rate) and a total of 1,010 jobs for an implicit employment multiplier effect of 1.25; this averages to 0.52 jobs for every person in a young household. This compares with 200 initial jobs for the older household type, with a total employment impact of 287 jobs for an implicit multiplier effect of 1.43; this averages to 0.34 jobs for every person an older household. Clearly the larger employment impact for the younger households comes from a) more persons in the younger household in the work force and b) higher levels of expenditures in the local economy.

Impacts on income are measured two separate ways: earnings and per capita income. As reported in table 2.1, earnings per worker decrease slightly from the baseline under both the younger (–$95 or –0.48%) and elderly (–$24 or –0.12%) scenarios. This may be attributed to both an increase in labor supply and the fact that a majority of the jobs have been created in relatively low paying professions. Still, total earnings increase by 0.74%, or $4.8 million, under the older household scenario and 2.53% or $16.6 million, under the younger household scenario. Per capita income also declines (table 2.2). Under the older household scenario, per capita income declines by $45 or –0.27 percent and under the younger scenario by $83 or –0.50%. These latter declines are due to the lower than average earnings outlined above coupled with the increase in the number of persons relative to the number of earners.

Table 2.2. Labor Market and Housing Impacts

		Age 65+		Husband and Wife with Children	
	Baseline	Impact	Percent	Impact	Percent
LABOR SUPPLY					
Unemployment rate	5.78	–0.13	–2.19%	–0.45	–7.72%
Number of unemployed	1,837	–40	–2.19%	–142	–7.72%
Total in-commuters	2,441	–2	–0.10%	–7	–0.30%
Total out-commuters	3,392	0	0.83%	0	0.00%
Jobs to in-migrants		45		21	
Population	63,210	960	1.52%	2,166	3.43%
Number of new students	11,708	1	0.00%	379.00	3.24%
Local labor force	31,780	264	0.83%	964.68	3.04%
Per Capita Income	$16,551	($45)	–0.27%	($83)	–0.50%
HOUSING					
Housing starts	564	195	34.49%	209	37.05%

A third important variable feeding into the fiscal, retail and housing modules is population. While the initial effect is determined by the scenario, in-migration dictates the bulk of the population impact; the ripple or multiplier effect in employment, earnings, changes in relative housing prices, and unemployment will influence population changes through indirect migration. The estimated population impacts are reported in table 2.2. For younger households, the initial effect is 1,950 (=500*3.9) additional persons and an indirect effect of 216 persons for a total population change of 2,166 persons (3.43% increase). For the older households, the initial effect is 850 (=500*1.7) additional persons and an indirect effect of an additional 110 persons for a total population change of 960 persons (1.52% increase). Note that while the individual income measures (per worker earnings and per capita income) may fluctuate downward, the increase in population dictates that total earnings and income increase (tables 2.1 and 2.1). Not surprisingly, the impact on the number of new potential students in the region varies significantly across the two scenarios (table 2.2). For the retired household scenario, only one additional student can be expected, but for the younger household scenario, the student population is expected to increase by 397 (3.24% increase).

Labor Market Impacts

Given the model's construction, the employment created through the multiplier effect can be filled through several sources including the unemployed, additional inmigrants, and changes in commuting patterns. For the older household scenario, 40 persons from the ranks of the unemployed fill the indirect and induced generated jobs, for a decrease in the unemployment rate of 2.19% (table 2b). For the younger household scenario, 142 of the 170 jobs created through the multiplier effect are filled by the unemployed. Under this latter scenario, the unemployment rate decreases by 7.72% from a rate of 5.78 to 5.33%. The number of in-commuters is estimated to actually decline slightly under both scenarios. This is due primarily to the expected slight lowering of the average earnings per worker, which is the result of scenario construction. The number of out-commuters does not change as a result of the additional jobs created through the multiplier effect. The balance of the multiplier created jobs under both scenarios comes from additional in-migrants into the area. For the older household scenario, 45 jobs are taken by inmigrants, while 21 are taken by in-migrants under the younger household scenario. The changes in poverty rates are estimated to be trivial, and are not reported.

Housing Impacts

The Wisconsin Model also provides insight into the impact of these two types of households on local housing. Under both scenarios the demand placed on the local housing market results in similar increases in construction (table 2.2). The measure aims at capturing the change in the equilibrium flow of new residents into the market through construction. It is important to note that this measure does not solely capture the one time shock of new construction from the initial in-migration of the 500 households. Instead, it gives expected changes in the annual flow of new housing starts. Under the retired household scenario the equilibrium number of new houses being built annually increases by 195. Under the younger household scenario, the increase in annual equilibrium housing is 209 new houses. In other words, the younger household scenario increases the equilibrium flow of new housing more than the retiree scenario.

Fiscal Impacts

The fiscal impacts of the scenarios presented in this study are reported in tables 2.3 and 2.4. Aggregate per capita non-education expenditures *decrease* by $1.75 (or 0.22%) for the older household scenario and they decrease more, $5.19 (or 0.64%), for the younger household scenario. Econometric results suggest that 1) economies of scale in public service production are present, and 2) public goods (as measured by expenditures) are normal goods and significant differences in income levels will have significant impacts on service levels. The decline in per capita expenditures for both scenarios partially explains the simulation result. But, simultaneously, population in both scenarios is growing faster than expenditure levels, thus driving the per capita estimate downward. Under the older household scenario, per capita expenditures do not decline as much because population did not change as much. It is important to keep in mind that total expenditures, as opposed to per capita, increase under both scenarios; 1.30% for the older household scenario and 2.77% for the younger household scenario.

Under both scenarios per capita public expenditures increase for waste and amenity services and for general government operations (i.e., administration). Per capita health expenditures decrease 0.56% in the older household scenario compared with a 1.89% decline in the younger household

Table 2.3. Fiscal Impacts-Expenditures

		Age 65+		Husband and Wife with Children	
	Baseline	Impact	Percent	Impact	Percent
Per Capita Government Expenditures					
Health	$206	($1.16)	−0.56%	($3.88)	−1.89%
Government	$149	$0.50	0.34%	$1.94	1.30%
Safety	$190	($0.85)	−0.45%	($2.69)	−1.42%
Roads	$167	($0.54)	−0.32%	($0.78)	−0.46%
Waste	$40	$0.26	0.64%	$0.20	0.50%
Amenity	$62	$0.04	0.07%	$0.01	0.02%
Total Per Capita Government	$814	($1.75)	−0.22%	($5.19)	−0.64%
Total Government Expenditures					
Health	$12,991,000	$123,067	0.95%	$191,650	1.48%
Government	$9,409,000	$175,035	1.86%	$449,346	4.78%
Safety	$12,025,000	$127,947	1.06%	$235,969	1.96%
Roads	$10,564,000	$125,843	1.19%	$311,264	2.95%
Waste	$2,545,000	$55,130	2.17%	$100,279	3.94%
Amenity	$3,897,000	$62,044	1.59%	$134,320	3.45%
Total Government Expenditures	$51,431,000	$669,064	1.30%	$1,422,828	2.77%
Per Capita Expenditures (Education)	$1,196	($17.41)	−1.46%	$31.11	2.60%
Total Expenditures (Education)	$75,599,192	$731,090	0.97%	$1,557,179	2.06%

scenario. This latter result is due primarily to the greater decrease in the unemployment rate for the younger households. Per capita safety expenditures also decrease more in the older household scenario, 0.32% compared with the younger household scenario, 0.46%. Per capita road expenditures decrease similarly for both scenarios. In addition to reflecting differences in tastes and preferences for public services, these results also hint to possible costs savings through economies of scale in the production process.

Again, however, total expenditures for all categories increase. For the older household scenario, total non-education expenditures within the three county region of analysis increase by $669,064 (1.30%); while for the younger household scenario the increase is significantly more, $1,422,828 (2.77%). In no category did aggregate expenditures decline.

There are differences in demand for and support of public education across the two age groups examined here. For the older household scenario, per student expenditures on public education decrease by $17.41 (1.46%), but increase in total by about $731,000 (0.97%). For the younger household scenario, per student expenditures increase by $31.11 (2.60%) and aggregate education expenditures increase significantly more, about $1.5 million (2.06%). Clearly, the difference in education expenditures hinges on rates of change in population and number of students across the two household types. Older households tend not to increase demand for public education services (i.e., no school-aged children), but they do expand the property tax base (e.g., housing) which supports public education.

In-migration also affects the ability of local governments to generate revenues (table 2.4). Both

Table 2.4. Fiscal Impacts—Revenues

		Age 65+		Husband and Wife with Children	
	Baseline	Impact	Percent	Impact	Percent
Per Capita Government Revenues					
Intergovernmental	$435	($1.02)	−0.23%	($3.02)	−0.70%
Property Tax	$1,092	$0.03	0.00%	$0.10	0.01%
Total Per Capita Revenues	$1,527	($0.99)	−0.06%	($2.92)	−0.19%
Total Government Revenues					
Intergovernmental	$27,496,350	$352,320	1.28%	$744,433	2.71%
Property Tax	$69,025,320	$1,050,857	1.52%	$2,371,806	3.44%
Total Government Revenues	$96,521,670	$1,403,177	1.45%	$3,116,240	3.23%

scenarios show a small increase in property taxes per capita ($0.03 and $0.10, respectively). This relatively small change in per capita property tax revenues reflects the mixed result of the original in-migration on the value of housing flows and stocks. Regardless, the aggregate amount of property tax collected for municipal and county governments increases by just over $1 million for the older scenario and by more than $2.3 million for the younger scenario.

In Wisconsin, state aids are a significant portion of local revenues and simulated impacts of economic changes on aid flowing to local governments must reflect the unique aspects of the formulas. For the older household scenario, total intergovernmental revenues per capita decline ($1.02 or 0.23%), but increase in aggregate by about $352,000 (1.28%). In the younger household scenario, total intergovernmental revenues per capita decrease to a greater extent ($3.02 or 0.70%) and increase more in aggregate ($744,000 or 2.71%). The difference in per capita intergovernmental aid impacts rests on the uniqueness of the Wisconsin formulas: as local governments increase expenditures and corresponding property tax rates, the aid formula increases the flow of dollars to place downward pressure on property taxes. In other words, the aid formulas are set up to "reward" those local governments who place higher values on local public services (i.e., spend more) and are willing to tax themselves to pay for that higher level of service (i.e., higher per capita property taxes).

It is important to note that not all expenditure and revenue categories are included in the analysis. On the expenditure side, capital improvement and the small "miscellaneous" categories are excluded; and on the revenue side fees, charges and other "miscellaneous" sources are not considered. For most small rural communities, however, these categories tend to be small and should not play a significant role in the final analysis. Also the financing of local schools in Wisconsin is undergoing significant revisions, hence it is not explicitly modeled here.

Another dimension that is of utmost importance is that WEIMS does *not* address the issue of capacity to accept growth. The decline in per capita levels of expenditures can be partially explained by the notion of economies of scale in service delivery. In other words, a given level of protective services can be spread out over a larger population. For example, a fire department might be able to service ten additional households with no meaningful increase in costs. A sewer treatment plant may be operating at 80% capacity and the addition of ten new households to the system is easily handled. The fixed costs of operating the plant can be spread over more households (i.e., a decline in per capita levels). But the addition of an eleventh house, however, may exceed the capacity of the plant and expensive new investments in the plant's capacity must be undertaken. More directly, for the scenarios presented, the capacity of the local school systems to accept the growth induced by older households moving into the region is sufficient: the number of new students is expected to be low. But, under the younger household scenario, the addition of an estimated 379 new students *may* result in the need for an expansion of local schools. Recognizing that WEIMS does *not* address this vitally important issue, users of the model must interpret the results in the context of their known local economy. One approach would invite local government and school district officials to participate in discussions regarding the capacity of existing local infrastructure to accept growth.

Retail Markets

Finally, WEIMS is used to estimate the (induced) effects of the different in-migration scenarios on local retail markets (table 2.5). Per capita total retail expenditures decline under both scenarios examined. For older households the decline is $18.54 (0.22% and $40.67 (0.47) for the younger household scenario. The three primary driving forces for differences between the two scenarios are levels of out-commuting (a form of leakage), absolute changes in population levels and initial changes in expenditure patterns. Expenditure categories that experience the largest decrease in per capita expenditures include food stores, miscellaneous retail stores, and gasoline and service stations. Store types that experience increases in per capita expenditures across both scenarios include apparel, drug stores and general merchandise stores.

Retailers, however, are probably more interested in the effects of the two migration patterns on total sales than they are in per capita sales. While there is a general decline in per capita expenditures in both scenarios, total retail sales increased by $7 million in the older household scenario and by $16 million in the younger household scenario. Every category is expected to report higher overall sales, and total sales for the younger scenario is consistently more than double that of the older household scenario.

Conclusions

High amenity rural areas are experiencing a resurgence in population growth. Retirees are seeking

Table 2.5. Retail Impacts

		Age 65+		Husband and Wife with Children	
	baseline	impact	percent	impact	percent
Per Capita Retail Sales					
Furniture	$228.41	($0.39)	–0.17%	($1.26)	–0.55%
Automobiles	$1,950.33	($2.56)	–0.13%	$0.69	0.04%
Building materials	$499.73	($0.08)	–0.02%	$0.17	0.03%
Apparel	$296.90	$0.80	0.27%	$1.90	0.64%
Drug stores	$213.32	$0.24	0.11%	$1.16	0.54%
Food stores	$1,589.70	($6.36)	–0.40%	($18.26)	–1.15%
General	$1,053.83	$1.66	0.16%	$7.44	0.71%
Eating and drinking	$853.10	($1.82)	–0.21%	($4.88)	–0.57%
Miscellaneous	$1,164.20	($8.48)	–0.73%	($22.43)	–1.93%
Gasoline	$770.32	($1.55)	–0.20%	($5.20)	–0.68%
Total Per Capita Retail Sales	$8,619.83	($18.54)	–0.22%	($40.67)	–0.47%
Total Retail Sales					
Furniture	$14,437,945	$194,120	1.34%	$412,283	2.86%
Automobiles	$123,280,613	$1,708,683	1.39%	$4,269,337	3.46%
Building materials	$31,587,661	$474,943	1.50%	$1,093,425	3.46%
Apparel	$18,766,967	$336,622	1.79%	$766,955	4.09%
Drug stores	$13,483,658	$220,568	1.64%	$537,708	3.99%
Food stores	$100,484,868	$1,118,364	1.11%	$2,249,103	2.24%
General	$66,612,533	$1,118,390	1.68%	$2,768,850	4.16%
Eating and drinking	$53,924,431	$702,414	1.30%	$1,528,439	2.83%
Miscellaneous	$73,588,949	$574,237	0.78%	$1,055,274	1.43%
Gas	$48,692,119	$640,426	1.32%	$1,328,389	2.73%
Total Retail Sales	$544,859,743	$7,088,765	1.30%	$16,009,763	2.94%

rural areas that are appealing relocation destinations. Younger families, seeking a rural lifestyle, are increasingly willing to relocate, perhaps commuting longer distances, to experience that lifestyle. Communities that are endowed with high levels of natural amenities find themselves in the enviable position of planning for and promoting different types of in-migration patterns. The question that is addressed in this analysis is: "What are the different levels of economic impacts of pursuing these two very different types of households?"

Using the Wisconsin Economic Impact Modeling System, the hypothetical in-migration of 500 older households into an amenity rich, rural region in northern Wisconsin is compared and contrasted to the in-migration of 500 younger households. Using data from the BLS Consumer Expenditure Survey, the two scenarios are outlined and simulated through the conjoined input-output/econometric WEIMS. Simulation results point to numerous commonalties across the two scenarios, such as decreases in per capita government expenditures and retail sales, as well as differences, such as the absolute levels of impacts.

While the results presented in this paper are suggestive and sensitive to the way in which the scenario is presented to the modeling system, several insights have been gained. For example, because most of the local purchases made by the new in-migrants are for retail and service goods—industries that have limited local inter-industry linkages—the in-migration does not have a large employment multiplier effect. The consequence is that nearly all indirect and induced employment growth occurs in the service and retail sectors, industries that typically pay below average wages. The simulation result that few "good" jobs are created means that there is not much of an incentive for extra-regional workers to in-migrate or in-commute, so many of the jobs are captured by locals. While local job capture brings about a notable reduction in the unemployment rate, local officials should be cognizant of the "types" of jobs being created.

Migrants without children (i.e., older households) do not appear to place substantial demands on local government expenditure categories, yet generate significant additional revenues—they may truly be "pure gold," at least from a local government perspective. Young migrants with families primarily affect local school expenditures, suggesting that communities need to carefully consider their capacity (and budget) to accept this type of migration.

An important caveat with the experimental approach adopted in this study centers on the construction of the scenario that is presented to the simulation model. The phrase "garbage-in, garbage-out" takes on a very important meaning in conducting impact assessment. While construction of the scenario can predetermine the end results, in experiments of the type reported here, the consistency of the scenarios across groups is vitally important. In the end, it the relative differences in impact levels across groups that lend insight into policies.

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