

Information Is Not Just Data

Wayne D. Purcell

The new Center for Rural Virginia is generating more interest in a program to provide the information to help revitalize economic and business activity in rural areas. The need to understand what will be required to build an effective rural Virginia information system is a pressing one because the problems in rural areas are acute.

A myriad of electronic centers profess to offer information. Most fall far short of being effective suppliers of measures that are truly informative. Access to a data center that provides links to facts or data is not adequate. In developing policies or programs to better serve our rural areas, we need an understanding of relationships and of how a change in state tax policy or in state budgets or a redirecting of a state program will influence what happens in rural communities. We struggle in our efforts to identify policies or build programs that provide solutions to problems in Virginia's rural economies. Much of that struggle comes back, I would submit, to short-comings in our body of information.

What appears to be missing in many discussions of programs and policies is the presence of analytical thinking. To demonstrate why an analytical component is so important, I look first at per capita income measures and show how income data can be turned into useful information.

The latest data on per capita income in Virginia are for 2002. The 2002 Virginia average per capita income of \$32,793 has limited usefulness for policy and program purposes. A single number does not lend itself to useful analysis.

A graph that plots average per capita income in Virginia across a number of years helps (Figure 1). Whether per capita income in Virginia is increasing or decreasing is now clear. The graph of Virginia shows strong increases over time but offers no particular evidence that public intervention to help solve problems in rural Virginia is needed or justified.

Thinking more analytically about Virginia income suggests the need for a comparison of rural and urban/suburban (urban) incomes.

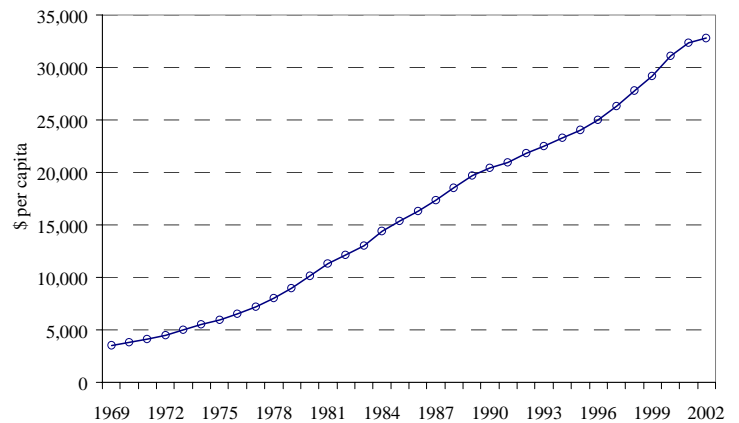


Figure 1. Per capita Virginia income, 1969 – 2002.

With such an additional step, the usefulness of the data would increase dramatically. This added detail is not possible, however, until useful definitions of rural and urban communities have been developed.

Figure 2 was developed using the definition of rural as a county with less than 120 people per square mile. This definition of rural means urban areas are primarily in the "Golden Crescent" from Washington, DC down Interstate 95 to Richmond and into the Tidewater region. Population per square mile is the most used of



Figure 2. Rural or urban based on population per square mile, 2003.

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several ways the Rural Virginia Prosperity Commission (RVPC) defined “rural.”

The division into rural and urban allows the development of Figure 3. We can now easily tell whether the two income series that divide the state totals into rural and urban are coming together or moving apart.

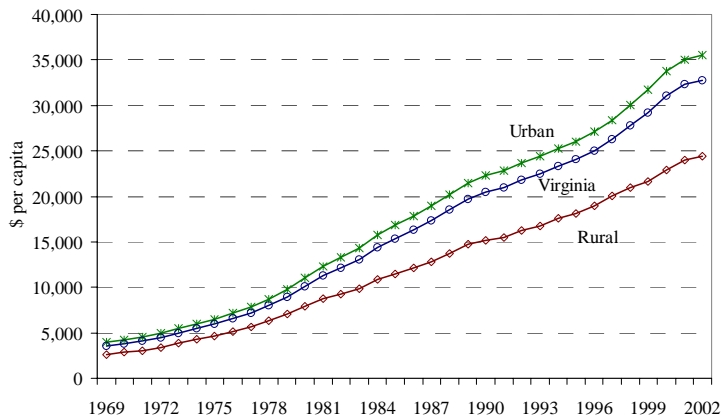


Figure 3. Per capita income for Virginia and rural and urban localities, 1969 – 2002.

The simple arithmetical step of subtracting rural incomes from urban incomes provides further help in turning the per capita income data into useful information (Figure 4). The pattern in the differences delivers a stronger message than just the observation of the rural and urban incomes presented separately.

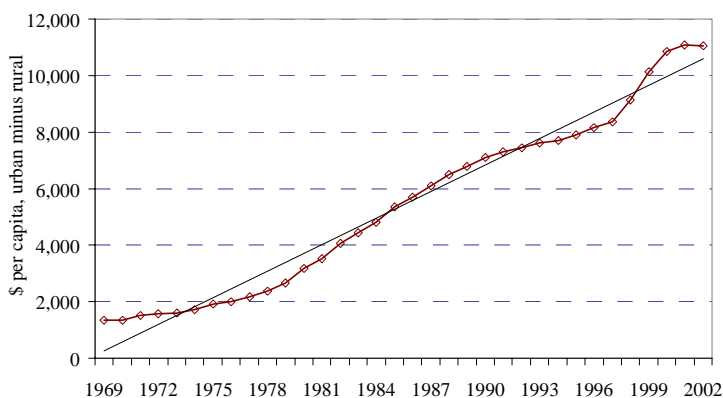


Figure 4. Urban/suburban minus rural per capita income, 1969 – 2002, with trend line.

The statistical tools of most modern spreadsheet programs enable us to extend the sophistication of the analysis by fitting a linear function to the income difference data. The slope coefficient “b” in the model in the general form $income\ difference = a + b(years)$ shows how the differences are changing over time by measuring the annual rate of increase. The fitted straight line is shown on the data in Figure 4 and the statistical measures indicate that the difference grew at an average annual rate of \$311 per capita across the 1969 to 2002 time period.

At this point, an information base on which policy decisions can be considered is emerging, but the information series that have been developed may still not be adequate to support policy and program decisions. One obvious concern is that the plot of income differences over time may not be linear. If the year-to-year differences are increasing, an exponential growth pattern is present. Upon examining Figure 4 from 1996 to 2000, we see that the growth rate was, in fact, exponential during that period.

At this point, the “why” of the pattern in Figure 4 for 2001 and 2002 must be considered. The 2001 to 2002 change was the first decline since 1969. An immediate hypothesis is that the decline of the stock markets in 2001 and 2002 hurt incomes of urban families more than the rural families. But if the stock market decline is the reason, we face the specter of the exponential growth rates returning in 2004 and beyond. The need to investigate exactly what prompted the recent income changes takes on a level of urgency.

As we move forward, we must remember what has gotten us to this point: the income data have been turned into useful information. None of the insights that have been developed here would have been available if we simply looked at existing facts and data on Virginia incomes.

The possibility of public efforts to improve incomes in rural areas increases significantly when the available data are managed and analyzed to paint a clear picture of what is happening. It follows that we are much more likely to fashion programs with a high chance of success when we understand the magnitude of the problems. As I complete this discussion, I am very interested in getting the 2003 data as soon as it becomes available from the Bureau of Economic Analysis to see which pattern was present in 2003.

If we see another year-to-year decrease, it might be the result of programs put in place by the General Assembly in the past few years and/or because the Tobacco Commission has invested millions in economic development in tobacco producing counties in rural Southside and Southwest Virginia. When we get the new data, it will take an information base like the one developed here to give us answers on whether we are seeing a significant change in rural income patterns.

To further illustrate that facts and data are not information, I use two illustrations.

Illustration 1: Viability of Farming to Maintain Open Space in Virginia

Open space is important to Virginians. Farming keeps space open and supports farming activities as well as tourism, hunting, fishing and other economic activities in the state. Any state agency leader or elected official interested in looking at whether farming will continue to protect open space in the Commonwealth could look at any number of data series on the subject. Net farm incomes plotted across the past 15 years is a logical choice (Figure 5). This series is available from the Virginia Agricultural Statistical Service

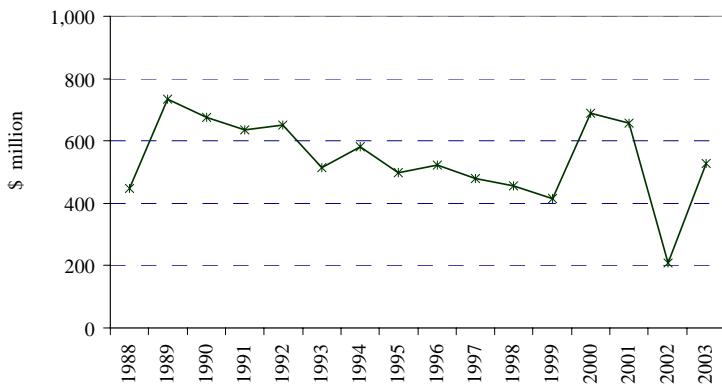


Figure 5. Virginia net farm income, 1988 to 2003.

and in state level data from the National Agricultural Statistical Service (<http://www.nass.usda.gov/va/> and <http://www.ers.usda.gov/Data/FarmIncome/finfidmu.htm>).

The data present a grim picture. The trend is clearly down, and if the numbers were adjusted for price inflation, the negative trend would be even more dramatic. Do these data on net farm incomes mean we risk seeing lots of acreage go out of farming and a related decline in open space?

The answer is, “No.” We are not at risk of seeing a large number of farms driven out of farming by the decline in net farm incomes because the vast majority of Virginia farms do not support the farm families from on-farm incomes. Virginia has over 47,000 farms according to the Agricultural Census definition of farm. More than 43,000 or almost 92 percent of those 47,000 farms have annual sales less than \$100,000 (Table 1).

Table 1. Measures of farms by size of sales, Virginia, 2002

Farm sales \$	Number of farms	% of total farms	Sales (\$1,000)	% of total sales
Less than \$100,000	43,685	91.8	1,213,691	18.1
\$100,000 to \$249,000	1,708	3.6	277,501	11.8
\$250,000 to \$499,000	1,137	2.4	396,285	16.8
\$500,000 and greater	1,076	2.3	1,259,855	53.4

Less than \$100,000 corresponds to Limited resource farmers, Retirement, Residential/lifestyle, and Farming occupation/lower-sales categories in the graph.

Source: USDA, “Table 2, Census of Agriculture, 2002.” Found at <http://www.nass.usda.gov/census/>

At the national level, the USDA identifies four farm categories with sales below \$100,000: (1) Farming Occupation/Lower Sales, (2) Residential/Lifestyle, (3) Retirement, and (4) Limited-Resource categories (Figure 6). These four small-scale farm categories are in the 43,685 farms with sales less than \$100,000 in Table 1.

In 2000, the USDA chart (Figure 6) shows all these smaller farm groupings had, on average, negative farm incomes and did not, therefore, make any contribution to family living expenses. Farms selling \$90,000 to \$100,000 in

crops or livestock would surely make *some* contribution, but average sales for the Virginia farms with sales under \$100,000 is only \$27,783 according to 2002 Agricultural Census data. Net income from such limited sales would be small at best. The inevitable conclusion is that the 92 percent of our farm families with farm sales under \$100,000 per year must earn most or all of the family income from non-farm sources.

To maintain open space and keep existing farm families on the small farms and in their homes, the adult members of those households must have access to off-farm jobs. Lots of very good reasons exist to try to improve farm incomes. But if the objective is to secure and preserve open space for future generations, focusing on farm incomes is not necessarily the top priority. We need emphasis on state and local economic development efforts in our rural areas.

By turning data turned into information, we have found important connections across open space, the viability of our farming communities, and the economic development activities and resources dedicated to rural Virginia. But we do not get to that potentially significant conclusion looking at data on net farm incomes, number of farms, average farm size, average age of farmers or any of the other facts and data we hear in discussions about our farming communities.

Illustration 2. Financing Local Services in Rural Virginia with Subsidies from Urban Virginia

Local jurisdictions in rural Virginia are struggling to finance county level public services such as education, police protection, fire protection, and health care. The RVPC created a tier system to analyze the level of economic stress in rural counties. The tiers use county incomes, unemployment, and percent of school students qualifying for subsidized meals compared to state averages. Tier 1 counties are those counties where

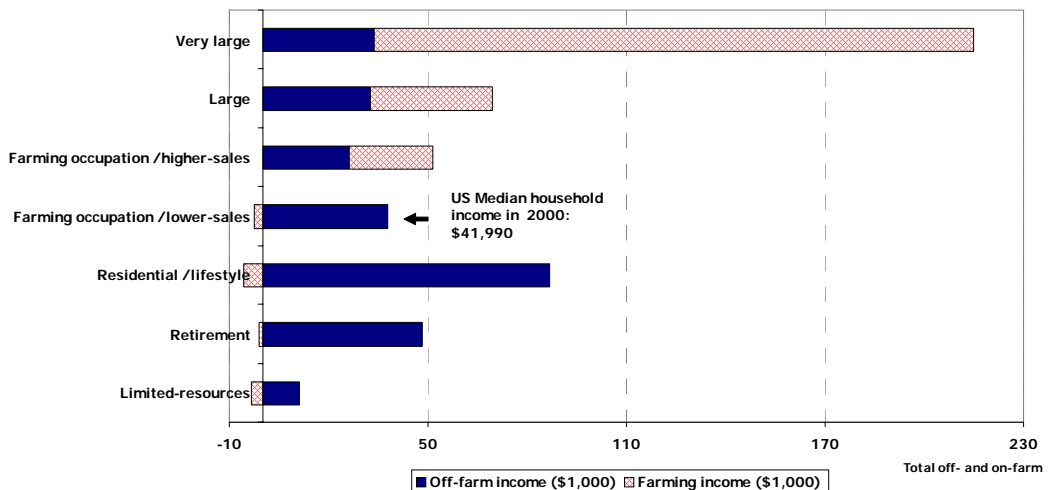


Figure 6. Farm and off-farm income by USDA category, 2000.

economic stress is greatest: median household income is below 65 percent of state levels *and* either unemployment is more than 140 percent of the state average *or* the percentage of students qualifying for subsidized meals is more than 175 percent of the state average level (Figure 7). Tier 1 counties are counties that fit our intuitive image of rural.

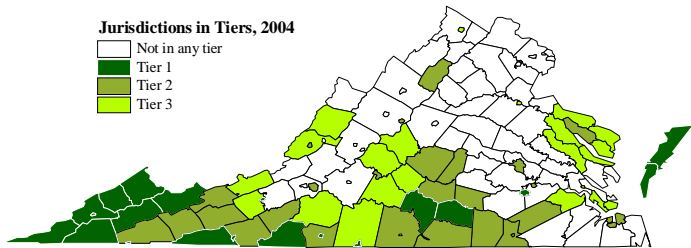


Figure 7. Economic stress level in Tiers, 2004

The RVPC evidence of economic stress supports county-level assertions that budget problems in rural Virginia are acute. Concurrently, affluent jurisdictions, especially in Northern Virginia, are becoming more vocal in their assertions that tax revenues they send to Richmond are being used to subsidize other areas.

I confirmed in the earlier look at rural versus urban incomes that rural Virginia is falling behind. If incomes falter, then it makes sense that local budgets might be strained. We have lots of facts and data on county level budgets. Figure 8 shows a plot of total county budgets in the Commonwealth across the 1988 to 2003 period. Robust growth is apparent. The percentage growth from 1988 to 2003 is 151.8 percent, well above the 54.0 percent increase in price inflation plus any increases related to population growth across the period.

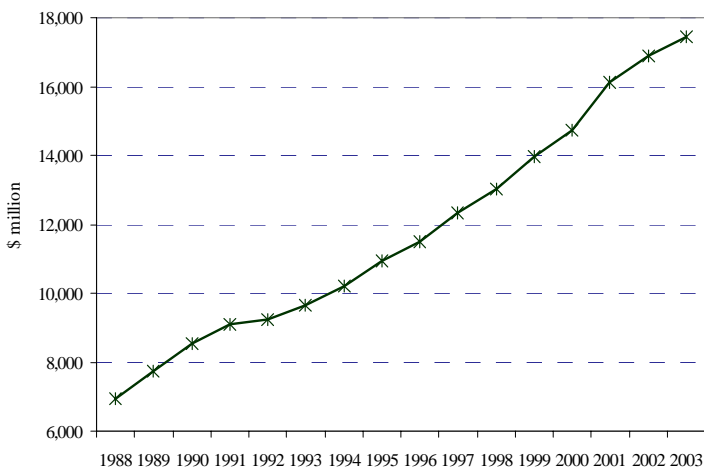


Figure 8. Total local budgets in Virginia, 1988 to 2003

Decision-makers in the state can and do take refuge in the rapidly increasing budget numbers to argue against the need for new policies or for state-level intervention in revitalizing local jurisdictions whether rural or urban. Any analytical process that aims to get at the heart of this issue needs to start with the simple step of dividing the county budgets into state and local

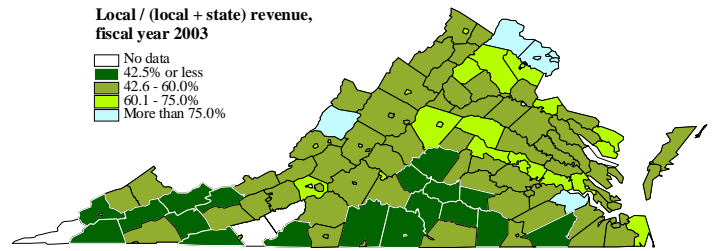


Figure 9. Local revenue divided by state plus local revenue, 2003

contributions. Percentages of the total local budget coming from local sources can be calculated (Figure 9). A conclusion jumps off the page: with many of the rural counties providing, from local sources, as little as 36.1 percent of their budgets, these counties have received a subsidy. The mirror image is present in the urban counties like those in Northern Virginia and around Richmond and down into the Tidewater section with percentages of local budgets from local sources running as high as 86.1 percent.

Local contributions to local budgets increased much faster in urban Virginia than in rural Virginia from 1988 to 2003 (Figure 10). The difference, urban minus rural, was \$3.336 billion in 1988 and the difference had increased to \$8.091 billion in 2003, more than double the 1988 level. These data are in nominal dollars. Adjusting for inflation would not change the pattern significantly since each series would be divided by the same CPI index levels.

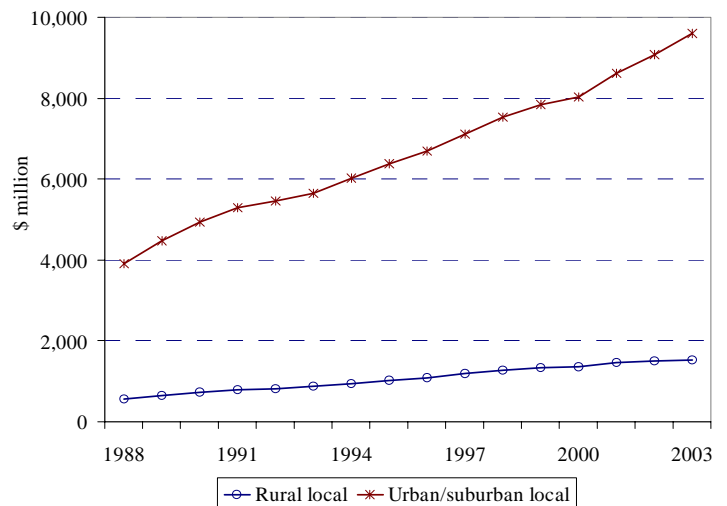


Figure 10. Local contribution to local budget, rural and urban jurisdictions, 1988 to 2003.

The growing contribution from local sources in urban counties supports the assertions that tax submissions from the urban areas, once they reach Richmond, are being diverted to rural counties to keep schools open and police cars and fire trucks on the roads. In response to the growing sense of urgency surrounding this issue, the RVPC requested a special analysis of interagency budget flows for fiscal 1998.

The findings were startling. The more affluent counties were sending, in 1998, an estimated \$346 million more to Richmond than

they were getting back in support of their local needs. Of this total, \$189 million was being redistributed to 42 rural counties and 4 independent rural cities. Figure 11 shows, in per capita terms, the counties that sent the subsidies through Richmond. Figure 12 shows the counties that received the subsidies, again in per capita measurements.

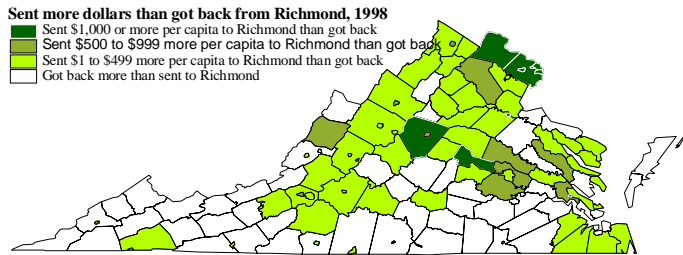


Figure 11. Jurisdictions sending more locally raised taxes to Richmond than were being received in allocations, 1998, in dollars per capita

The subsidies become significant parts of local budgets in rural counties. State contributions are as high as 63.9 percent of the local budget in some rural counties. All sources of taxes, licenses, permits, and personal and corporate income tax revenues from the urban counties are used in the per capita subsidy calculations, but personal income and sales tax dollars account for the majority of the total.

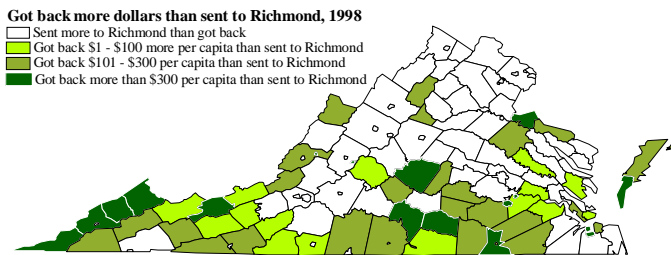


Figure 12. Jurisdictions getting more dollars from Richmond than were being raised locally, 1998, in dollars per capita

The RVPC concluded that the marketplace will not fix this growing divergence between rural Virginia and the rest of the state. The differences between the “haves” and the “have nots” in Virginia have been present for decades. State intervention will be needed.

Actions are being taken. The 2004 session of the General Assembly worked to improve access to capital in rural Virginia and has moved aggressively to broaden access to high speed internet capacity in rural communities. Recent initiatives announced from the Governor’s office propose \$21 to \$22 million in investments in programs designed to boost economic activity in rural parts of the state. The economic development efforts of the Tobacco Commission were mentioned in discussion of rural versus urban incomes. The total investments in economic development initiatives exceed \$100 million.

RVPC efforts to turn the myriad of often confusing data into useful information has facilitated state initiatives. The \$189 million number has been part of many policy and program discussions since the RVPC presented the evidence of the income transfer in its December 2001 final report. I cannot imagine effective solutions to economic problems in rural communities in the absence of information coming out of rigorous analytical thinking about the issues.

Some Final Thoughts

Rural Virginia *is* falling behind. Economic growth is not keeping pace with urban Virginia. Awareness of the onerous trend is highlighted by the findings in the December 2001 report of the Rural Virginia Prosperity Commission (www.rvpc.vt.edu). One of the Commission recommendations was to create a “rural center” in Virginia to help identify causes of economic stress in our rural communities and to fashion solutions. Legislation in the 2004 General Assembly established a *Center for Rural Virginia*. The fledgling organization recognizes the need to develop a “rural information system” to facilitate the analyses necessary to solve problems in our rural areas.

With widespread access to the internet, some would argue that we do not need a new program. But they would be wrong. Electronic access to sites that house facts and data is not sufficient. Facts and data are not information. Recognition that data does not equal information needs to be front and center in discussions about, and planning for, a rural Virginia information system.

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