THE STATE OF

THE REGIONAL ECONOMY
The economy of Hampton Roads (which the U.S. government labels the Norfolk-Virginia Beach-Newport News Metropolitan Statistical Area, or MSA) produced a Gross Regional Product (GRP) of $43.1 billion in 1999. This is hardly a trifle, for ... 2000. As seen in Graph 1, the region's GRP, unadjusted for price changes, climbed from $29.2 billion in 1990 to an expected $47.77 billion in 2000.

The decade of the '90s brought significant changes to the region's economy. Among the most significant was a decline in the defense industry's importance to the Hampton Roads economy. The economic significance of the defense industry fell from ... the region's economy struggled to keep up with that of the nation and the rest of Virginia. In fact, it did not. Graph 2 displays "real" (price inflation eliminated) growth rates of the region, state and nation from 1990 to 2000. Since the 1991 

What are the antidotes to a "manic-depressive" economy?

Many factors come into play when predicting the future of the Hampton Roads economy. Defense spending, non-defense-sector growth and a commitment to collaboration among private and public high-tech industries are threevery large ... these factors, as we will see here, are interconnected. Per capita income, often used to measure a region's economic well-

What are the antidotes to a "manic-depressive" economy?
recession, the region's gross output has more often than not lagged behind that of both Virginia and the nation. From 1990 to 2000, Hampton Roads' GRP (Graph 3) real growth rate was an average eight-tenths of a percentage point per year below that of the nation's Gross Domestic Product (GDP) and six-hundredths of a point per year below the real growth rate of Virginia's Gross State Product (GSP).

The negative economic growth rate gap in the '90s between Hampton Roads and Virginia was nothing new, however. The disparity between this region and the state has persisted since the mid-1980s. In every year since 1984 to the present, Virginia's economic growth rate has exceeded that of Hampton Roads. The result of this year-in, year-out differential has been a persistent decline in Hampton Roads' share of state output. As seen in Graph 4, the region's share of Virginia's output fell from 21.4 percent in 1983 to approximately 17.8 percent in 2000.
The average yearly growth in the output of the nondefense-dependent sector of the Hampton Roads economy was an estimated 3.54 percent per year through the '90s, a rate which far exceeds the 2.07 percent average year-to-year growth rate of Hampton Roads' gross regional product (GRP). Variations in defense spending are largely responsible for the difference in the decade-long average growth rate of the nondefense sector of the area's economy and its GRP growth rate.

Adjusted for price changes from 1990 to 2000, the output of the Hampton Roads nondefense-dependent sector grew at a rate of more than twice that of the region's real GRP. Measured over the entire period, the region's real nondefense-dependent output grew by a total of 47 percent while real GRP grew by 20.5 percent.

The Hampton Roads economy has been highly cyclical over the past 20 years. During the 1990s, the region's economy was a case study of how the growth of a metropolitan area's economy can be adversely affected by a lack of diversification. The defense sector provided a significant portion of the region's economic output, particularly in Hampton Roads during the 1970s, as national defense policy called for a significant reduction in defense funding.

As negative and cloudy as the previous data seem, they actually contain a silver lining. As Graph 5 indicates, Hampton Roads' nondefense-dependent sector, which currently accounts for 71 percent of the GRP, grew rapidly, often outstripping the growth of the region's GRP. Further, the trend growth of the nondefense-dependent sector of all three economies matched that of the nation and state. Displayed in Graph 5 are the mean year-to-year growth rates of the nondefense-dependent sector of all three economies. The region's average nondefense-dependent sector growth rate of output during the 1990s was slightly better than that of both the national and state economy (see Graph 6). During this period, the nondefense-dependent sector of Hampton Roads grew an average of slightly more than one-tenth of a percentage point per year faster than that of the rapidly growing Virginia economy, and slightly more than one-tenth of a percentage point per year more than the national economy.

Source: Old Dominion University Forecasting Project
A commonly used measure of a region's economic well-being relative to the rest of the country is its nominal per capita income. However, in the process of assessing an area's relative economic standard of living, comparing nominal per capita income fails to account for price differences between economic units or purchasing-power parity. Price levels in the largest metropolitan areas of the country typically are higher than those in Hampton Roads. After accounting for price differences between U.S. metropolitan areas, Hampton Roads real personal income per capita stood at 98.9 percent of U.S. real personal income per capita in 1998, the most recent year for which complete data are available. In other words, the region's relative economic standard of living in 1998 was slightly below average.

As seen in Graph 8, Hampton Roads' price-adjusted personal income per capita closely tracked the U.S. trend over the past 20 years. The antidote to this situation appears to be at least partially at hand. While the defense-dependent portion of the Hampton Roads economy has fallen from a 25-year high of 44.3 percent in 1985 to approximately 29.1 percent in 2000, data ... economies, an event concealed by the intensity of the defense downturn. The positive performance of the nondefense sector of the region's economy, along with the possible end to defense-spending reductions in the area (which are discussed in another section of this report), bodes well for future economic growth in the area.

Graph 7: Year-to-Year Growth Rates of Hampton Roads' Gross Regional Product and Nondefense Sector Output, 1990-2000

Graph 8: Source: Old Dominion University Forecasting Project

The region's economic standard of living improved during the 1990s because of the then dramatic increase in defense spending during the Reagan administration. Figuratively speaking, over the past two decades, we have lived in a manic-depressive economy.
Taking a longer-run perspective, Hampton Roads’ real per capita personal income, compared to that of the entire country, was 96 percent in the 1970s, 102 percent in the ‘80s and 99 percent in the ‘90s (see Graph 10). These data suggest that if employment levels and living costs are kept to a minimum, the region’s per capita real personal income should continue this baseline improvement.

The year-to-year variation in the region’s real per capita personal income relative to parity with that of U.S. real personal income per capita can be seen in Graph 9 (here, 100 percent represents parity with the national average). What is remarkable is the degree of fluctuation is typical of metropolitan areas throughout the United States where active-duty military personnel represent a significant segment of those areas’ total employment.

The year-to-year variation in the region’s real per capita personal income relative to parity with that of U.S. real personal income per capita can be seen in Graph 9 (here, 100 percent represents parity with the national average). What is remarkable is the degree of fluctuation is typical of metropolitan areas throughout the United States where active-duty military personnel represent a significant segment of those areas’ total employment.

Graph 9

Hampton Roads' price-adjusted per capita income

Hampton Roads' price-adjusted per capita income

Source: Old Dominion University Forecasting Project

Graph 10

Real Per Capita Income for Hampton Roads

92%
94%
96%
98%
100%
102%
104%

Source: Old Dominion University Forecasting Project
The regional economy

Source: Old Dominion University Forecasting Project

The U.S. Office of Technological Assessment, the National Science Foundation and the U.S. Department of Labor have created an empirically useful definition of high-technology occupations. Applying this definition to data from the U.S. Bureau of Labor Statistics reveals that the proportion of employment in high-technology occupations is lower in most of the region's MSAs than in those metropolitan areas with high per capita personal income. However, as we shall see, one of the major problems with this comparison is that none of the military-related cities in the region's economic base have price-adjusted per capita incomes close to or less than the national average. Why? Because these technology employment regions have been uninterested in technology transfer and commercialization (or are prohibited by law from pursuing this option).

Hampton Roads is an exception. The economic substructure of the Hampton Roads economy is similar to those of other MSAs whose workforces contain more than 7 percent active-duty military personnel. Whether large or small, from Jacksonville, N.C., to Honolulu, Hawaii, military-oriented communities have price-adjusted per capita incomes that are lower than those national leader. San Jose's technological base, however, is predominantly private sector- and university-based. Communities with more diversified economies have been more successful at luring and retaining high-technology industries.

One drawback to this strategy is that Richmond is already well established as the regional hub for these potential economic growth sectors. Although only two-thirds the size of Hampton Roads, Richmond actually provides a significant proportion of the industrial substructure of Hampton Roads. This is not a flashy strategy, but one whose payoff is slow and comes in the form of agglomeration, or scale economies, and finance, insurance and real estate (FIRE). Recent research indicates that an increase in the structural diversity of a community on average earns about $500 more in per capita income.

Future Economic Growth: Breaking Out of the Mold

One of the most important characteristics statistically associated with a metropolitan area's level of per capita income is the degree of industry-sector concentration in its workforce. High per capita-income metropolitan areas tend to exhibit diversification in the distribution of employment across industries. In particular, employment proportions in the wholesale trade, communications and FIRE industries typically are significantly below those metropolitan areas with high per capita personal income. None of these military-oriented cities have been highly attuned to technology transfer and commercialization.

Surprisingly, Hampton Roads holds a considerable advantage over most other U.S. metropolitan areas in the proportion of employment in high-technology occupations. As seen in the table below, high-technology employment in Hampton Roads is roughly one-third that of San Jose, Calif., the national leader. Hampton Roads' technology employment is that it is predominantly public sector in origin (U.S. government), and federal agencies.

Another significant predictor of per capita-income growth is the proportion of “high-tech” employment within a metropolitan area. The “new economy” perspective holds that high-technology occupations are the key to future economic growth rates and subsequent income generation above the national average. This comparison suggests that one strategy to raise per capita income in the region would be to, one step at a time, recruit industries, particularly in the FIRE and wholesale trade sectors, that could help diversify the industrial substructure of Hampton Roads. This is perfectly in line with the “old economy” perspective, which holds that the region’s economic base must change.

The “new economy” perspective is that in the post-military economy, the competitive advantage of cities in Hampton Roads is not with each other, but Richmond. In this sense, the real economic development competition for cities in Hampton Roads is not with each other, but Richmond.

One preliminary study of factors correlated with metropolitan-area income conducted at Old Dominion University indicates there are two general categories of these factors associated with per capita income differences across metropolitan areas. One way to view these two categories is through a modern rendition of the tortoise and hare fable, or the “old economy” and “new economy” perspective.
Given Hampton Roads' relatively high proportion of technology workers, it appears the region would have a head start over most U.S. metropolitan areas in any attempt to form a pool or critical mass of technology workers, if only their work could be removed from their "silos." Whether or not such a pool could begin to spin off new firms and products at a rate that exceeds that of the nation would depend substantially upon the degree and level of information exchange between its members.

Paul Krugman, an economics professor at MIT and regular *New York Times* columnist, notes that research on regional economic development reveals that a "pooled labor market" of workers with industry-specific skills is an important factor in the local development of that industry. That is, a clustering of firms employing workers with similar skills creates the potential for informational "spillovers" among the firms. Such "spillovers" can reduce production costs and increase creativity for technology-oriented industries. The problem in Hampton Roads is that these "spillovers" have not occurred as often as they could – or should.

Despite its relatively high concentration of technology workers, the region has not realized the economies of scale that could result from this wealth of skilled human capital. Technology workers at locations such as the Joint Training, Analysis ... or custom from talking substantively with nonfederal and nonmilitary technology workers. Fraternization is not the rule of the day; intellectual "silos" are. Breaking down those barriers is an important key to the future economic prosperity of Hampton Roads.

In the world of high-technology, firm startups and commercialization, information is a critical raw material. The close proximity of a pool of scientists, engineers and other technology workers is an important condition necessary for the creation of ... such products is also aided by information exchange, the means to build human capital and the availability of financing.

The twin keys to this information exchange, and to capitalizing on the technology concentrations at federal installations in Hampton Roads, are university technology transfer and commercialization programs that partner with these federal ... technology workers (including those in the military) and private-sector and university entrepreneurs and scientists.

As Krugman, David Birch, the Milken Institute and a half dozen other economic development gurus have demonstrated, universities play a crucial role as catalysts in the creation of informational "spillovers." They are places to turn to for building human capital, and sources for the latest research and ideas in a specific area, for meeting and exchanging information, and for recruiting people who can help to implement the vision of a product. Thriving research universities are places where the ... becoming more and more difficult to define. Professors increasingly are entrepreneurs and entrepreneurs are professors.

Thus, a critical long-run step for communities that wish to increase "spillovers" and spur economic development is to ensure the development of a significant regional university research and technology infrastructure. However, in Hampton Roads, it ... While this would likely require a change in the cultures of the federal laboratories and installations in the region, the stakes are so high that progress in this arena would appear to be a very high priority for Hampton Roads.