



THE STATE OF
THE WORKFORCE

Is the workforce as good (or as bad) as they say?

Countries such as Japan and Luxembourg are not large, do not boast plentiful natural resources and must cope with high levels of population density. Nonetheless, both rank among the top 10 nations of the world in terms of per capita income and similarly are among the world's best with regard to other indicators of social health and prosperity, such as low rates of infant mortality and unemployment. What sets Japan and Luxembourg apart from other countries whose performances are much less impressive? A series of empirical studies suggests it is the quality of the Japanese and Luxembourg workforces that accounts for one of the most critical differences. Of course other factors, such as location and culture, also are important. Nonetheless, workforce quality is without question an extremely critical variable that differentiates nations – and regions – from one another.

It is not by accident that the composition and quality of the workforce in Hampton Roads has drawn major attention in recent years. Fortunately, a region's workforce is not an immutable constant. A region can change and improve its workforce through conscious policies, investments, incentives and penalties. This is important to bear in mind because the workforce of Hampton Roads, while praiseworthy in certain respects, is lacking in others. And, even if the workforce were precisely what the region needs today, changes might well be advised for next year, or even the following decade.

Some of the policy alternatives facing Hampton Roads will be discussed later in this section. First, however, it is appropriate to present some background information on the current Hampton Roads workforce, which is a starting point for any serious analysis of policy alternatives.

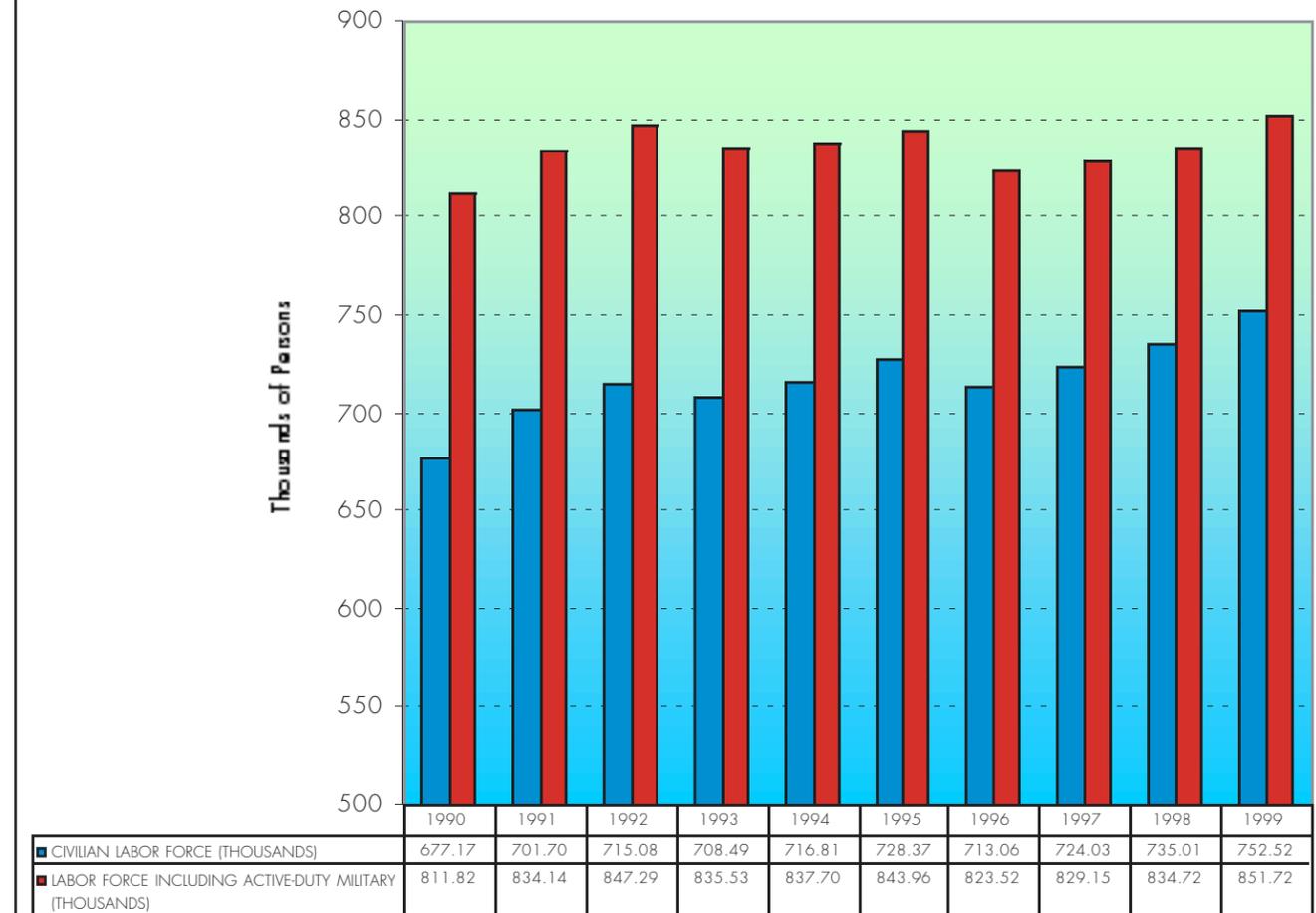
Size of the Hampton Roads Workforce

With a population approaching 1.6 million, Hampton Roads is the 27th largest metropolitan area in the United States. The region's population grew by 6.3 percent between 1990 and 1999 and lagged the U.S. growth rate of 9.3 percent by about a third.

As displayed in Graph 1, in 1999 the Hampton Roads labor force numbered more than 850,000 workers, or about 54 percent of the region's population. During the 1990s the aggregate labor force, including active-duty military personnel, grew by 5 percent, a rate slightly less than the population growth rate. Alternatively, the region's civilian labor force, which numbered roughly 750,000 workers in 1999, grew by 11.1 percent during the '90s, easily outstripping the country's 9.7 percent civilian labor force increase. The growth in the region's civilian workforce is a result of the considerable growth over the decade in the non-defense portion of the Hampton Roads economy, a trend many have overlooked. In fact, in 1990, active-duty military personnel accounted for 19.9 percent of the region's labor force, whereas in 1999 they comprised only 11.7 percent.

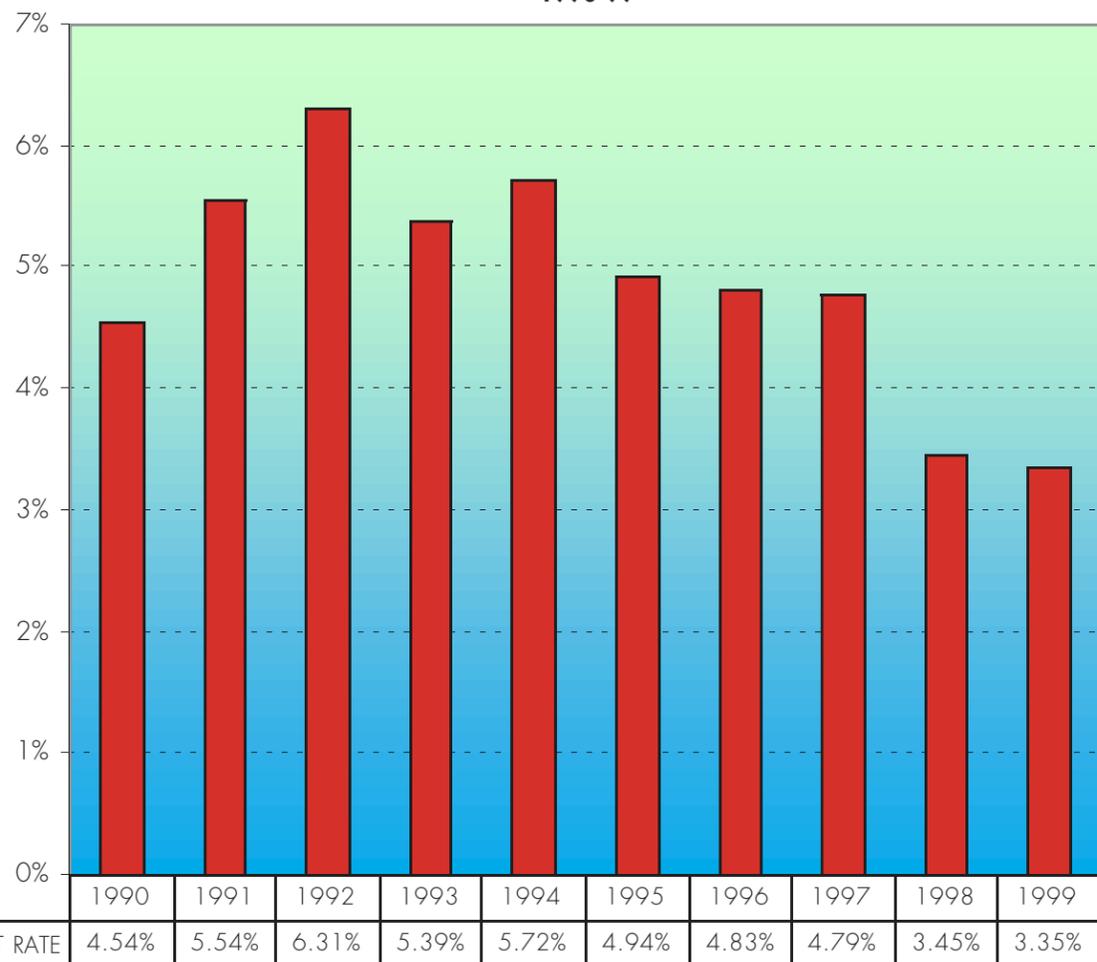
Given the dramatic decline in the military's portion of regional economic activity, one of the more remarkable characteristics of the Hampton Roads workforce over the past decade has been the continuous decline in the unemployment rate since 1992.

GRAPH 1
Hampton Roads Labor Force
1990-99



Source: Old Dominion University Forecasting Project, U.S. Department of Labor, and U.S. Department of Commerce

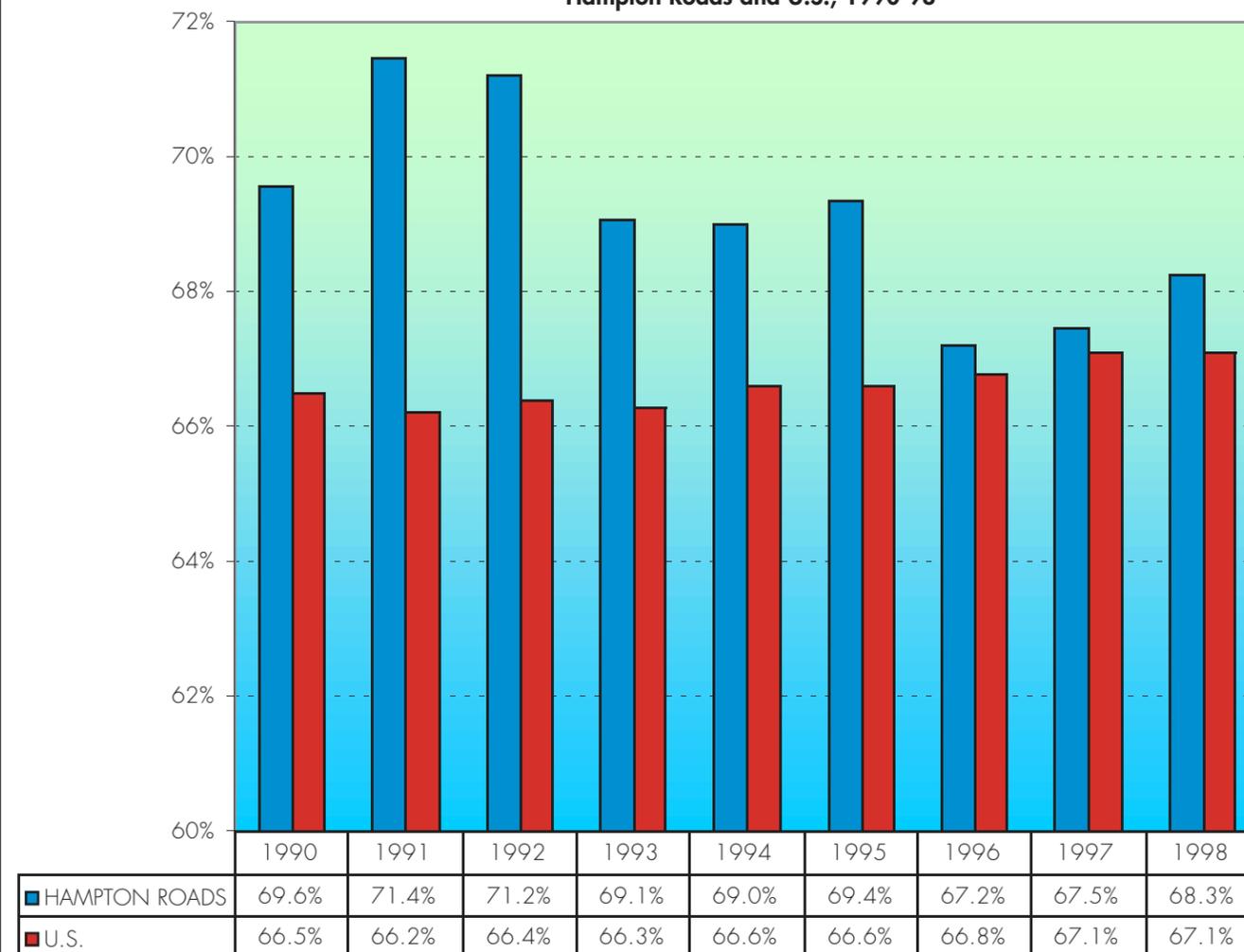
GRAPH 2
Hampton Roads Unemployment Rate
1990-99



Source: U.S. Department of Labor

Graph 2 reports regional unemployment rates in the '90s. Contrary to the beliefs of some, and despite the considerable difficulty encountered by the region's economy in digesting defense cuts during the 1990s, Hampton Roads' unemployment rate was below that of the nation in every year of the decade. Its yearly average was about eight-tenths of a percent below that of the U.S. rate. For example, in 1999, the nation's unemployment rate was 4.2 percent, compared to 3.35 percent for the region.

GRAPH 3
Civilian Labor Force Participation — Rate Population 16 Years or Older
Hampton Roads and U.S., 1990-98



Sources: Old Dominion University Forecasting Project, U.S. Department of Labor and U.S. Bureau of Census

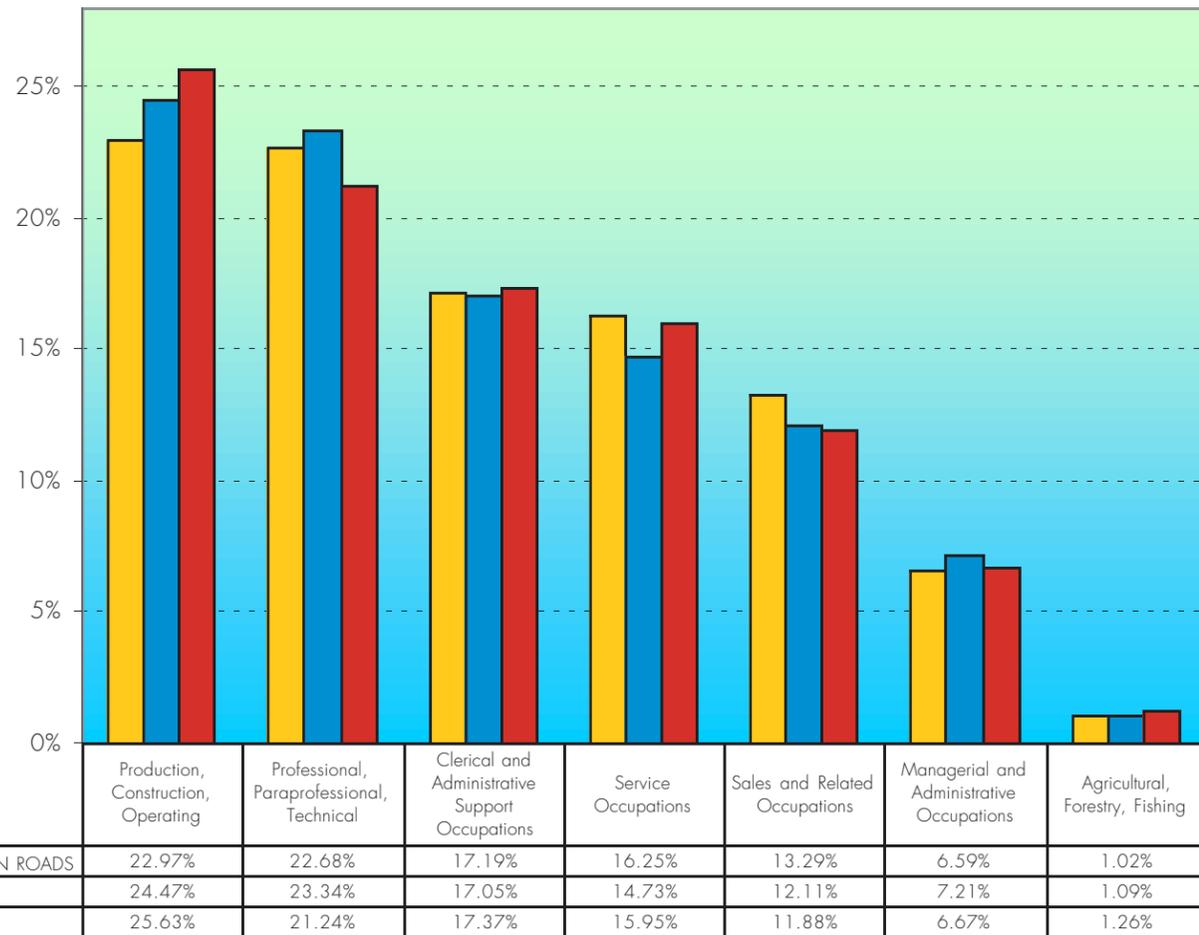
Hampton Roads' civilian labor force participation rate (LFPR), the proportion of people age 16 and over who actually are in the labor force, declined over the decade of the 1990s, while that of the nation rose slightly during the same period. As seen in Graph 3, the regional LFPR declined during most of the '90s, but still exceeded that of the nation during most years. It seems likely that a significant number of military personnel who prematurely retired because of defense downsizing spent some time retooling their labor market skills before entering the civilian workforce. Whatever the reasons for the downturn in the region's LFPR, this decline negatively affected the economic growth rate of the region. At least some portion of the decline in the region's per capita income (nominal or price deflated) from the early 1990s levels can be traced to the behavior of the region's LFPR.

The Virginia Employment Commission projects that the population of 15-64-year-old Hampton Roads residents will rise by 11.7 percent from 2000 to 2010. Given recent and projected patterns in the regional LFPR, this implies an increase in the Hampton Roads labor force of about 80,000 workers.

Occupational Characteristics

The occupational structure of Hampton Roads civilian workers is fairly similar to that of both Virginia and the United States, as seen in Graph 4. Hampton Roads employment is slightly more concentrated in the service- and sales-related occupations and less concentrated in production, construction and operating occupations, when compared to the distributions for Virginia or the United States. On the other hand, Hampton Roads has a greater concentration of professional, paraprofessional and technical workers. In particular, estimates by the Old Dominion University Forecasting Project, based on occupational data from the U.S. Department of Labor and “high-tech” job definitions from the U.S. Office of Technology Assessment and the National Science Foundation, indicate that Hampton Roads ranks in the top 11 percent of U.S. metropolitan areas for high-tech employment.

GRAPH 4
Distribution of Civilian Occupational Employment
Hampton Roads, Virginia and U.S., 1998



Source: U.S. Department of Labor

Upon learning this, many observers wonder why the region’s economic growth has not been higher. After all, isn’t technology one of the keys to growth? The answer is, Yes, technology is a key. However, a considerable proportion of technology employment in Hampton Roads is federal and, as noted in other sections of this “State of the Region” report, technology transfer and privatization of innovations from federal installations has been disappointingly lacking. There has been little in the way of technology transfer from federal laboratories such as NASA Langley Research Center and the Joint Training, Analysis and Simulation Center in Suffolk, for example, and hence spinoff effects have been minimal.

Wages and Productivity

In 1998, Hampton Roads average nominal wages (unadjusted for price differences between geographical areas) for all occupations, including military and federal jobs, were 90.2 percent of the national average. U.S. Department of Labor nominal wage data, for both full- and part-time private industry and state and local government workers (excluding military and federal workers), indicates that Hampton Roads wages were 85 percent of the U.S. average that year.

One factor associated with this difference in wages is geography. Displayed in Table 1 are average nominal wages in eastern U.S. Census Divisions as a proportion of the national average.

As a proportion of average U.S. wages, wages in the North significantly exceed those in the South. The Middle Atlantic Census Division reported the highest wage ratio of any census division in the nation. The current wage differential between the North and South in the eastern United States reflects long-standing historical and economic differences between the regions. Of course, there are also cost-of-living differences between the regions, and these are discussed below.

Given that large differences in income exist between the nation’s regions, shouldn’t the free movement of labor between regions neutralize these discrepancies over time? **There are at least three potential reasons why the South, including Hampton Roads, is likely to continue into the foreseeable future to have incomes that trail other regions.** First, labor unions are not as powerful in Hampton Roads as they are elsewhere. Like other areas in the South, Hampton Roads’ workforce is far less unionized than that of the Northeast. A worker is roughly three times less likely to be a union member in Hampton Roads as in the Middle Atlantic Census Division. The lack of a substantive union presence probably has little effect on professional and technical occupations in Hampton Roads, where wages are close to the national mean. However, it may play an important role in the existence of wage differences in semi-skilled employees such as truck drivers, for whom wages in Hampton Roads are only 73 percent of the national average, or food service workers, whose wages are 81.7 percent of the national average. Workers in nonprofessional occupations with a relatively stronger union presence in Hampton Roads, including machine operators, assemblers and inspectors, earn wages 2 percent above the national average for this occupational group.

Second, there are cost-of-living differences between regions. The Old Dominion University Forecasting Project, using U.S. Chamber of Commerce price data, estimates that prices in the combined northern census divisions, as displayed in Table 1, were about 13.9 percent above the U.S. average in 1998, while prices in the combined southern census divisions were 1.7 percent below the national average. This means that the interregional wage gap, once adjusted for price differences, is much

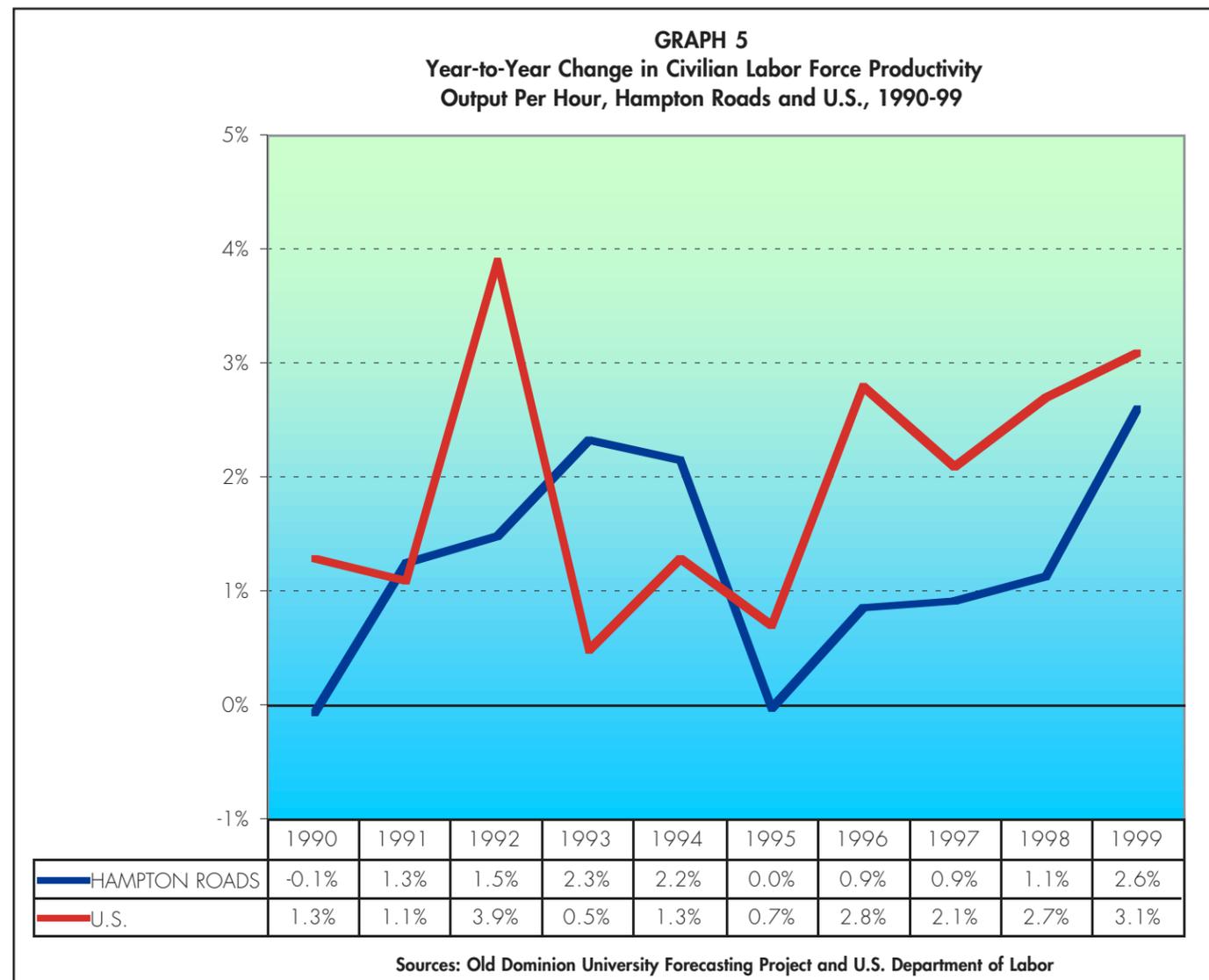
TABLE 1
Average Nominal Wages of Full- and Part-time Workers, Private Industry, and State and Local Government by Selected U.S. Census Divisions as a Proportion of Average U.S. Wages 1997

Census Division	Wage Proportion
South Atlantic (Va., N.C., Md., S.C., Fla., W.Va., Ga. and Washington, D.C., CMSA)	90.1%
East South Central (Ala., Tenn., Ky., Miss.)	78.7%
Middle Atlantic (N.J., N.Y., and Pa.)	115.7%
New England (N.H., Maine, Mass., Conn., Vt., and R.I.)	112.4%

Source: U.S. Department of Labor

smaller than that suggested by the nominal wage data. As is the case with unions, Hampton Roads is comparable to the overall southern census region with respect to prices. Specifically, in 1998 Hampton Roads' price level was 2.3 percentage points below the national average. As a result, adjusted for prices, the area's average real-wage level for all occupations was roughly eight percentage points less than the real-wage level of the northern census regions and very similar to the national average for price-adjusted wages.

The third potential reason for wage differences between regions has to do with labor force productivity. In particular, changes in productivity over time are critical to changes in the size of the interregional wage gap. Year-to-year changes in civilian labor force productivity for Hampton Roads and the nation over the 1990s are shown in Graph 5.



Hampton Roads' average year-to-year change in workforce productivity was 1.11 percent per year in the '90s, compared to 1.95 percent for the entire country. During that decade, Hampton Roads' productivity increases exceeded those of the United States in only three years: 1991, 1993 and 1994. One possible explanation for this less than sterling performance is that during the reduction in defense expenditures within the region, employers, especially shipyards, were hesitant to eliminate workers, believing that it might be hard to rehire them later. As a result, workforce productivity, especially from 1994-98, may have been adversely affected. The sharp rise in the region's labor force productivity in 1999, by which time most of the effects of defense-spending cuts had been absorbed by local firms, lends support to this hypothesis. A less benign reason for the drop in productivity is the possibility that the quality of the region's workforce declined over the last five years of the decade.

Workforce Quality: Opinions of Employers

When queried publicly, employers typically have good things to say about the quality of the Hampton Roads workforce. In a survey commissioned by the Peninsula Alliance for Economic Development (completed in October 1999), the region's employers revealed that:

- There is good availability of workers in most skills;
- They have success in recruiting managers and professionals from outside the region;
- They experience low employee turnover and absenteeism; and
- Employee productivity is high and the typical employee work ethic is good.

These findings, however, are not consistent with two other data sources. First, many employers complain privately that they cannot attract and retain a sufficient number of qualified employees, particularly in positions that emphasize technical and information technology skills. **Despite the positive test performance of Hampton Roads students on the Literacy Proficiency Test, some employers deplore the quality of the high school students and new graduates they must employ, asserting that a significant number of them cannot read well enough to follow written directions, cannot write coherently and are incapable of applying low-level math skills, including making change at a cash register.** Further, many employers privately complain that new entrants into the labor force (typically high school students or recent graduates) often lack sound work habits, exhibit low levels of loyalty to their employer and frequently do not get to work on time, or even appear at all.

No doubt some of these complaints reflect the significant tightening of labor markets, both nationally and regionally. Relatively speaking, new "marginal" workers in the labor force are less likely to be as talented, consistent and motivated as more experienced workers, especially those with families and military experience.

Second, employers' public praise of the quality of the Hampton Roads workforce is belied by data that report the performances of Hampton Roads students on externally validated examinations such as the Commonwealth's Standards of Learning (SOL) and the Scholastic Aptitude Test (SAT). While many individuals acknowledge concerns about the SOL and SAT, they do function as rough measures of the quality of a student's academic background and preparation, though not necessarily as measures of his/her ultimate potential with cultivation.

In virtually every city except Chesapeake and Virginia Beach, Hampton Roads K-12 students fall below Virginia averages in terms of their percentile rankings on the SOL exams. The final and most critical tale, however, is told by the high school end-of-course SOL assessments. This (see Table 2) is not a happy result because it suggests that the labor market talents of Hampton Roads high schoolers are below average for Virginia and that these students are relatively less prepared for postsecondary education than others in the state. These are harsh facts, but important ones to keep in mind as the quality of the Hampton Roads workforce is discussed.

TABLE 2
SOL Test Results for Hampton Roads Schools, Fall 1999

Grade 4 School Division	% Students Taking Test	Percentile Rank			
		Total Reading	Total Math	Language	Partial Battery
Virginia	96	52	57	57	56
Chesapeake	96	53	59	63	58
Hampton	95	42	52	47	48
Newport News	96	41	45	43	44
Norfolk	95	38	45	47	44
Portsmouth	95	33	32	43	37
Suffolk	95	39	46	49	45
Virginia Beach	98	49	59	58	55

Grade 6 School Division	% Students Taking Test	Percentile Rank			
		Total Reading	Total Math	Language	Partial Battery
Virginia	95	59	62	53	60
Chesapeake	95	57	59	54	58
Hampton	97	49	54	45	51
Newport News	96	50	54	44	52
Norfolk	89	44	48	36	46
Portsmouth	94	39	34	39	39
Suffolk	94	49	57	49	53
Virginia Beach	98	59	61	52	59

Grade 9 School Division	% Students Taking Test	Percentile Rank			
		Total Reading	Total Math	Language	Partial Battery
Virginia	92	60	65	50	56
Chesapeake	91	59	51	51	54
Hampton	92	57	48	48	52
Newport News	94	51	44	40	47
Norfolk	73	42	33	34	38
Portsmouth	87	43	36	37	41
Suffolk	87	42	35	32	39
Virginia Beach	95	60	55	49	56

Source: Based on data from the Virginia State Assessment Program, 1999 Detail Report, Table B, Stanford 9, Fall 1999 Division Results – National Percentile Ratings, Virginia Department of Education. Available on the World Wide Web: <http://www.pen.k12.va.us/VDOE/Assessment/VSAPreport/1999/>

As Table 3 reveals, SAT scores in Hampton Roads generally are below both Commonwealth and national averages. Indeed, not one of the seven largest cities in Hampton Roads has high school students who, on average, score more than 1,000 on the SAT. Since the Virginia average is 1,007 and the national average 1,016, this suggests that the complaints of some Hampton Roads employers about the region's high school graduates have some validity. To the extent that one believes the SAT measures legitimate aspects of academic preparation, Hampton Roads is likely to encounter problems with the quality of its workforce, or at least its employers are more likely to be forced to engage in more significant training and monitoring of new employees than might be true elsewhere in Virginia or the nation.

Workforce Quality: Education

Eighty-one percent of the Hampton Roads adult population has attained at least 12 years of education. According to the most recent reliable data, the 1990 U.S. Census recorded the average level of education in Hampton Roads at 13.1 years and the proportion of workers with a college education or greater at 25.2 percent. These figures are comparable to other U.S. metropolitan areas.

As seen in Table 4, Hampton Roads public universities and four-year colleges graduate about 7,000 students at all degree levels annually. Between 1995 and 1999, the total number of graduates (bachelor's, master's and doctoral degrees) from these Hampton Roads institutions rose by 3.5 percent, while in Virginia total graduates from public institutions rose by a comparable 2.8 percent.

Competition among the various school districts in the region for K-12 teachers, driven by the growth in the emerging workforce, has driven the districts to use incentives and a signing bonus to attract scarce teachers.

Regional school districts vary widely in their use of information technology (IT) to support curricula. Contrary to often expressed views, IT courses do not necessarily need to be added to the curriculum. Rather, IT needs to be better integrated into existing curricula for all students, regardless of the course of study, to more accurately reflect the way IT is integrated into the operations of the modern workforce. Interestingly, studies have shown that the single most important determinant of the role technology plays in individual schools is the commitment of the principal, and not, as many argue, funding, location or demographics. The IT Commission appointed by the governor of Virginia recommended,

TABLE 3
SAT Scores for Hampton Roads, 1999

School System	Verbal	Math
Chesapeake	485	472
Hampton	474	457
Newport News	n.a.	n.a.
Norfolk	446	436
Portsmouth	n.a.	n.a.
Suffolk	455	419
Virginia Beach	504	493
State Average	508	499
National Average	505	511

Sources: The Virginian-Pilot, "Average SAT scores for Virginia students show little change," September 1, 1999, p. A3.

"Hampton SAT Scores on the rise." Retrieved July 4, 2000, from the World Wide Web:

<http://www.sbo.hampton.k12.va.us/Whywerethe1stChoice/ontherise.htm>

Virginia Beach information based on data from Tables 2.19 and 2.20

"Scholastic Assessment Test (SAT I)," Office of Accountability, Virginia Beach City Public Schools. Retrieved from the World Wide Web:

<http://www.vbcps.k12.va.us/satschoo.pdf>

TABLE 4
Degree Production of Hampton Roads Public Universities and Colleges by Degree Type 1994-99

Degree	1994-95	1995-96	1996-97	1997-98	1998-99
Bachelor's	4742	4796	4594	4698	4906
Master's	1797	1994	1940	1983	1999
Doctoral	119	123	112	130	126
TOTAL	6658	6913	6646	6811	7031

Source: Virginia State Council of Higher Education

among other things, that Virginia's public higher education institutions should agree on a graduation requirement of a common set of competencies which includes fundamental understanding of digital technologies (hardware, software, communications, networking, etc.).

In Virginia, the community colleges have been singled out for a special role in workforce preparation. However, unlike the majority of our competitor states, Virginia did not begin funding noncredit workforce training until 1998, and the Commonwealth still provides very limited financial support in that regard for the Virginia Community College System. Training programs are required to be essentially self-supporting.

Workforce Issues

UPDATING THE CURRENT WORKFORCE

Rapidly changing technology is rapidly changing the skill requirements for almost all specialties, and industry expects training and teaching organizations to adapt just as quickly. In an information-oriented economy, workers have to learn and update specific job knowledge and skills on a continuous basis, including problem-solving and teamwork skills. Workers are no longer guaranteed long-term employment and must be more aggressive in keeping skills updated. Community colleges are especially ideal places for workers to update their skills, as are certification programs in areas such as information technology, court reporting, teacher training and so forth.

SKILLS VERSUS EXPERIENCE

It is said that experience is the best teacher. Insofar as Hampton Roads is concerned, this may be advantageous because of the large number of military veterans who live in the region. However, information technology (IT) has become so embedded in some manufacturing and service occupations that approximately 80 percent of national output now relies on significant amounts of these technologies. Unfortunately, IT employers assert that new entrants to the IT field are acceptable for only 20-25 percent of their vacant jobs. Thus, the acquisition of experience is essential. One way to gain experience is through internships and cooperative experiences. Industry, as well as educational institutions and other training providers, tends to underemphasize technical internships. A notable exception is Old Dominion University, which boasts of being the only doctoral university in the country to guarantee every undergraduate student an internship or cooperative education experience. More educational institutions would do well to follow this example.

While there is considerable federal employment in Hampton Roads, federal contractors often have difficulty finding workers who meet unrealistic federal education and experience requirements. Even when such workers are available, federal compensation is limited by wage-scale ceilings that often are 25-50 percent lower than private scales.

NEED FOR PLANNING AND COORDINATION

The Hampton Roads Partnership completed a strategic planning process in mid-1999, which, among other things, examined the value of a concerted regional effort to support the Virginia Spaceport at Wallops Island. Combined with the region's ports, transportation capacity and information technology resources, success in such an endeavor could move the region forward in the quest for higher-paying technology-related jobs. However, the strategic plan also recognized that Hampton Roads has no region-wide workforce development system. **In an information age when networking of systems, businesses, individuals and organizations is the watchword, the entities within the region, for the most part, still demonstrate a "silo" mentality.**

The Virginia Peninsula subregion has been involved for the past nine years in a series of efforts to coordinate workforce development efforts in North Hampton Roads. The Peninsula Alliance for Economic Development in 1999 funded a position to coordinate Peninsula workforce development efforts. West Hampton Roads has been involved in a two-year effort, under the leadership of Paul D. Camp Community College, to develop a strategic plan and coordinate local efforts. South Hampton Roads has had little coordinated effort regarding workforce development.

The Federal Workforce Development Act of 1998 established a structural framework for coordinating these efforts. The state is charged with establishing a workforce investment council, or board, to provide statewide oversight and direction, including a five-year strategic plan. One-stop centers for service delivery are mandated, requiring the silo-oriented local, state and private service agencies and providers to coordinate seamless delivery to the workforce. Local workforce delivery service areas are being identified statewide in response to the Act, and local workforce investment boards were to be established by June 30, 2000. It is not yet clear whether these administrative actions will be matched by behavior that increases or improves the supply of workers.

It is not unusual for a worker living in North Carolina or South Hampton Roads to commute to the Virginia Peninsula for work with large employers like Newport News Shipbuilding, Canon, Lucas Industries and others. Nonetheless, the Peninsula is establishing its own workforce development board, and the Hampton Roads Partnership and Hampton Roads Chamber of Commerce are coordinating the formation of a separate workforce development council representing West and South Hampton Roads. The charter of these boards and councils is to develop a workforce development system that meets the employer's need for trained and qualified workers, and the worker's need to acquire the skills necessary to effectively compete for jobs. It remains to be seen if these efforts result in concrete advances that expand or improve the workforce.

Several important workforce improvement opportunities exist. Hampton Roads, of course, is the home of the largest naval base in the world, and a variety of other military installations are also located here. Each year, thousands of people from these installations leave military service. They constitute a potential workforce that most employers, presumably, would fall over themselves to attract. However, many of these individuals choose to leave Hampton Roads without ever having been approached by the region's employers. Both the U.S. Navy and regional employers would benefit from mechanisms which would enable "soon to be" military veterans to learn about workforce opportunities within the region. Where such programs exist, they have been quite successful (for example, Old Dominion University's Military Career Transition Program has graduated more than 1,200 new teachers, a majority of whom remain in Hampton Roads).

Military personnel leaving active duty are generally well-trained and highly motivated. Most already have the security clearances in demand by federal contractors. In a time of record low unemployment, in a region seeking more high-technology jobs, it would appear unwise to permit this exodus to continue. At the very least, the region would benefit from knowing why military veterans choose to leave and what it would take to entice them to remain. It seems that getting a handle on this situation should become a priority of Workforce Investment Act initiatives.

Finally, until the workforce development planning efforts within the Hampton Roads MSA are coordinated on a truly regional level, extra expense, duplication of bureaucracy and intraregional one-upmanship are likely to continue.

Future Challenges

The Hampton Roads workforce is exceedingly diverse. It is neither as good as some regional boosters claim, nor as bad as some disappointed employers assert. The workforce includes not only the highly trained engineers and scientists who toil at federal laboratories and universities, and tens of thousands of military veterans who as a group are productive, experienced, loyal and dependable, but also a substantial number of individuals whose labor market talents are minimal and whose work habits are undeveloped. Comparatively low rates of student success on the Commonwealth's SOL exams and lower than average SAT scores roughly measure certain aspects of this phenomenon.

The challenges for the future are:

- (1) finding ways to attract and retain military personnel who leave active duty;
- (2) developing ways to improve the labor market skills of graduating high school students and dropouts;
- (3) training a sufficient number of information technology personnel to fill the burgeoning needs of Hampton Roads employers;
- (4) retaining as many as possible of the more than 7,000 students (particularly those in engineering and the sciences) who graduate each year from the region's institutions of higher education;
- (5) attracting and retaining high-quality K-12 teachers;
- (6) improving the quality of the educational experiences received by Hampton Roads K-12 students and bringing their achievements to national average levels; and,
- (7) placing greater reliance on the region's three community colleges to retrain and upgrade the regional workforce, and to provide an open door for an increasingly large proportion of the region's high school graduates.

