

Coal and the West Virginia Economy Issues for the Coming Century

by Mark L. Burton

Historically, the production and transportation of coal dominated both the physical and economic landscape of many portions of West Virginia. Moreover, even as the State's economy has diversified, coal remains of measurable economic importance to West Virginia, accounting for as much as 20 percent of gross state product.

Current patterns of coal production and consumption are, however, changing rapidly. Clean air standards and the ability to engage in largely unfettered surface mining have resulted in the movement of Powder River Basin (PRB) coal into numerous regions historically supplied by central Appalachia.

Electric utility restructuring, if ever realized, is likely to further alter patterns of coal usage. Finally, Environmental concerns regarding production methods in central Appalachia – particularly mountaintop mining – have placed the industry under considerable scrutiny and economic pressure.

As a consequence of these changes, State policy-makers are faced with a variety of decisions that are likely to materially affect the future contribution of coal production

to the West Virginia economy. A natural starting point in taking up these policy issues is a careful and evenhanded assessment of the coal industry's current impacts on employment, incomes, output, and tax revenue generation within the State.

Current West Virginia Coal Production

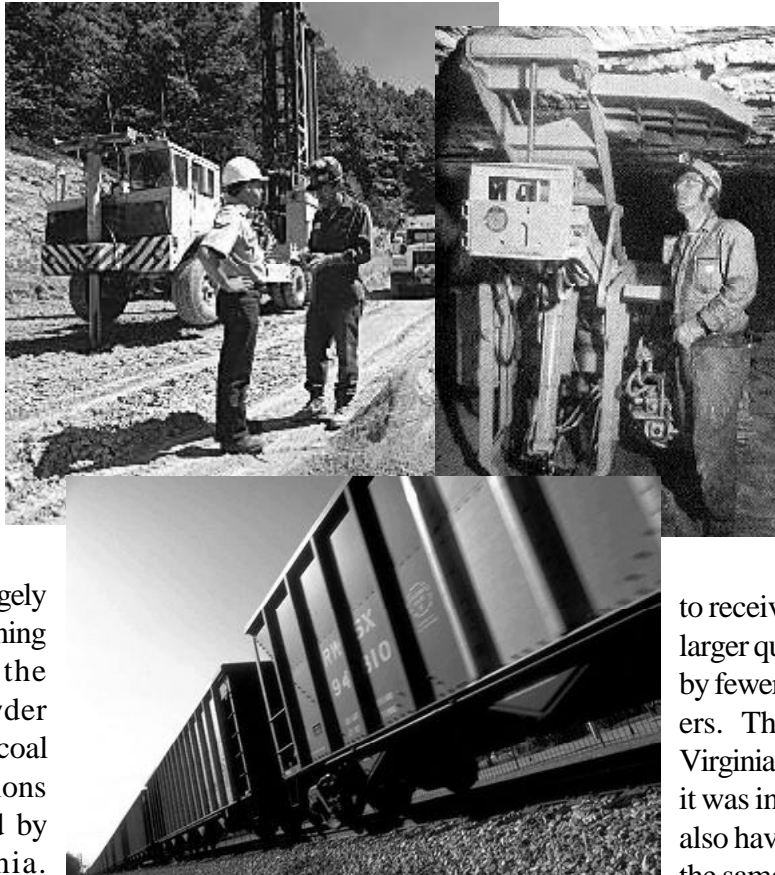
West Virginia coal production peaked in 1947 when post-World War II output surpassed 173 million tons.¹ Table 1 summarizes both production quantities and real mine-mouth prices over the past several years.

The figures within this table tell an easily understood story. West Virginia coal producers continue to receive lower and lower prices for ever-larger quantities of coal. This coal is mined by fewer, but increasingly productive workers. The real mine-mouth price of West Virginia coal is a little more than half of what it was in 1980. The State's mine operators also have two-thirds fewer employees. At the same time, however, total coal production

increased by more than 40% between 1980 and 1996.

Many have concluded that the decline in employment is attributable to the growth in surface mining – mining that now accounts for roughly one-third of all West Virginia production. Indeed, underground mining employment fell from 45,000 in 1980 to 16,000 in 1996, while surface

(see *Coal*, p.4)



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CBER Performing Ohio River Air Quality Analysis for U.S. Army Corps of Engineers

Historically, U.S. Army Corps of Engineers navigation studies have considered the negative environmental impacts of commercial navigation on fish and wildlife habitat and water quality, but have often neglected the positive impact that barge transportation often has on the nation's ability to preserve air quality. The fact is, in many cases, barge routings involve less fuel consumption and fewer pollutant emissions than alternative routings. Thus, the use of commercial navigation often means that fewer public resources have to be spent to preserve the desired level of air quality.

Through a CBER coordinated effort, Lewis College of Business faculty members Michael Newsome and Mark Burton are working with the Army Corps of Engineers' Huntington District to effectively capture air quality and pollution abatement navigation benefits within the Ohio River basin. The CBER study calculates fuel consumption and related pollutant emissions for more than 1,600 barge movements and corresponding land-alternative routings. Fuel consumption differentials are then used to predict the value of differences in healthcare risks and property damages under the two transportation scenarios. Preliminary study results should be available in late 1999.

To Our Subscribers

Not long before my interview at Marshall, I happened to watch a *Night-Line* segment on mountaintop mining. Hoping to seem well informed, I casually mentioned that segment during a small reception in Huntington. Immediately, a colleague (and now friend) pulled me aside to suggest that I pick another topic of conversation. I still remember his caution – “No matter what you say, Mark, you’ll make *somebody* mad.” That was my first encounter with the remarkably strong sentiments regarding mountaintop removal and other coal-related issues. I declined further comment on the topic that night, but a year and a half later, I still haven’t learned my lesson.

The fact is it would be impossible, to identify any social, cultural, or economic characteristic of West Virginia that has not been impacted by the mining and transportation of Appalachian coal. Coal has been the State’s economic mainstay for most of the 20th century, with fluctuation in the industry’s prosperity quickly translating into lean times or times of relative prosperity for the State as a whole. Coal’s impacts on West Virginia also reach far beyond the economic. The, now celebrated, histories of the mining, railroad, and barge industries poignantly reflect the struggle between social forces and the business concerns that typified the American commercial landscape in the early 1900s. Many of the century’s most difficult lessons were first learned in West Virginia.

Considering this rich history, it is not surprising that the 20th century should close with the current controversy surrounding the practice of mountaintop removal. Again, it would appear that a watershed struggle, destined to be played innumerable times elsewhere, is first being waged in West Virginia. Thus it seems only appropriate that we more carefully assess the economic importance of coal production to West Virginia’s economy.

The information contained in the current issue of the *Review* is not aimed at defending mountaintop removal nor is it intended to assail this or any mining practice. Instead, it is our ardent hope that this analysis will provide a useful context within which all West Virginians can consider the

probable economic impacts of the various available policy options. There will be economic consequences for the State regardless of how the current controversy is resolved. A careful consideration of these probable impacts at this juncture can only enhance the likelihood that the best possible policy will prevail. Moreover, this attention seems particularly appropriate at a time when rapid changes associated with clean air standards and electric utility restructuring suddenly make traditional assumptions regarding the demand for West Virginia’s coal suspect.



CBER News – Earlier this year, I indicated that Dr. Michael Hicks would be joining the CBER staff. Happily, Mike, his wife, and their two-month old daughter have settled into the Huntington community. We hope you will join us in welcoming them. Also it is worth noting that Mike plans to contribute heavily to the *Review*. In fact, he is, in part, responsible for this issue’s Y2K and international trade stories and he plans to introduce a regular set of business and economic indicators which will begin with the Fall 1999 issue.

Director,
Center for Business and Economic Research

This issue’s assessment of the economic importance of the coal industry is the first in a series of issues that will examine the economics of resource extraction and the roles that extractive industries can be expected to play in West Virginia’s future.

(Coal continued from p.1)

mining's share of State output increased from 21% to 33%. However, the conclusion that surface mining is at the root of employment declines largely ignores two critical facts.

First, without regard to surface operations, the productivity of underground miners increased dramatically over the 1980-1996 period. In 1980, 45,000 underground miners produced roughly 96 million tons of coal – about 2,100 tons per worker. In 1996, 16,000 underground miners, only one-third of those employed in 1980, produced more than 112 million tons of coal, or approximately 7,000 tons per employee. Thus, it appears that improvements in underground mining productivity are far more responsible for declines in mining employment than the continuing emergence of surface mining.

Second, portions of this text relate the observed changes in West Virginia's coal production and employment to a variety of changing market forces. It should also be noted that these same market forces have altered the group of users who purchase the State's coal. West Virginia's share of total U.S. output has remained relatively constant at between 15% and 20%. However, central Appalachian producers have lost market share in the mid-west while they are simultaneously displacing other coal producing regions in mid-Atlantic and south-Atlantic markets.

The Economic Impacts of West Virginia Coal Production

In 1997, West Virginia coal producers mined approximately \$4 billion worth of coal, employing roughly 20,000 workers in the process. This direct economic activity, in turn, leads to innumerable transactions in a variety of economic sectors.

Table 2 depicts the employment, earnings, and output impacts associated with coal production for the State of West Virginia. The first figure within each row is the income employment or output resulting from the direct expenditure for West Virginia coal. The second figure in each row measures the indirect effects resulting from the initial transactions. These indirect values reflect the regional spending that coal producers must undertake with other regional merchants in order to produce the quantity of coal demanded. The third value in each row captures

the economic activity that is "induced" as household incomes increase with new local economic activity. Each row also contains the total amount of economic activity resulting from the initial demand. While the IMPLAN simulation software used to generate these estimates provide results for over 500 sectors or industries, all figures are summed at the one digit Standard Industrial Classification (SIC) code level.

As would be expected, the direct effects of the demand for West Virginia's coal on employment, compensation, and output fall entirely within the mining sector. The indirect and induced effects, however, fall across a number of industrial groups. With regard to employment, the services, trade, and TCPU sectors have the largest number of jobs that are indirectly related to coal production.² The same pattern is generally true with respect to employee compensation. However, with the exception of the utilities sector, the indirect and induced economic impacts associated with coal production are smaller for compensation than for employment. This result reflects the fact that coal industry jobs pay salaries that are high relative to the wages and salaries paid by the retail trade and services sectors.

In total for 1996, more than 60,000 workers, earning more than \$2.6 billion in compensation were employed in jobs that were directly or indirectly tied to the demand for West Virginia coal. Total output for the state was also increased across all commercial sectors, totaling more than \$6.2 billion during that year. Understandably, more than two-thirds of the aggregate coal-related output figure accrues directly within the mining of coal. Nonetheless, the manufacturing, trade, services, financial, and transportation/utilities sectors all were significantly impacted.

The economic activity described above provides much of West Virginia's State tax base. Fully accounting for all of the tax revenues that are traceable to coal production is beyond the scope of the current analysis. However, some conservatively derived approximations are provided in Table 3.

Like most West Virginia business, the coal industry is subject to several general business taxes. These include the Corporate Net Income Tax (CNIT), the Business Fran-

chise Tax, real property tax, and personal property tax on equipment and inventories. Additionally, the coal industry and other extractive industries pay a State Severance Tax on gross receipts. Finally, coal producers pay a number of specific taxes faced by no other industry in the State.

Table 3 suggests the coal industry directly paid over \$193 million in 1996. This figure, however, clearly understates the value of industry payments for two reasons. First, the unavailability of the appropriate data makes it impossible to accurately estimate the value of corporate property taxes paid by the industry. Secondly, many of the industry's profits accrue to holding companies, so that CNIT taxes paid on those profits are not reflected in the Table 3 total.

In addition to the business taxes paid directly by the coal industry, its purchases of goods and services from other West Virginia vendors leads these vendors to maintain operations within the State and helps them to generate, otherwise unavailable, profits. Taxes on additional indi-

rect equity and profits helped the State to collect an additional \$8 million in FY 1996-97 revenues.³

Just as West Virginia firms pay business taxes on coal-related activity, residents pay State taxes on both the coal-related income they receive and the purchases they make

with that income. These tax payments are also summarized in Table 3. Once again, the figures describing personal tax payments understate the impact of coal-related additions to total tax revenues. In the absence of detailed information describing Personal Income Tax payments, the only available means of estimating the payments directly and indirectly attributable to coal production entailed calculating a state-wide average effective rate and applying that rate to

coal-related incomes. Because coal-related incomes tend to be greater than average incomes and, therefore, are more heavily taxed, the current method understates the value of the Personal Income Tax payments that are attributable to coal-related incomes.

"For FY 1996-97 the total of all estimated coal-related tax payments was nearly \$368 million..."

*Table 1.
Recent Trends in West Virginia Coal Production, Pricing and Employment*

<u>YEAR</u>	<u>WV TONS TOTAL (x 1,000)</u>	<u>REAL MINE-MOUTH PRICE / TON (92 \$)</u>	<u>DIRECT MINING EMPLOYMENT</u>	<u>TONS PER MINING EMPLOYEE</u>
1980	121,584	\$46.00	53,403	2,277
1987	136,676	\$35.08	29,548	4,626
1992	162,164	\$28.15	26,017	6,233
1993	130,525	\$26.88	22,979	5,680
1994	161,776	\$26.14	21,816	7,415
1995	162,997	\$25.26	21,334	7,640
1996	170,443	\$24.23	21,557	7,907
% Change	40%	-47%	-62%	272%

Source: US Energy Information Administration

Table 2.
The State-Wide Economic Impacts of the Demand for Coal

EMPLOYMENT				
SECTOR	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	—	103	463	566
Mining	20,121	1,301	113	21,535
Construction	—	591	601	1,192
Manufacturing	—	824	829	1,653
TCPU	—	1,825	1,016	2,841
Trade	—	1,811	12,594	14,405
FIRE	—	728	1,855	2,584
Services	—	3,396	11,962	15,358
Government	—	66	278	344
Other	—	—	539	539
Total	20,121	10,645	30,251	61,017

COMPENSATION (1996 \$ ' 1,000)

SECTOR	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	—	1,063	2,153	3,216
Mining	1,792,665	96,131	1,944	1,890,740
Construction	—	13,125	12,940	26,064
Manufacturing	—	30,869	22,542	53,411
TCPU	—	71,164	35,395	106,559
Trade	—	43,195	168,124	211,319
FIRE	—	11,427	37,697	49,124
Services	—	49,642	231,072	280,714
Government	—	2,148	9,005	11,153
Other	—	—	3,642	3,642
Total	1,792,665	318,763	524,514	2,635,943

OUTPUT (1996 \$ ' 1,000)

SECTOR	DIRECT	INDIRECT	INDUCED	TOTAL
Agriculture	—	1,560	11,998	13,558
Mining	4,107,600	226,773	8,393	4,342,765
Construction	—	26,864	29,536	56,400
Manufacturing	—	126,017	93,157	219,174
TCPU	—	212,169	125,323	337,492
Trade	—	94,068	314,521	408,590
FIRE	—	56,520	266,901	323,421
Services	—	99,826	414,573	514,400
Government	—	4,771	21,293	26,064
Other	—	—	2,893	2,893
Total	4,107,600	848,568	1,288,589	6,244,756

Source: CBER calculations based on industry statistics and IMPLAN economic simulation software.

For FY 1996-97 the total of all estimated coal-related tax payments was nearly \$368 million, or roughly 13% of the State taxes collected over that period. Very clearly the State's fiscal opportunities are currently linked to economic conditions in the coal industry. It would be both inappropriate and inaccurate, however, to suggest that the converse is not also true. The coal industry, its employees, and those West Virginia firms with which it does business place incremental infrastructure demands on the State. Moreover, the industry, by its nature, extracts resources from West Virginia, severing residents from the value of those resources. In short, the coal industry relies on the State of West Virginia for a great deal.

Ideally, the taxes paid by any entity – including the coal industry – should be functionally related to the relative burden that entity places on the State. It would seem reasonable, then, to tally the value of what the coal industry receives from the State and compare that figure to the \$368 million in tax revenues the industry directly or indirectly generates each year. However, fully evaluating the equity of the taxes levied against the coal-related segment of the West Virginia economy is far beyond the scope of the current analysis. Suffice it to say that whether one judges the magnitude of coal-related taxes to be entirely excessive or woefully inadequate, there exists between the industry and the State of West Virginia a formidable fiscal link that cannot reasonably be ignored in any decision-making process.

Looking Toward the 21st Century

While the preceding section helped to quantify the importance of West Virginia coal to the overall State economy, the introduction alluded to ongoing changes that are altering the markets in which this coal is sold. These changes are, in large, directly attributable to two root causes – the imposition of continually more stringent federal environmental standards and restructuring within the electric utility industry. Both policy initiatives, while independent in concept and purpose, are working simultaneously to heighten competition in all energy markets across the entirety of the U.S.

To date, 12 states have enacted statutes designed with this aim. Many other states, as well as federal lawmakers, continue to actively study the issue.⁴

According to the federal Energy Information Administration, the fundamental restructuring now underway in both wholesale and retail electricity markets is expected to create “merchant” generating plants with no guaranteed volume of future sales. In such markets:⁵

...only those generators with costs low enough to produce electricity at market prices, as opposed to costs that are simply low enough to meet regulatory oversight, will be able to sell electricity profitably and remain viable.

Moreover, this new found attention to costs coupled with uncertain output markets will almost certainly alter the patterns by which generating facilities are dispatched and the quantities and mix of fuels demanded. High-cost facilities will be modified or abandoned. Generating firms will also push for lower mine-mouth and delivered coal prices in combination with more flexible and less lengthy supply contracts. These pressures have already led to lower fuel costs and shorter contract durations. Again, according to the EIA, real fuel prices per megawatt-hour fell by 21% between 1991 and 1996.⁶

It is precisely this form of market power that has driven the decline in mine-mouth prices described above. Moreover, the movement toward continually lower (albeit increasingly volatile) real coal prices appears to be accelerating rather than abating. It seems the competitive pressures that restructuring is bringing to the electric utility industry are quickly translating into additional competitive pressure for fuel suppliers. Only those fuel suppliers who can produce at the lowest possible cost have any assurance of survival.

Ultimately, it is too soon to know how increased competition in the electric power industry will effect West Virginia's coal producers. Southern West Virginia's coal is both high in BTU content and low in sulfur and the State's coal production is relatively close to a large number of generating facilities. On the other hand, coal can be produced very cheaply in other regions and transportation – particularly from western coal producing regions is extremely inexpensive, so that the advantages enjoyed by central Appalachian coal by no means insulate it from the competitive process.

While the impacts of electric utility restructuring on coal producing regions are, as yet, largely unknown, the effects of clean air legislation on fuel usage patterns have made themselves particularly clear. The imposition of more stringent federal air quality standards added a new dimension to overall fuel costs and, thereby, radically altered coal distribution patterns.

The imposition of stricter air quality standards has benefited western coal producers who have, in turn, been quick to cease the economies of scale that accompanied a heightened demand for western coal. Powder River Basin (PRB) coal is extremely cheap to mine and is transported at per ton-mile rail rates that are often one third of the rates charged for the movement of Appalachian coal. Thus, the remoteness of the production locations in Wyoming and Montana is largely offset by production and transport economies and by the coals' low sulfur content.

Central Appalachian coal producers have fared well in the process to date. While market share has been lost to

PRB coal in the Mississippi and Illinois basins, this loss has been more than offset by gains in the northeast and mid-Atlantic regions. Indeed, the EIA reports that between 1988 and 1993 alone, central Appalachia increased its market share in the mid-Atlantic from 12% to 20%.

The future impact of clean air standards on the demand for West Virginia's coal may depend heavily on subsequent changes in the level of these standards. Currently, blending low cost, low sulfur PRB coal with high sulfur, high BTU Illinois basin or northern Appalachian coal is a compliance strategy that competes well with the use of the high BTU, low sulfur, but relatively expensive coal produced in southern West Virginia. Stricter standards may significantly alter this competitive relationship. Many experts believe that more stringent standards will render blending ineffective as a compliance strategy, so that numerous generators will increasingly opt for sulfur removal (scrubber) technologies if more strict standards are forthcoming. Under such a scenario, the low sulfur West Virginia coal would no longer command a premium, leav-

Table 3
1996-97 Coal-Related Tax Payments
(All Dollar Amounts in Thousands)

TAX ITEM	COAL INDUSTRY PAYMENTS	INDUSTRY RELATED PAYMENTS	TOTAL	PERCENT OF ITEM REVENUES	PERCENT OF TOTAL STATE REVENUES
Business Taxes					
Severance	181,800.0	—	181,800.0	94.25%	5.10%
Mining Reclamation	5,000.0	—	5,000.0	100.00%	0.14%
Deep Mining	3,300.0	—	3,300.0	100.00%	0.09%
CNIT	1,911.7	5,515.8	7,427.5	4.62%	0.21%
Business Franchise	1,706.6	3,111.6	4,818.2	5.32%	0.14%
All Business Taxes	193,718.3	8,627.4	202,345.7	—	5.67%
Personal Taxes					
Personal Income	—	70,551.0	70,551.0	7.46%	1.98%
Sales and Use	—	74,905.2	74,905.2	8.78%	2.10%
Individual Property	—	20,651.0	20,651.0	8.86%	0.58%
All Taxes					
Total	193,718.3	174,734.6	36,8452.9	—	12.96%

ing the State's producers to compete on a more level footing with lower cost producers of high sulfur products.⁷

Conclusions

Mountaintop mining represents an extremely controversial blend of environmental and economic issues. West Virginia's policy makers are unlikely to find a simple or universally appealing set of solutions. Although the foregoing analysis offers nothing with regard to outstanding environmental matters, it does make several economic points abundantly clear.

- Coal mining accounts for roughly 17% of all economic activity within the State as measured by value added. Moreover, in specific, isolated southern West Virginia counties, coal production represents the only currently available economic opportunity.
- While the coal industry receives significant benefits from the State, it also directly provides more than 5% of all state revenues and stimulates the economic activity that is responsible for an additional 5% of annual tax collections. Thus, there is currently a significant link between the coal industry's prosperity and the State's fiscal opportunities.
- The coal produced in southern West Virginia faces few domestic rivals in terms of its quality. However, the region's producers are disadvantaged by relatively high transportation and production costs.
- Historically stable fuel markets may be expected to grow increasingly volatile as real prices continue to decline in the wake of electric utility restructuring.

Mountaintop mining represents an extremely controversial blend of environmental and economic issues. West Virginia's policy makers are unlikely to find a simple or universally appealing set of solutions.

- Stricter clean air standards have advantaged West Virginia coal for the time being. However, any further tightening of these standards may ultimately erode the premium currently associated with low sulfur coal.

In short, there is nothing within the current analysis that eases the burden currently faced by policy-makers. To the contrary, this admittedly abbreviated examination suggests that a significant portion of the State's economic well-being depends upon some of the nation's most rapidly evolving and increasingly volatile energy markets.

1. Industry estimates actually suggest that the 1947 quantity was surpassed in 1997 when total output is estimated to have been 182 million tons. However, at the time of the current analysis, this figure had not been confirmed by the Energy Information Administration
2. TCPU refers to the Transportation, Communications, and Public Utilities sector.
3. Corporate net profits and equity estimates were based on the sum of indirect and induced output relative to total State output for the period.
4. The states that have enacted legislation intended to bring about retail-level competition in markets for electricity include California, Illinois, Maine, Massachusetts, Montana, New Hampshire, Oklahoma, Pennsylvania, Rhode Island, and Virginia.
5. See Challenges of Electric Power Industry Restructuring for Fuel Suppliers, U.S. Department of Energy, Energy Information Administration, Washington, DC, September, 1998, p. 5.
6. See EIA, p. 6.
7. For a comprehensive analysis of the effects of clean air legislation on energy markets see Energy Policy Act – Transportation Rate Study: Interim Report on Coal Transportation, U.S. Department of Transportation, Energy Information Administration, Washington, D.C., October, 1995.

The Impact of Y2K in West Virginia

by Michael J. Hicks

As the clock rolls over at January 1st, 2000 many West Virginians will feel the impact of more than just celebratory champagne. Throughout the state, computer software which relies on date specific information are subject to failure; the well known Y2K bug. The problem stems from some older software's inability to interpret the last two digits in the year as 2000, and instead erroneously interpret the two-digit entry as 1900. This problem may also affect some electronics with embedded computer chips such as microwave ovens and clocks. Forecasts of the combined impacts of these potential failures range from the apocalyptic to the benign. The impact of the Y2K problem will be felt in businesses, local, state and federal institutions and worldwide economic stability. We believe the problem will be noticeable, but small; and result in only minor disruptions in the State.

Private Companies and Y2K

Large firms and corporations which rely on computing networks for parts, service, data analysis and record keeping have made tremendous strides in fixing the Y2K problem. Computer programmers have found continual (and lucrative) work reviewing the software code that enables firms to continue to operate smoothly. Because firms fear lost revenues or increased costs, most have proceeded smoothly with Y2K preparation. The U.S. banking system is very prepared for potential Y2K problems. Indeed, most business analysts believe that American business will not be seriously affected by internal Y2K problems.

Small firms, which may not have the resources to test and upgrade their computer systems, are particularly vulnerable to the Y2K bug. Problems these firms may encounter include inventory shortages or surpluses and large scale billing errors. Firms that electronically generate orders may find that systems fail, and firms that rely on electronic inventory management systems may need to carefully scrutinize these programs. Fortunately, Y2K test software is now available at virtually all office supply and computer stores. Software firms are also offering a variety of Y2K compatible products that should be available for most commercial applications by year's end. Firms that have pur-

chased specialized or custom software face the greatest challenge. Dental and Physician offices are expected to be especially effected since much of the software they currently use is customized and date sensitive. Again, it is important to point out that this will not affect dental or medical care, but it may mean that patients won't receive a timely appointment reminder card from their family dentist. While failures of these systems are unpleasant for the firms and their customers, they fall far short of a major crisis.

For three reasons public utilities may present a special problem. First, since these firms are regulated, they may not have adequate funds to dedicate to Y2K preparations. Second, since these firms are typically regional monopolies, they have little fear of competition should customers become unhappy with service interruptions. Third, a potential service disruption in utilities could affect virtually everyone else. Luckily, most of these systems can be operated manually. Also, it appears that most electrical, gas, oil, sanitation and water works have made great strides in preparing systems and have in place existing crisis contingency plans. The North American Electric Reliability Council reports that 86 percent of system assessments had been completed by Autumn of 1998, with 38 percent having already successfully tested their systems. The majority of the remainder projected for testing by July 1999. Since public utilities regularly prepare for natural disasters their contingency planning is well developed. Indeed, no other sector of the U.S. economy is as prepared for emergencies and disasters as are our utility companies. We anticipate few, if any service interruptions in utilities.

Local Government and Y2K

West Virginia's local governments: fire, police and water supply use computers for a wide variety of tasks. The systems they employ range from advanced 911 emergency systems to maintenance records for police cruisers. Jail systems, street lights, ball park scoring systems and a variety of other local services may be affected by the Y2K problem. However, most of the software used will not fail at the turn of the century. Wordprocessors, spreadsheets and most database programs will continue to operate. Few computers will simply stop working at the millennium, they merely misinterpret a date. This may lead to billing errors for local water service, inventory shortages at maintenance facilities and difficulty in paying employees. Schools may

have graduation and course dates read incorrectly on transcripts or may potentially schedule late 20th Century History classes for Spring Semester 1900 (a superb forecasting feat). At the local level, availability of funds are the greatest inhibition to timely correction of the Y2K problem. However, a recent survey revealed that 75 percent of U.S. counties estimated Y2K compliance costs at below \$100,000. This sum, though high, is not an unmanageable figure for most West Virginia Counties. The U.S. Conference of Mayors found that by Spring 1999, nearly all cities had in place a Y2K contingency plan, and had prepared the majority of critical systems. They estimated total U.S. city expenditures on Y2K as \$296 million, or less than .005 percent of U.S. GDP. Luckily, the availability of Y2K compatible software to upgrade current systems is improving.

Y2K Impact on WV's State Government

State government has responded to the Y2K problem through a variety of planning and contingency options. The State has been a leader in the U.S. in Y2K preparation, setting December 31st 1998 as a deadline for system upgrade. As of that date, 78 percent of all systems, and virtually all of the State's critical systems had been upgraded. With a \$5 million budget and a staff of 2, the Y2K compliance office has made enormous progress. The Director of the Division of Information Services and Communications (D,I,S & C), Mike Slater, who also serves as the State's Y2K coordinator credits information managers in each department for the early compliance. Clearly, West Virginia's coordinated Y2K planning has been excellent. In comparison, Ohio reported a budget of \$61 million and a staff of more than 300, but had completed only 70 percent of the project by the December 31st 1998. Kentucky reported a mission critical completion of 80% of its systems with a \$6.7 million budget and 33 employees. In West Virginia, of the 61 critical applications, 46 were rendered Y2K compliant by April 30, with the remainder scheduled for completion by Sept. 30, 1999. To aid in the compliance effort, the D,I,S&C maintains a Y2K test partition so that agencies that rely on mainframe systems may safely test them for compliance. Added to the compliance effort are important LAN, desktop and non-critical systems that agencies have struggled to make compliant long before January 1, 2000.

West Virginia's Y2K preparations are nearly fully complete and our State appears to be among the best prepared in the nation.

The majority of the delays experienced by state agencies involved slower than expected contractor performance, intentional delays in order to bring new systems on line or delays designed to permit interoperability with federal systems. West Virginia's Y2K preparations are nearly fully complete and our State appears to be among the best prepared in the nation. The Y2K compliance work in the State should be a real source of pride for citizens and a model for effective and efficient planning.

Y2K and the Federal Government

The problems associated with the millennium bug are much greater at the federal level than the state level. Federal entitlement programs such as Social Security, Medicare and Medicaid, as well as federal military, civil service and railroad retirement systems all depend on database programs that require date specific information. Fortunately, these systems have been and continue to be closely scrutinized for Y2K compliance.

Federal military, aviation and affiliated systems present an additional safety concern. The safety/security of nuclear weapons, early warning and aviation radar and global positioning systems present special problems to military and aviation officials. To this these agencies must prepare for potential disruptions in fuel supply and replacement parts, the supply of which are managed by computer systems. As of March 31st, 1999 the Federal Government had reported 90 percent compliance, with virtually all of its critical systems Y2K ready. Public confidence in the ability of the Federal Aviation Administration to prepare for the New Year has been raised by the announcement that the head of the FAA, Jane Garvey, will be in the air on a regularly scheduled commercial flight as the clock turns midnight, Greenwich mean time (the standard international aviation time). At least one airline company, Virgin Atlantic, has canceled all flights over midnight January 1st 2000; however, this was more likely due to low revenues than a fear of the Y2K bug.

Financial systems seem to be well prepared. The Security and Exchange Commission required registered broker-dealers to file reports regarding their Year 2000 ef-

forts by August 31, 1998. Of broker-dealer firms, 83 percent have a written Y2K plan, while 30 percent have completed testing on critical systems, and 51 percent have developed contingency plans for potential Y2K failures. Virtually every Federal Agency from the Federal Emergency Management Agency to the Office of Thrift Supervision has implemented Y2K contingency plans that include software and hardware updating. We believe the U.S. government will have corrected the Y2K problem in all critical, and virtually all non-critical systems by late Autumn, 1999.

Y2K in the World

Few foreign countries are as prepared as the U.S. to deal with the potential problems caused by the Y2K bug. Fortunately, nations that have not made extensive computer upgrades for the Y2K problem are not as computer dependent as the United States. Concerns about foreign airport facilities and airspace management seem distant to citizens of West Virginia, but present real problems when they interfere with inputs to the state's production and tourism. Fortunately, the impact of this should be rather small here in the State. Tourism dollars spent in West Virginia in late December and January are not nearly as dependent on air travel as in countries such as Jamaica and the Bahamas. Foreign governments and businesses are making progress

towards correcting the Y2K problem. In China, the heads of each of the state owned airline industries have been ordered to be on scheduled flights at the stroke of midnight on New Years's. This extreme motivational method will certainly spawn rigorous compliance efforts in that industry!

The World Bank and other international agencies have offered low cost loans and technical expertise to assist developing countries prepare for the Y2K problem. While these agencies have been of great assistance, the greatest danger of Y2K to the United States' economic security and stability lies in potential failure of foreign, not domestic computer systems that safeguard weapons, operate power grids and manage airspace.

Unintended Consequences

At home, the biggest potential problem we face with Y2K is an unhealthy overreaction. Or, as Franklin D. Roosevelt said, "the only thing we have to fear is fear itself". Demands on the financial and logistical systems in the U.S. could disrupt service in a way that the Y2K problem never will. The problem is exacerbated by extremist rhetoric and fear of the unknown. Indeed, the Y2K problem has spawned a mini-industry of doomsayers and survivalists. Overreac-

*Table 4
West Virginia's State Government Y2K Compliance*

Department/Agency	# of Critical Applications	Number Y2K Compliant	Scheduled Completion of Remaining Systems
Auditors Office	2	All	
Department of Administration	7	All	
Department of Education	2	All	
Department of Education and The Arts, WVNET	5	All	
Library Commission	2	All	
Department of Health and Human Resources	7	3	3 of four remaining to be completed June, 1999; Final system (Adult Services will be merged with Y2K compatible FACTS by Sept., 1999
Department of Military Affairs and Public Safety	5	3	1 remaining system undergoing testing in June, 1999, final system (Inmate Housing Billing System) scheduled for completion in Oct., 1999
Department of Tax and Revenues	9	6	3 remaining systems scheduled for compliance by July 1,1999
Department of Transportation	7	2	Both remaining systems scheduled for compliance by June 30, 1999
Bureau of Employment Programs	7	All	
Department of Environmental Protection	1	All	
Attorney General's Office	1	0	LAN system to be completed by June 30, 1999
Secretary of State's Office	3	2	Software replacement scheduled for June, 1999
Treasurer's Office	5	3	Phoenix Funds system now being tested, Receipts Processing System scheduled for November 1, 1999

Source: *Division of Information Services and Communications*

tion by individuals and firms could lead to some significant problems. Luckily, many of these have been considered in contingency planning.

For example, the U.S. banking system which is regulated by several federal agencies and the Federal Reserve, has almost fully completed its preparation for a potential Y2K problem. Special issues of concern are the large amount of electronic funds transfers and availability of funds at local banks, and how this may encourage individual hoarding of currency. Since U.S. banks have a very low reserve requirement (below 2% on average), the rapid withdrawal of cash could seriously contract the supply of money used for transactions. This unintended consequence could lead to a severe economic contraction if steps were not taken to prevent the ill effects of hoarding. Fortunately, the U.S. Treasury has in place a contingency plan to deal with this potential liquidity problem. The Treasury will have in reserve sufficient currency to account for a currency withdrawal of over \$1,250 in each U.S. household. The Treasury has also set aside \$50 billion for foreign demands on U.S. currency. These steps, coupled with a special lending process to insure domestic bank stability over the New Year, have greatly reduced the economic threat of Y2K.

Internationally, banks may be ill-prepared to face liquidity demands as well as the technical problems associated with Y2K. It is not clear how well international financial institutions will respond to Y2K. However, the more dependant banking systems are on computers, the greater their preparations are likely to be.

Firms that anticipate inventory shortages may order and hold excess inventories in the months leading up to January 2000. This excessive ordering of inventories may lead to transient inflationary pressures which could spawn an interest rate hike by the Federal Reserve. This would slow output and place upward pressure on the unemployment rate. If no supply failures occur, excess inventories may lead to rapid reductions in orders for intermediate goods. This suggests a real danger for the economy. A reduction of new orders of even one percent would likely slow the economy, but not enough to spawn even a mild recession. Likewise, fear of the Y2K problem and a potential recession could destabilize consumer confidence leading to a reduction in household demand for goods and services and a scaling back of production by firms. Expectations of financial market failures, despite the repeated successful

More Y2K Information

West Virginia's Site: <http://www.state.wv.us/y2k>

A Resource Link: <http://y2k.comco.org/>

Free Compliance Software: <http://hughesnet.net/>

The President's Council on Y2K: <http://www.y2k.gov>

A Listing of Y2K Resources:
<http://www.realvoices.com/phonemessages.html>

testing of most major stock exchanges, could lead to rapid stock devaluations. The resulting loss of wealth could lead to spending decreases, lower consumption and a general slowdown in production. If this occurs higher unemployment levels should be expected.

In addition to these unintended consequences, investment in new software and hardware in anticipation of the Y2K problem may slow purchase of other goods and services by firms. In essence, the investment of funds in new computing software, when the older systems were adequate for most tasks may not be an economically efficient allocation of assets. This further strains the system. So, expenditures on services to fix a problem instead of increasing production does not directly benefit the economy.

Conclusions

The Y2K problem most challenges the State in terms of local agencies and small businesses. Here, systems disruptions may be costly and inconvenient. At the federal level, wildly fluctuating market behavior, which is neither rational nor predictable is the greatest concern. At the international level, instability of governments and fluctuating supplies of products present a potential concern to manufacturers and consumers. While the potential for statewide problems or a nationwide recession exist, we feel it is minimal. With the exception of truly unknowable effects of foreign Y2K related problems, it appears the Y2K bug will cause at worst a mild disruption of services and a few weeks of unusual activity in the financial markets. We believe the Y2K problem will be no more disruptive than a strong winter storm in the region, and be much less costly than the 1993 "Storm of the Century". We will, of course, update our analysis of the Y2K problem in our First Quarter 1900 edition of the *Review*.

Tax Reform and Direct Household Taxes

By Mark L. Burton and Calvin A. Kent

As Legislators and other policy-makers continue to study the tax reforms proposed by Governor’s Commission on Fair Taxation, CBER has prepared and released an economic evaluation of the proposals’ projected direct impacts on West Virginia households.

Under the proposals, West Virginia families will pay on average 2.3 percent less in personal taxes than under the current system. This average, however, obscures the rather significant impact the proposed reforms would have on households with more modest incomes. The reductions range from almost 4 percent for those with incomes below \$10,000, to 22.5 percent for those with family incomes between 10,000 and \$20,000. Families with incomes between \$20,000 and \$30,000 would see personal tax reductions of 16.74 percent while those with incomes between \$30,000 and \$40,000 would see declines of 6.7 percent. When family income rises above \$50,000 personal taxes will experience slight increases,

These results are largely attributable to the elimination of poverty level income from the personal income tax. However, the analysis also includes the impact of replacing the consumer sales tax with a broader based general excise tax, the elimination of the personal property tax on automobiles, the elimination of the automobile privilege tax

and the extension of the tobacco excise tax to all tobacco products. The primary reason for the decrease in taxes among the lower and lower middle income groups is due to the changes in the state’s personal income tax which has been redesigned to eliminate the current taxes paid by those who work at lower paying jobs.

The calculations do not include changes in taxes levied on business such as the elimination of the corporate net income tax, the imposition of the single business tax, the repeal of the health care provider tax, the elimination of the state B&O tax, the elimination of the business franchise tax and the changes in the insurance premium tax. These taxes were not included as it is impossible to determine where the ultimate burden of taxes levied on business rests.

The data used in making these calculations comes from the Bureau of Labor Statistics, Division of Consumer Expenditure Surveys which details spending by family income level for those living in the Southern states. Data on personal income tax payments were supplied by the West Virginia Department of Tax and Revenue which used the IRS personal income tax filings for the state.

Table 5
Direct Household Impacts of Agenda for Fair Taxation
by Income Group

	LESS THAN \$10,000	\$10,000 TO \$19,999	\$20,000 TO \$29,999	\$30,000 TO \$49,999	\$50,000 AND GREATER
Number of Households	184,249	158,667	120,151	115,523	126,549
Present West Virginia Taxes	\$667	\$1,200	\$1,937	\$2,764	\$5,945
Proposed West Virginia Taxes	\$640	\$930	\$1,613	\$2,579	\$6,509
Change	-\$26	-\$270	-\$324	-\$185	\$564
Percentage Change	-3.97%	-22.48%	-16.74%	-6.68%	9.48%
Cumulative % Change	-3.97%	-15.27%	-15.89%	-12.49%	-2.28%

West Virginia and the International Economy

by Michael J. Hicks

Part One: International Trade

The international economy impacts West Virginia in two broad areas: capital flows and trade in goods and services. Both of these have been subject to much political and news scrutiny in the past decade. This close attention has been due, in part, to the passage of the *North American Free Trade Agreement* (NAFTA) and the *General Agreement on Tariffs and Trade* (GATT), both of which significantly reduced tariffs, quotas and other restrictions on international trade. More recently, deepening foreign recessions and currency crises along the Asian Rim, South America and Russia have deepened worries about the stability of international markets. In the first of a three part series, we will focus on the effects of freer trade on West Virginians. In our next issue, we will address the effects of the recent currency crises and foreign recessions on our state and one article that addresses the impact of steel imports on our state.

Free Trade and Prosperity

The attachment of economists to free trade has a long and hallowed history. The principle that the benefits of free trade outweigh the costs has been consistently illustrated in economic history and research. The theory on which free trade is based is the idea of *comparative advantage*. This theory is best exemplified by the division of labor in an office. Each person, due to his or her natural abilities, training and education or temperament is better suited to different tasks. So, in our office one person handles accounts and administration, another is the editor, yet another handles statistical analysis and computing resources while another performs economic analysis. Each of us could learn the jobs of the other, but for various reasons we are much less efficient at the other jobs. So, naturally, it is more efficient for us to take advantage of these divisions of labor. This theory holds even when

one person is better at two tasks than any other—*absolute advantage*. One person may be the best editor and computing specialist, but by focusing on the job that they are most efficient at performing the overall production of the office increases.

Free Trade and Job Gains

NAFTA was important to the United States, and received much less political opposition at home than it did in Canada or Mexico for the simple reason that the U.S. already permitted very free access to domestic markets. In effect, NAFTA reduced a relatively small number of U.S.

tariffs while eliminating huge barriers to entry in Mexico and Canada. Exports to Canada and Mexico grew enormously from the pre-NAFTA to post-NAFTA years, which began after 1995. See Figure 3.

While this increase in exports is not entirely due to NAFTA, the free trade agreement certainly had a profound positive effect on the

business environment. The net job gains are impressive. In 1994, the 39,200 West Virginian workers who produced goods and services for export produced on average \$23,995 worth of exports. From 1994 through 1998 the total exports to Canada and Mexico grew by \$253,184,000. This translates into roughly 10,550 new export related jobs.

Free Trade and Job Loss

The theories of *comparative* and *absolute advantage* are applicable to everything from homes and firms to nations and the world. However, economic theory and its implications are of little comfort to business owners or workers (in West Virginia and across the globe) affected by changes in the regulations governing international trade. The effects of freer trade do impact firms and employees that have benefitted from existing trade restrictions in the past. The primary effect of freer trade is lower domestic prices due to international competition that was absent when the industry was protected by tariffs. For firms that cannot meet the lower prices restructuring, relocating or closing are the inevitable options. Advocates of contin-

Goals of NAFTA

- Eliminate barriers to trade in goods and services among member nations
- Promote fair competition within the trade area
- Increase investment opportunities within the free trade area
- Protect intellectual property rights
- Create a framework for further steps to enhance the benefits of the agreement

ued barriers to trade such as quotas and tariffs have promoted the fallacy of downward spiraling wages to preserve the trade laws that benefit them. International competition will not cause a downward spiral of wages in West Virginia, since the productivity of our workers is so much higher than that of most foreign countries.

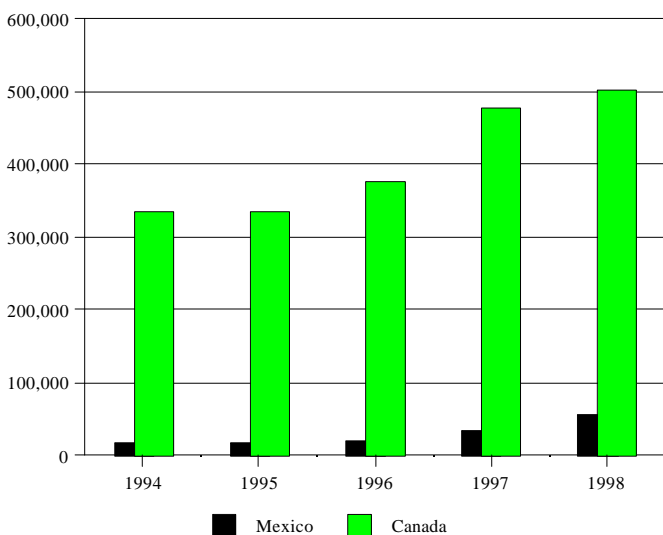
Take, for example, a contractor's choice of hiring a skilled master mason at \$15 per hour or three apprentices at \$5 per hour each. If the master mason can lay 300 bricks in a day, while each of the apprentices can lay 100 bricks a day then the contractor will be indifferent to the choice of the high or low skilled worker. But, if the master mason can lay 301 bricks per day *he then becomes the low cost worker*. It is output per dollar wages, not just wage rate itself that determines worker productivity. Here, the United States and West Virginia excel. The huge productivity advantage the United States enjoys over the rest of the world is evident in the per capita *Gross Domestic Product* which is higher than in any other nation (when adjusted for currency differences). This means that Americans and West Virginians may continue to enjoy high wages as long as productivity remains high. Significantly, NAFTA related job losses in this state have clustered among industries with lower productivity. As of early May, 1999 West Virginia lost six businesses and 350 jobs due to NAFTA, four of these firms were chemi-

cal and related product manufacturers. Two textile firms also relocated or closed eliminating another 90 jobs. Additional job losses occurred as firms in these industries downsized to become more productive. These job losses amounted to just over 900 positions statewide. Total NAFTA related job losses, as reported to the U.S. government amount to under 1500 positions statewide. This represents less than .18 % of all state jobs in 1999 and only 3.8% of the state's pre-NAFTA export related jobs.

Because NAFTA effected the U.S., Canada and Mexico, job losses in West Virginia could be attributed to either Canada and Mexico. Significantly, 35% of job losses were attributable to Canada and 37% to Mexico with the remainder not reported. Canada's wage costs are, for the most part, higher than the United States. This suggests that industries relocate to more productive areas, not just areas with lower wages. Natural resources, infrastructure, worker education and productivity affect firm location, wages alone do not.

Balanced against the loss of 1500 jobs attributed to NAFTA this means a net gain of over 9000 export related jobs in the past five years. Again, NAFTA alone did not cause all these new jobs, but if it contributed only 15% of the new positions it caused a net gain of new export related jobs in West Virginia. This is simply due to the higher productivity of workers in West Virginia relative to Mexico and Canada. Policies that improve the productivity of these workers will only improve the state's export standing.

Figure 1
Exports in Constant 1998 \$1,000's



Free Trade and Consumers

The effect of free trade is not limited to businesses and workers, it also benefits consumers. Free trade means lower priced goods and services, greater selection and better quality. Not only does free trade lower the cost of finished goods that are produced overseas, it also lowers the cost of inputs used by domestic producers. For example, the U.S. currently has in place restrictions on sugar imports. These barriers reduce domestic competition for sugar and lead to higher prices for firms that use sugar to produce food products. Some estimates suggest that the cost of producing candy and sodas in the U.S. could be reduced by as much as 50 percent if the sugar restrictions were lifted. Free trade imposes no significant costs on

consumers, only benefits, thus increasing the attractiveness of free trade policies.

Free Trade and the Environment

In a now famous memo the Secretary of the Treasury designate Lawrence Summers suggested that poorer nations would benefit from importing pollution from richer nations. Though the memo may have been a bit tongue-in-cheek it highlighted the fact that pollution is more acceptable to populations in poorer nations. With a 1998 per capita GDP of only \$380 India's citizens probably consider the environment a much lower priority than do U.S. citizens who enjoy a per capita GDP of \$27,590. Much opposition to NAFTA has focused on the detrimental effects of unfettered trade on the world's environment. This fear is greatly misplaced. Free trade leads to greater prosperity and a greater appreciation for the environment. In the jargon of economics, a clean environment is a luxury good, on which a greater proportion of income is spent as income rises. Indeed, it is likely that the average American

spends more on environmental clean-up and restoration than the average Indian makes in a given year. The tighter environmental regulations in the U.S. are the result of our prosperity. If we seek to extend environmental protection as a core value to other nations, it must be preceded by economic development, which is greatly enhanced by free trade.

West Virginia's Exports

West Virginia exports a variety of goods and services, among which mining, chemical production, forestry products and primary metal production are heavily represented. The manufacturing component of West Virginia's recent export history is illustrated in Table 6 and agricultural and commodity exports in Table 7.

Significant growth in exports continues to be a hallmark of West Virginia's economy, highlighting the international economy's growing importance in the State.

*Table 6
West Virginia's Manufactured Exports*

WEST VIRGINIA (NOMINAL \$)	1993	1994	1995	1996	1997
MANUFACTURES	550,860,829	637,322,594	708,357,132	820,206,223	867,727,855
Food Products	1,312,282	2,859,072	14,054,206	5,894,325	5,210,420
Tobacco Products	0	0	3,998,732	7,645	222,380
Textile Mill Products	4,621,148	3,711,911	3,693,666	4,895,815	7,064,221
Apparel	922,067	931,583	1,405,493	1,283,163	4,650,916
Lumber & Wood Products	29,505,733	38,203,333	37,573,703	45,627,493	61,133,819
Furniture & Fixtures	2,578,741	1,385,612	2,530,702	2,131,412	2,806,693
Paper Products	3,558,823	3,923,350	5,365,569	6,185,561	7,071,425
Printing & Publishing	1,543,472	2,087,264	3,175,267	1,044,256	655,675
Chemical Products	238,853,879	280,528,725	232,333,682	289,169,089	249,559,206
Refined Petroleum Products	676,165	7,011,257	3,348,819	8,804,420	9,293,594
Rubber & Plastic Products	15,036,440	11,337,070	10,783,217	11,578,701	9,134,468
Leather Products	313,943	306,687	239,998	3,349,133	1,505,682
Stone, Clay & Glass Products	6,553,654	15,929,676	30,067,340	31,707,484	28,938,473
Primary Metals	112,706,068	127,897,709	161,635,426	212,642,877	289,777,735
Fabricated Metal Products	11,753,464	13,312,993	18,247,917	18,287,093	16,580,668
Industrial Mach. & Computers	67,364,835	49,871,611	56,958,517	75,475,529	79,565,912
Electric & Electronic Equipment	8,981,388	8,697,395	15,726,079	19,481,516	30,466,483
Transportation Equipment	19,734,627	44,950,907	81,114,957	58,214,746	38,413,731
Scientific & Measuring Instruments	22,408,657	21,906,092	22,631,244	21,518,163	22,331,394
Miscellaneous Manufactures	1,109,751	1,166,940	2,068,415	1,768,733	2,181,350
Unidentified Manufactures	1,325,692	1,303,407	1,404,183	1,139,069	1,163,610

Where do our Products Go?

West Virginia, not surprisingly, exports most heavily to our closest neighbors. In 1998 the state exported more than \$25,000,000 to 9 nations. Figure 4 illustrates the proportion of these top export destinations in the state.

Among the states leading export regions were the Charleston and Huntington Metropolitan Statistical areas which ranked 113th and 172nd nationally among exporting cities. These are very respectable rankings given the size of these cities.

Lessons from Free Trade

Freer trade among nations both increases production and reduces production costs. While job losses have occurred as a result of freer trade they have been more than offset by job gains, especially since the implementation of NAFTA. Increased trade, especially exports, has added tremendously to West Virginia's economy in the last half of this decade. In our next issue

we will review the Asian flu, currency and capital flows and the effect of recent foreign recessions on our region's economic outlook

*Table 7
State Export Destinations*

COUNTRY	\$ (IN MILLIONS)	%
Canada	503,366	42.7%
UK	116,437	9.9%
Japan	115,178	9.8%
Mexico	55,805	4.7%
Belgium	48,487	4.1%
Brazil	45,055	3.8%
Italy	39,385	3.3%
Australia	27,210	2.3%
Netherlands	26,297	2.2%
Other	200,378	17.0%

*Table 8
West Virginia's Commodities and Agricultural Exports*

WEST VIRGINIA (NOMINAL \$)	1993	1994	1995	1996	1997
AGRICULTURAL & LIVESTOCK	3,609,061	6,102,934	12,266,949	5,912,213	7,989,088
Agricultural Products	1,433,635	3,798,951	7,395,134	1,450,736	1,662,526
Livestock & Livestock Products	2,175,426	2,303,983	4,871,815	4,461,477	6,326,562
OTHER COMMODITIES	199,606,842	297,216,420	377,312,541	391,806,081	423,100,219
Forestry Products	591,535	3,486,507	3,603,972	2,586,561	1,407,300
Fish & Other Marine Products	284,282	252,628	294,293	208,143	1,618,147
Metallic Ores & Concentrates	43,766	23,580	1,296,812	76,857	91,023
Bituminous Coal & Lignite	189,809,794	277,251,120	360,362,988	367,229,125	394,176,451
Crude Petroleum & Natural Gas	52,329	152,346	3,137	0	5,079,187
Nonmetallic Minerals	239,593	913,755	681,311	1,375,853	2,126,769
Scrap & Waste	3,132,978	2,649,791	4,046,735	2,854,053	3,003,140
Used Merchandise	468,428	524,544	836,965	803,382	2,018,984
Goods Imported & Returned Unchanged	4,618,851	11,644,539	5,883,781	16,254,084	13,274,337
Special Classification Provisions	365,286	317,610	302,547	418,023	304,881

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