
Joint Legislative Audit and Review Commission



Impact of Regulations on Virginia's Manufacturing Sector

Commission Briefing
October 10, 2006



Study Mandate

- SJR 360 (2005) directed JLARC staff to study the comparative burden of regulatory compliance on Virginia's manufacturing sector
 - Cost of compliance with federal and Virginia regulation
 - Compare Virginia's regulations to other mid-Atlantic and southern states
 - Compare Virginia's regulations for manufacturers to other business sectors

In This Presentation

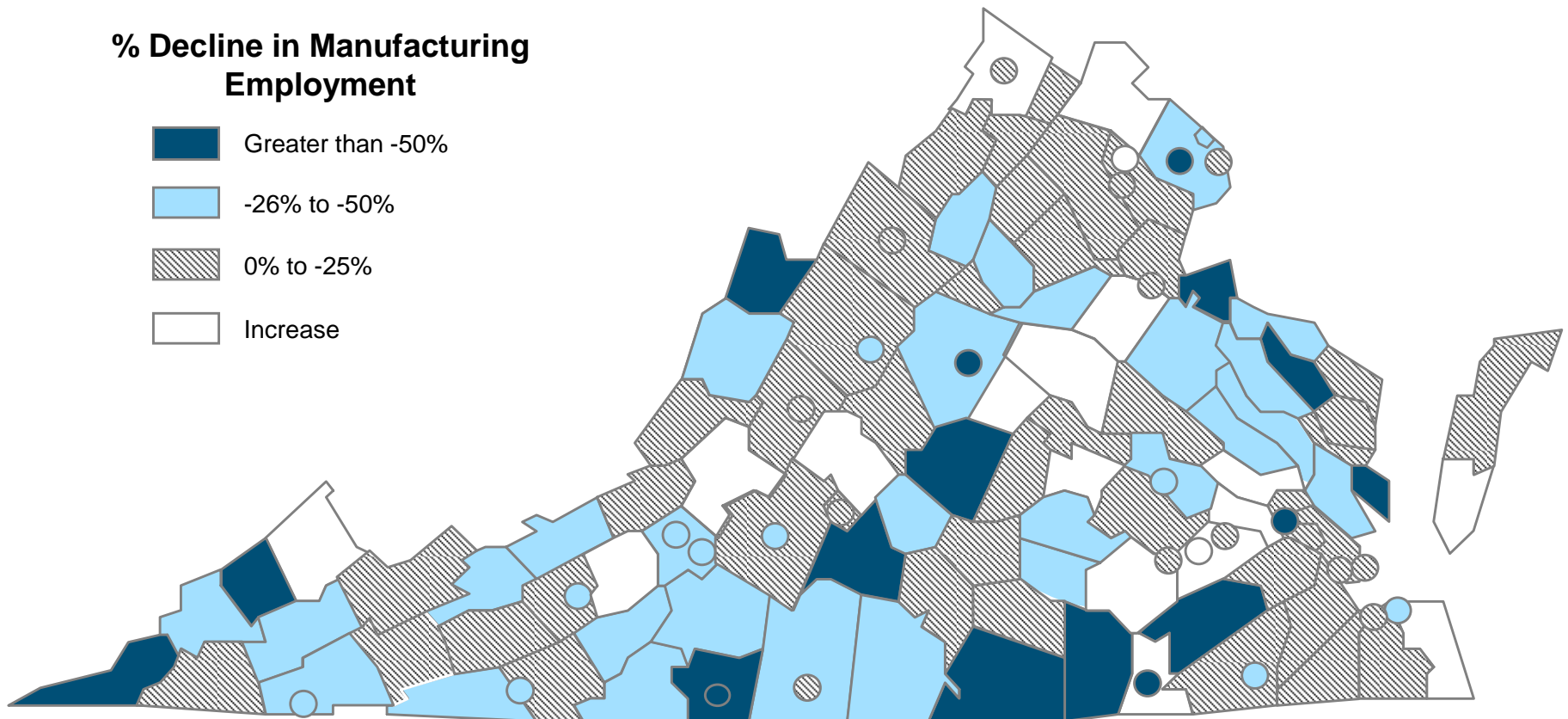
- Background
- Regulations, Impact, and Key Methods
- Compliance Costs
- Virginia Compared to Other States
- Conclusions



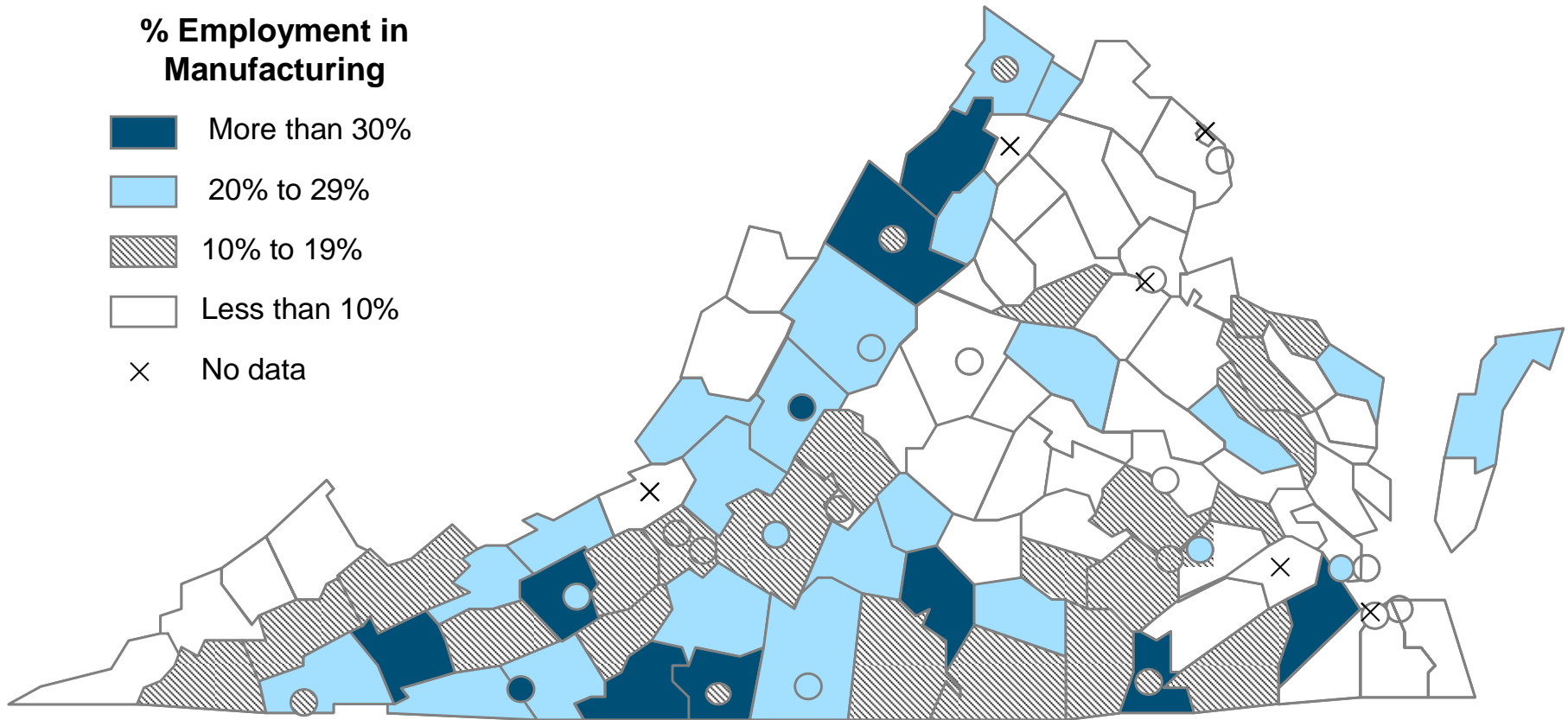
Virginia's Manufacturing Sector

- Virginia's manufacturing employment has declined
 - Since 1992, employment down 27% from 407,200 to 296,000
 - Most occurred during recession, but job loss has moderated
- Manufacturing is still important to Virginia's economy
 - Third largest business sector with 12% of State's employment
 - Nearly 6,000 manufacturing establishments
 - Sector value-added is about 15% of Virginia's Gross State Product

Most Localities Lost Manufacturing Employment Between 1997 and 2004



Southern and Western Localities Still Rely Heavily on Manufacturing for Jobs

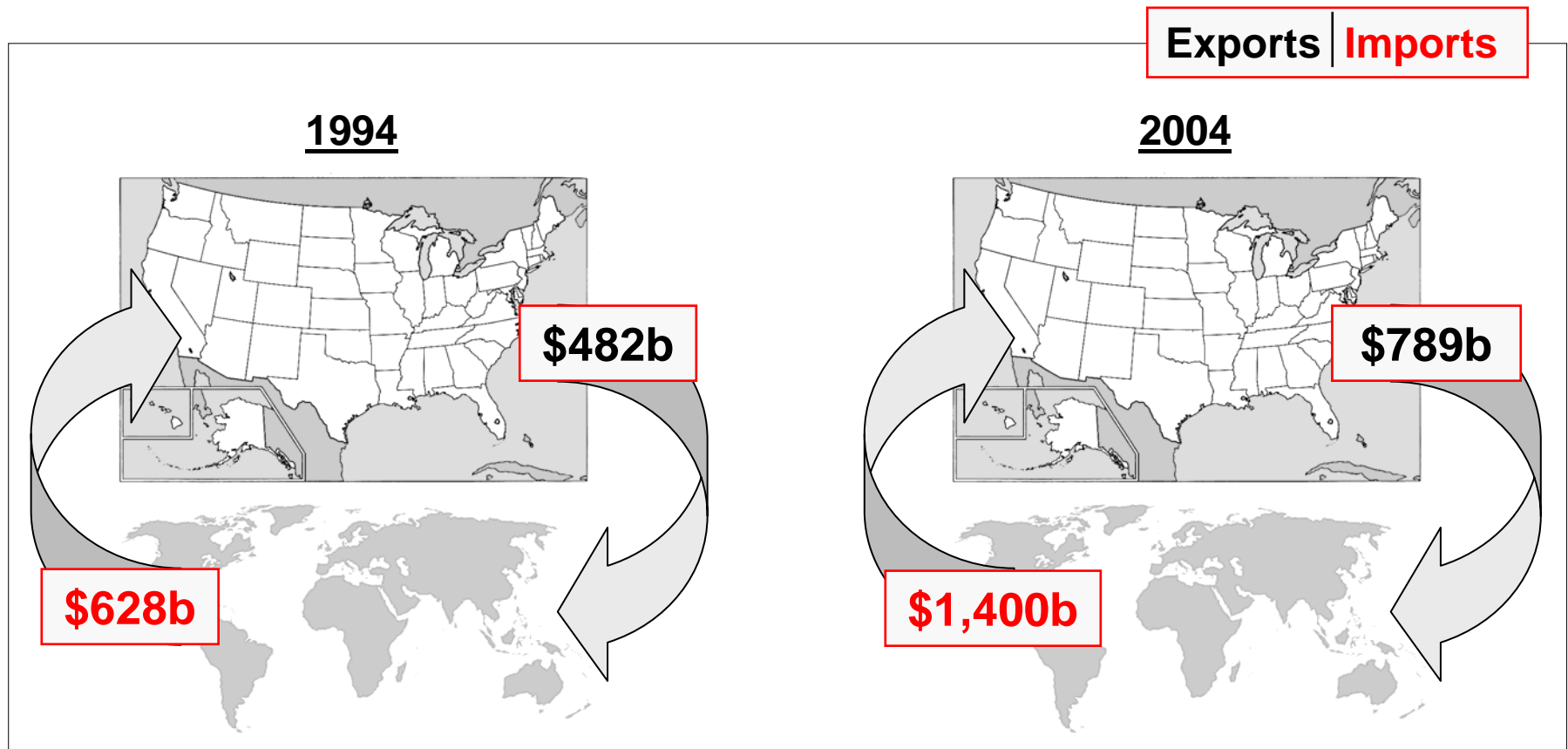


Many Factors Contributed to the Job Loss

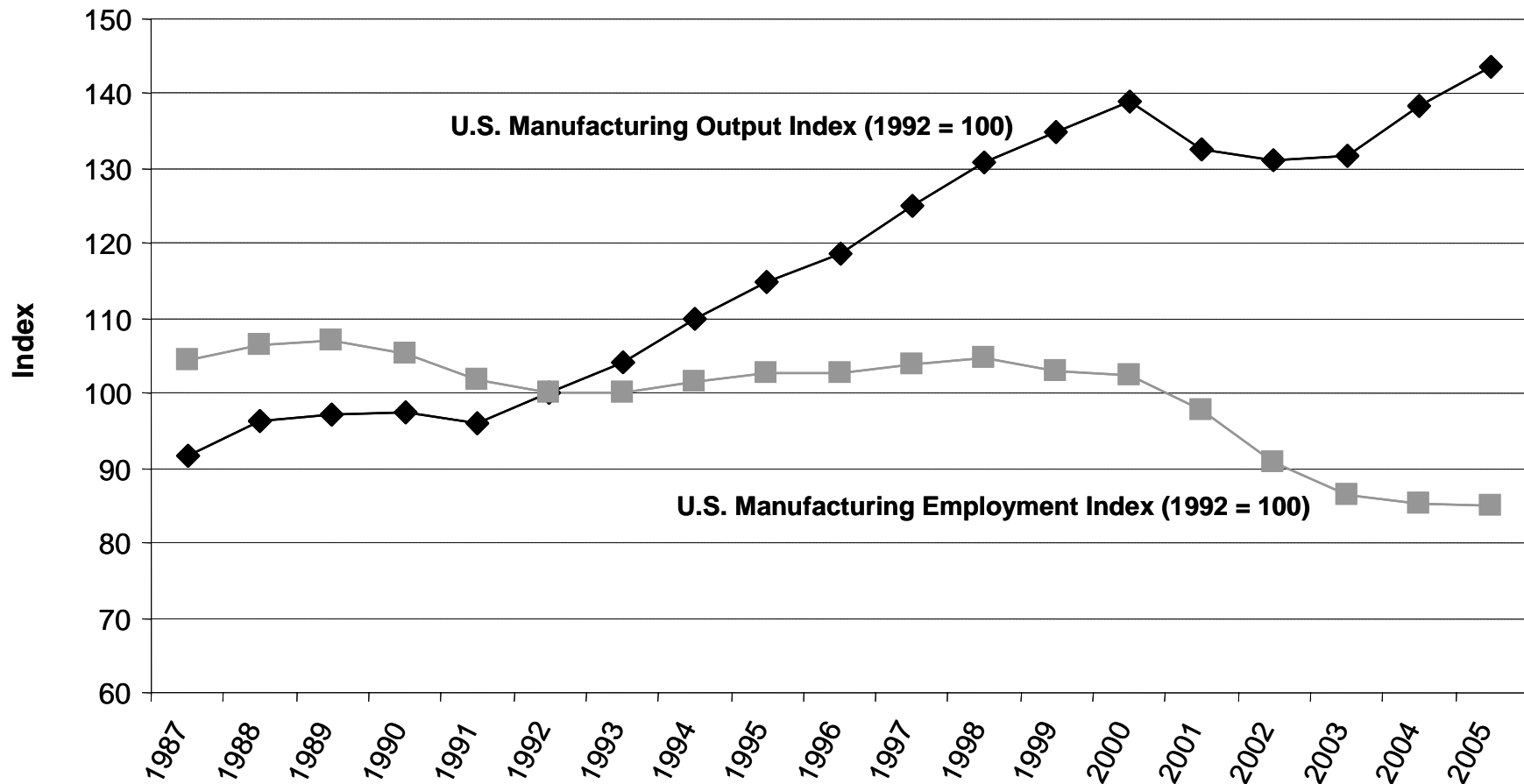
- Globalization of the U.S. economy
- Technological and process improvements allowed increased productivity
- Increasing sector labor costs

Globalization Has Opened World Markets

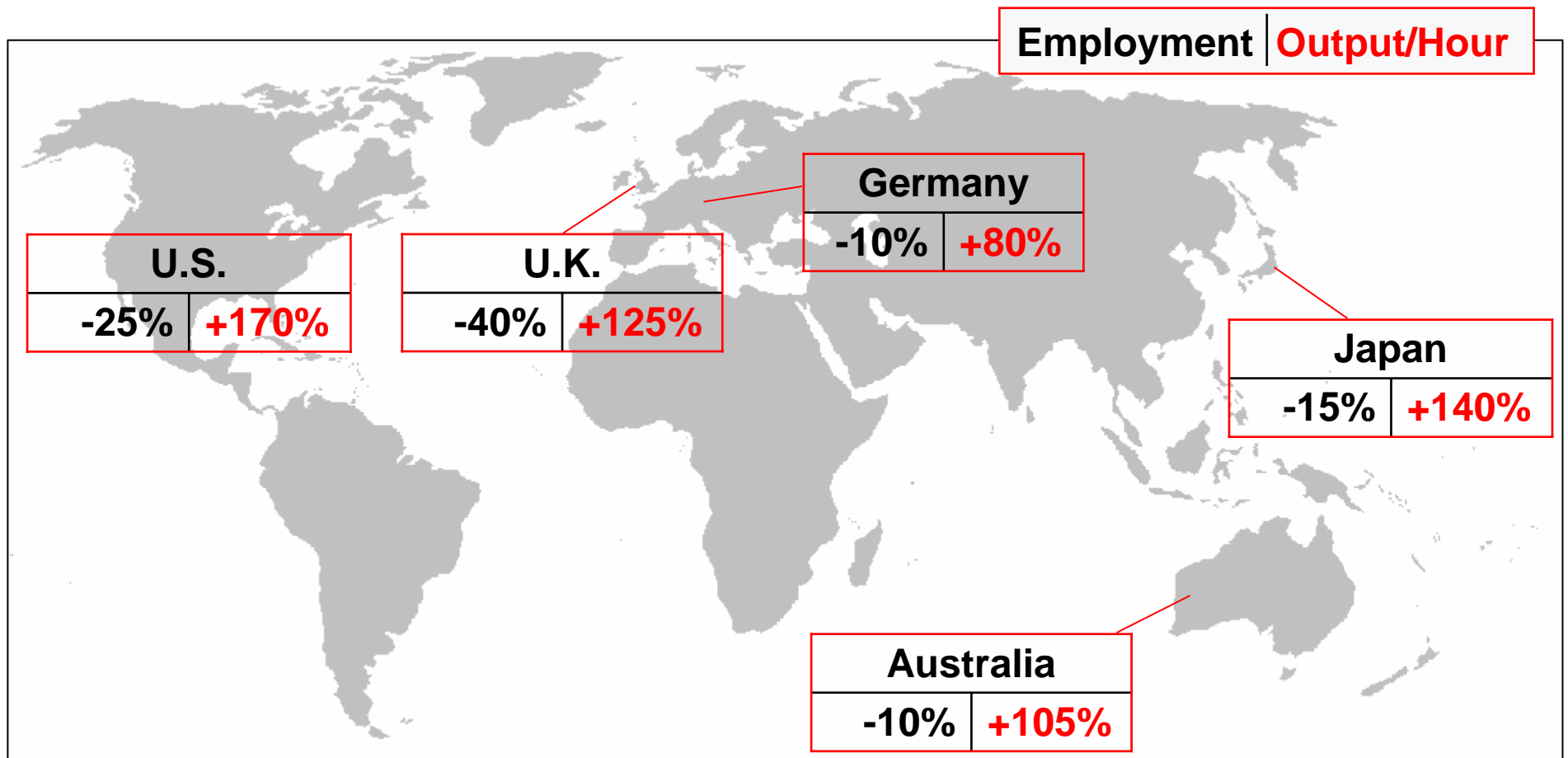
- But U.S. exports increased at half the rate of imports



Technology Has Allowed U.S. Manufacturers to Increase Output Amid Declining Employment

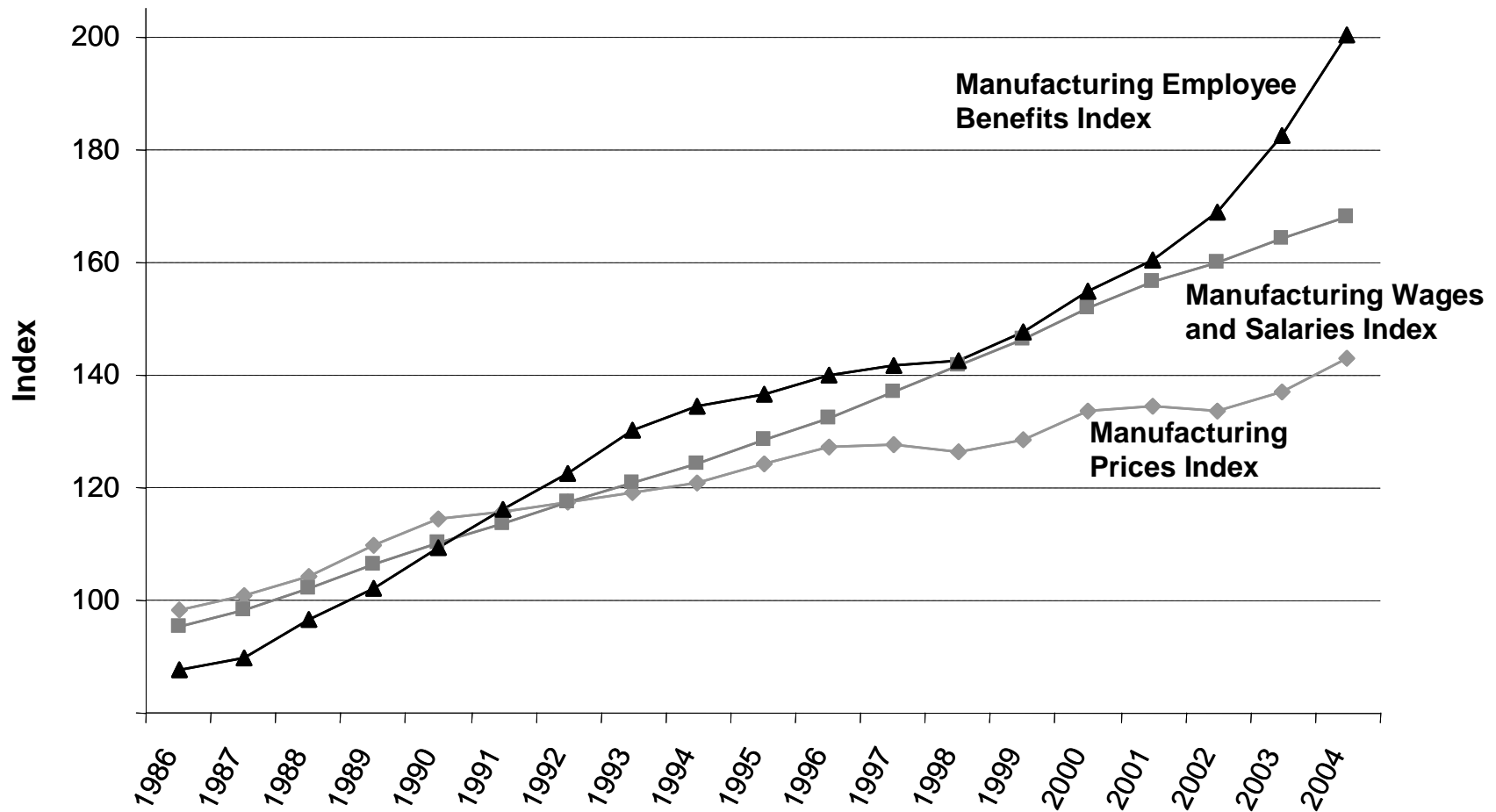


Jobs Decline and Productivity Increase Is a Worldwide Trend



Data from U.S. Bureau of Labor Statistics; percent change measured 1980 - 2003

Manufacturing Labor Costs Rose Faster Than Ability to Raise Prices



Emerging Economies Driving Increased Imports Have Much Lower Manufacturing Wage Rates

- Average U.S. manufacturing wage is \$22.87 / hour

<u>Developed Economies</u>			<u>Emerging Economies</u>		
Country	Share of U.S. Imports	Average Wage / Hour	Country	Share of U.S. Imports	Average Wage / Hour
Canada	17.5%	\$21.42	China	14.0%	\$0.57
Japan	8.1	21.90	Mexico	10.8	2.50
Germany	5.0	32.53	Korea	2.5	11.52

Data from U.S. Census Bureau and *Monthly Labor Review*; wages in 2006 U.S. \$

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Federal and Virginia Regulations Grouped Into Four Categories

1. Environmental

Protect the environment and human health from harmful air emissions, water contamination, and hazardous waste pollutants.

2. Economic

Restrict a firm's primary economic activities, such as its process, pricing, and output decisions.

3. Workplace

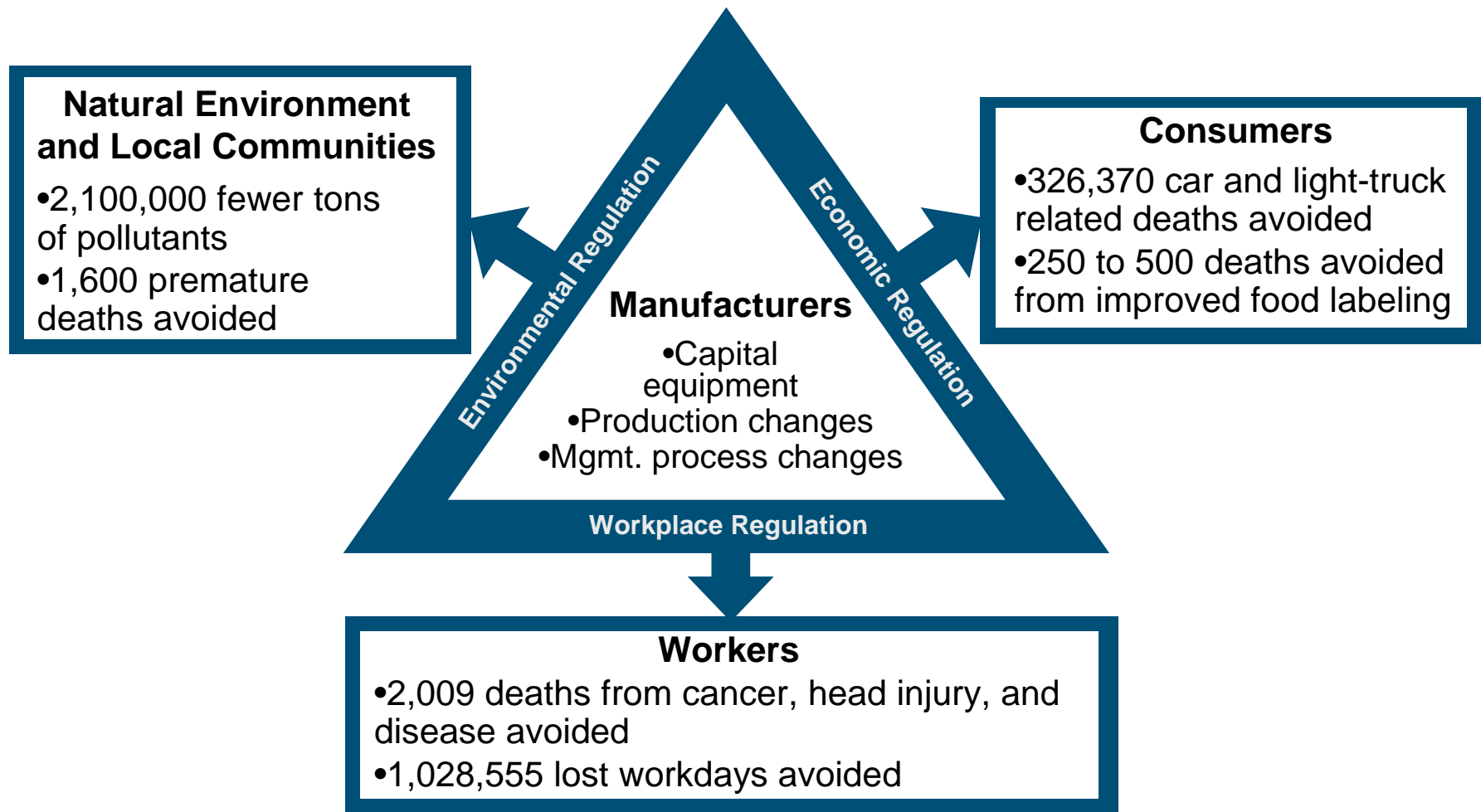
Govern the relationships between employers and employees, such as wages, benefits, safety and health, and civil rights.

4. Tax

Identify the activities for which government will collect taxes and the rates at which those taxes will be collected.

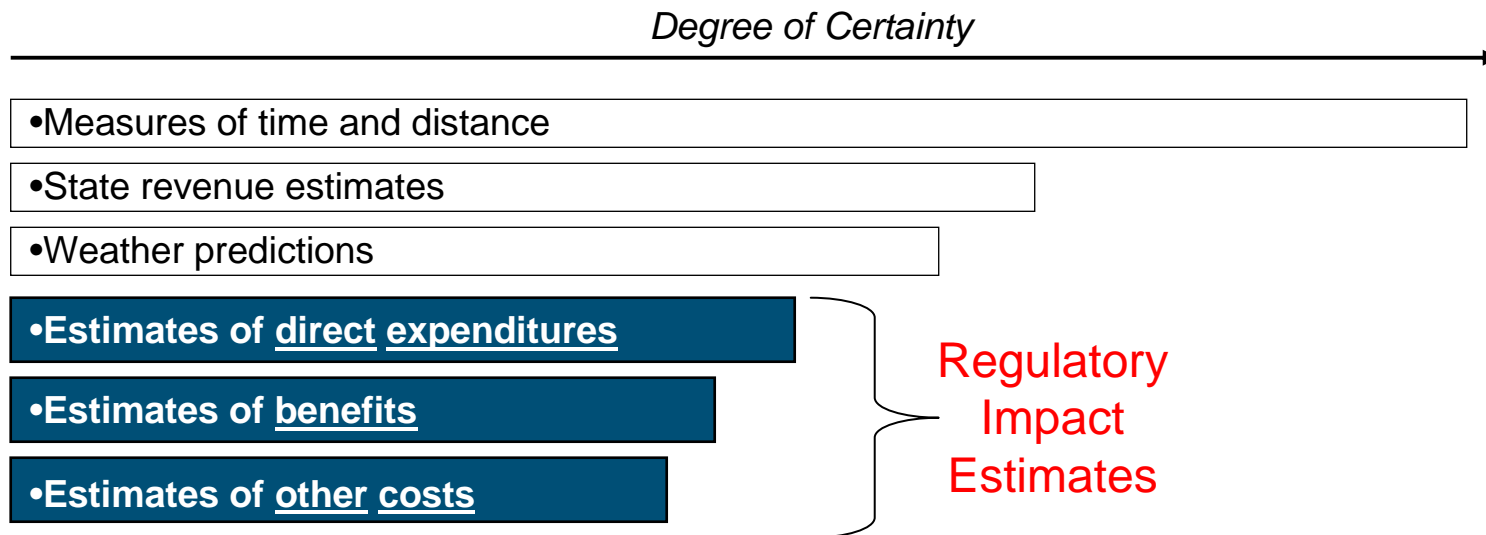


Manufacturers' Compliance Cost Spending Benefits the Public



Limitations of Regulatory Analysis

- Conducted research on various methods to analyze the impact of regulations
- Found that regulatory impact estimates have a comparatively low degree of certainty



Other Important Limitations

Methodological Limitation	Question Illustrating Limitation
Establishing a Baseline or Counterfactual for Comparison	How much would pharmaceutical companies spend on testing drug products if regulations requiring the tests were not in place?
Attributing Changes to Regulations	What role have workplace safety regulations played in companies' decisions to purchase protective equipment for employees?
Precisely Measuring Impact	How should environmental control equipment purchased in 2002 be considered when measuring costs in 2005?

Other Legislative Organizations Were Requested to Address Similar Issues

- JLARC's Florida counterpart declined to do a study (1999)
- GAO had difficulty with a similar nationwide study (1997)
- JLARC learned important lessons from GAO
 - VMA helped JLARC staff identify companies willing to participate
 - JLARC and agency staff identified applicable regulations
 - JLARC staff compiled existing estimates and cost categories to use as starting point

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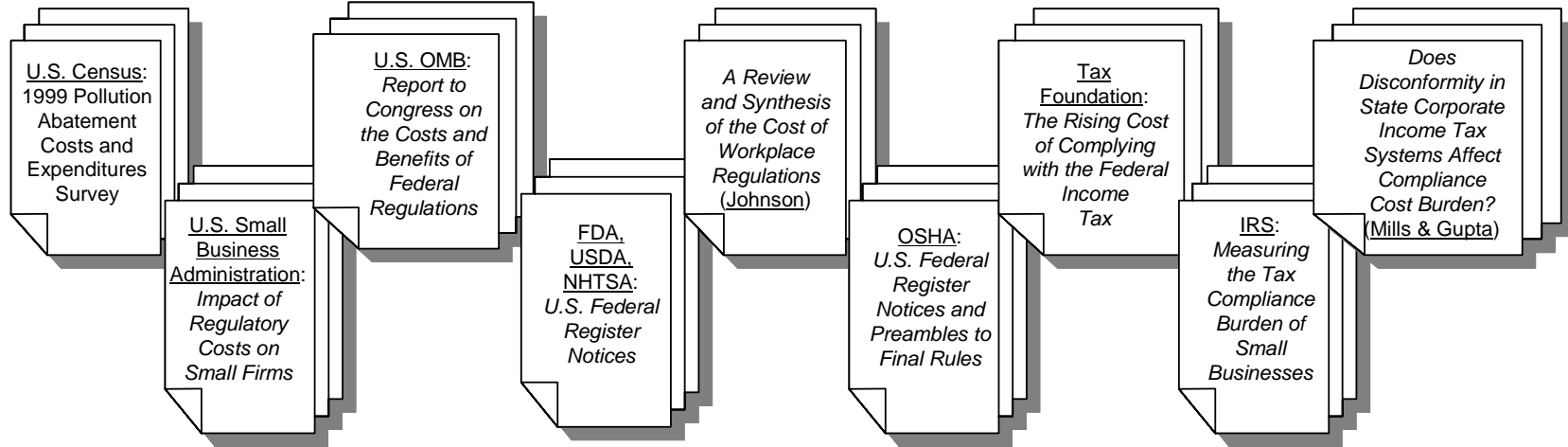
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Different Sources for Compliance Costs

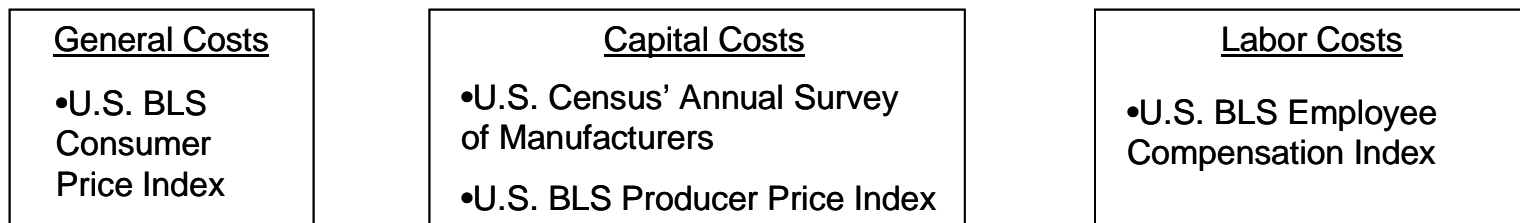
- Existing estimates adjusted by JLARC staff
- Case studies with five large Virginia manufacturers
 - Two paper manufacturers
 - Transportation equipment manufacturer
 - Beverage and tobacco products manufacturer
 - Computer and electronics manufacturer
- Attempted to address costs in four regulatory areas

JLARC Staff Systematically Estimated Costs

Step 1: Review, Analyze, and Categorize Existing Cost Estimates



Step 2: Inflate Cost Estimates into 2005 Dollars as Needed



Steps 3 and 4: Calculate Manufacturing-Specific or Virginia-Specific Estimates

- U.S. Census and U.S. BLS surveys on national and Virginia employment

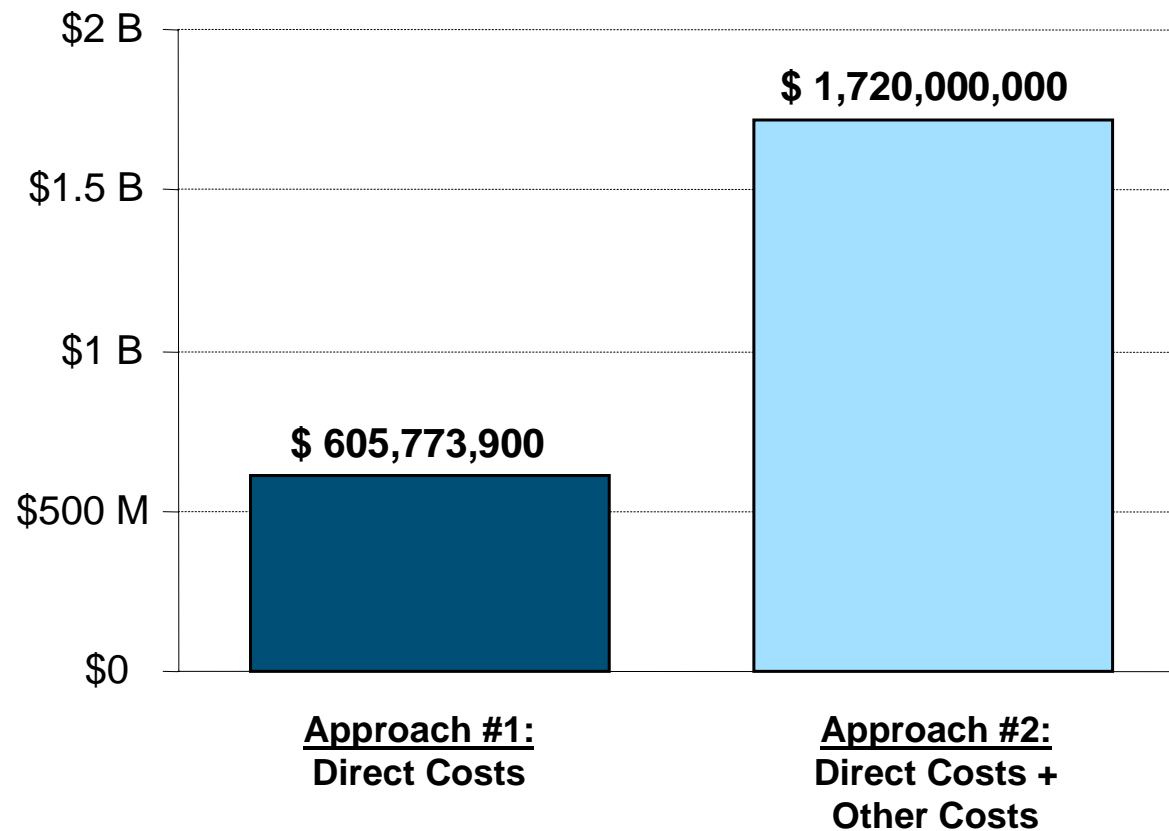
JLARC Staff Used Two Approaches To Estimate Costs

- Approach #1 includes direct costs
- Approach #2 includes direct costs plus other types of costs

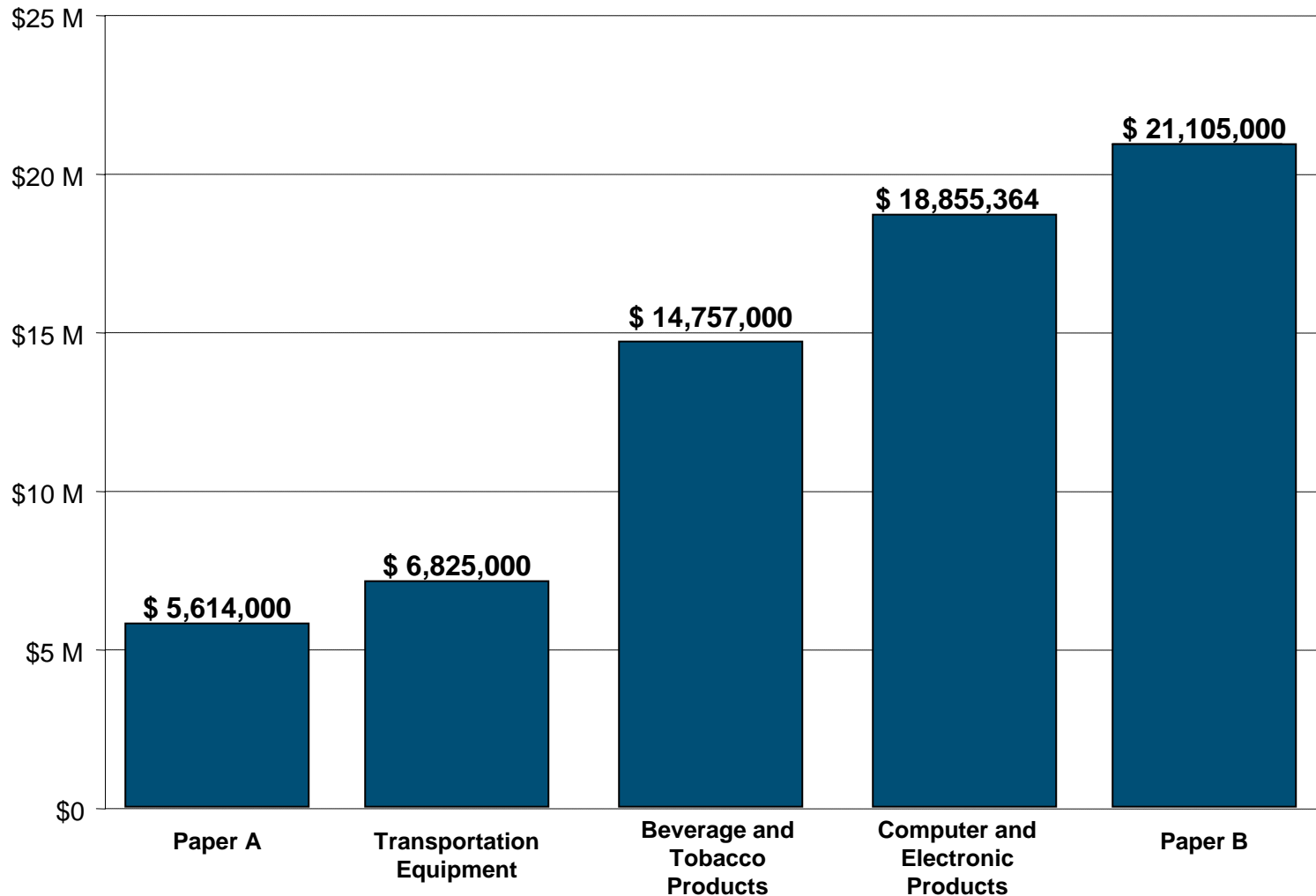
Direct Costs	Other Costs
Capital expenditures	Disrupted productivity
Product reformulation or design	Altered decision-making due to regulatory requirements
Recordkeeping	Settlement awards and legal costs
Staff time	OSHA fines for non-compliance

Finding

JLARC-Adjusted Estimates of Environmental Compliance Costs



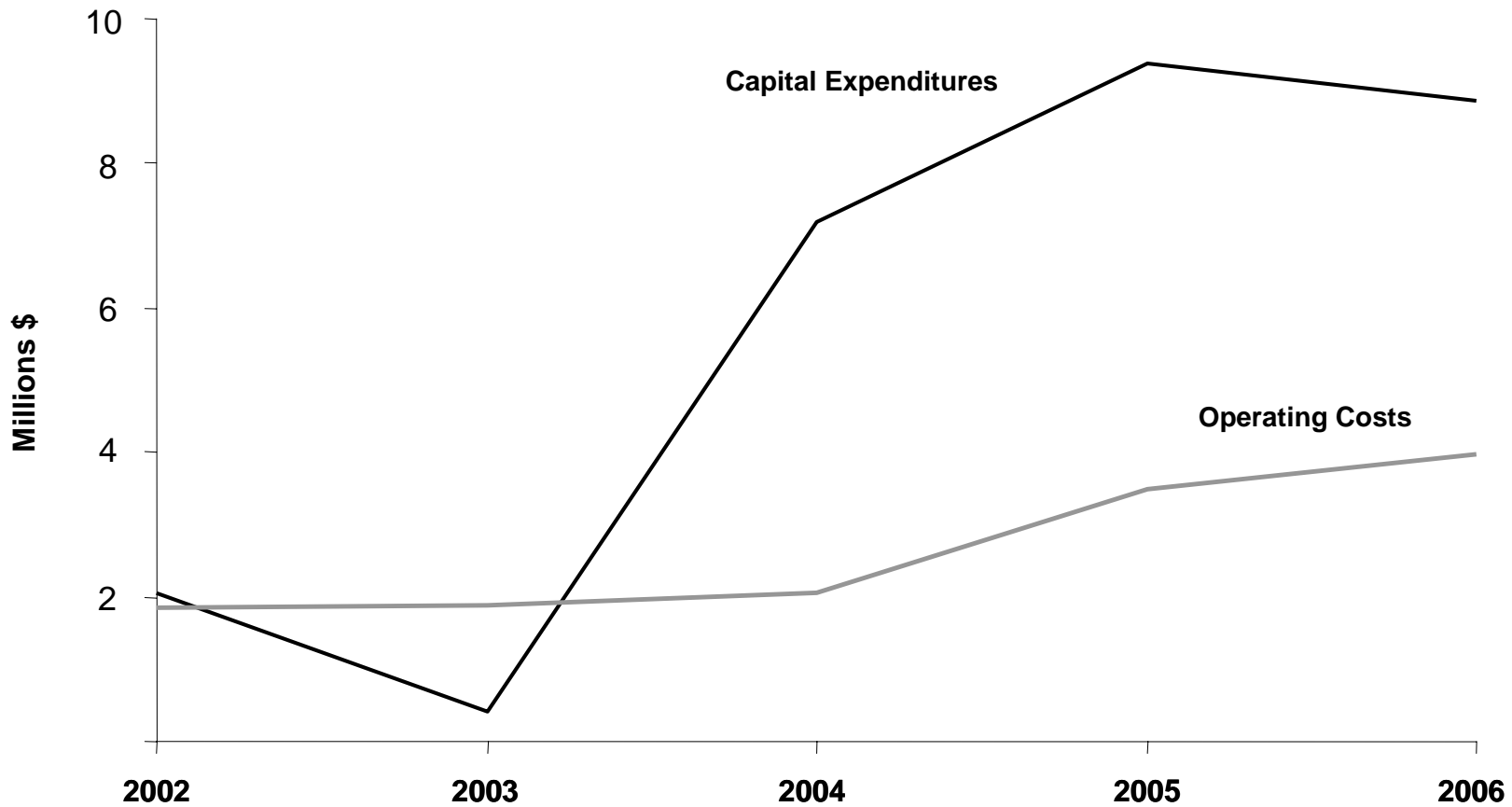
Case Study Company Estimates of Environmental Costs Vary by Company and Sub-Sector



Themes -- Environmental Compliance Costs

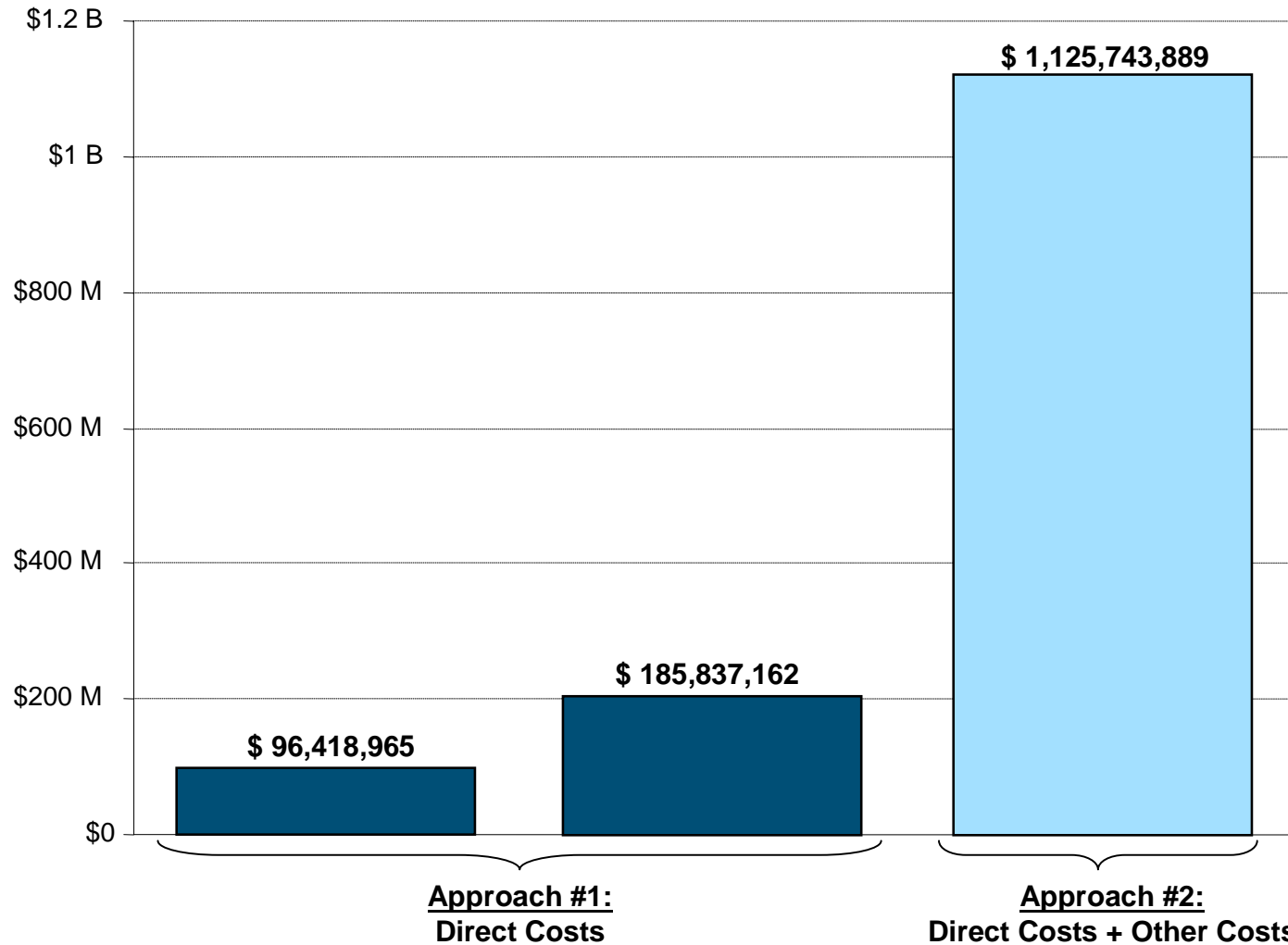
- Pollution abatement activities were generally the largest environmental compliance cost
- Permit fees were generally the smallest environmental compliance cost

Pollution Abatement Expenditures for a Company Vary Depending on Year Measured



Finding

JLARC-Adjusted Estimates of Economic Compliance Costs



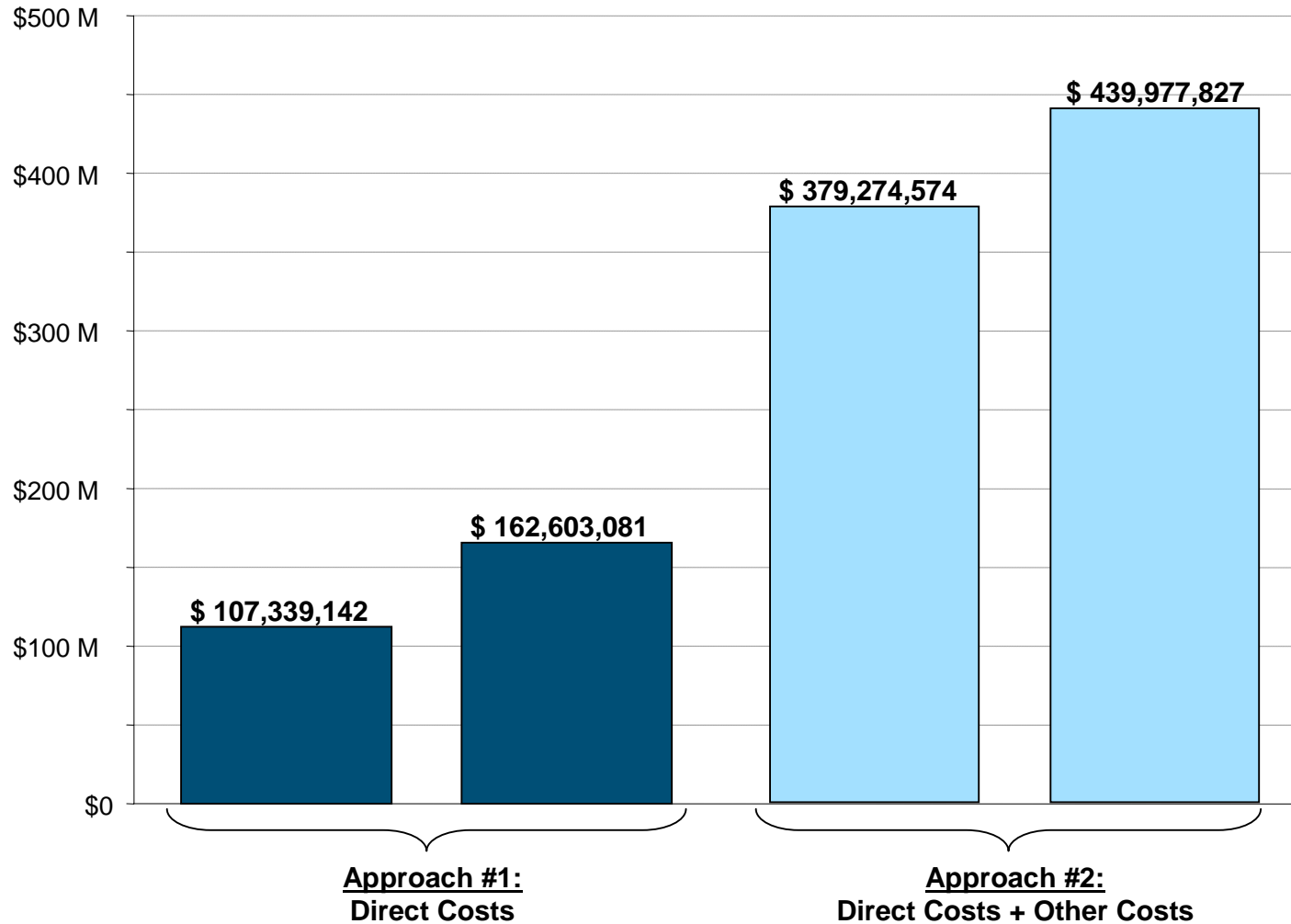
Economic Cost Estimates Vary Substantially by Industry

Per-Employee Costs, by Sub-Sector / Industry

Sub-Sector / Industry	Per-Employee Cost (Low)	Per-Employee Cost (High)
Food and Beverage Manufacturing	\$100	\$3,392
Tobacco Product Manufacturing	243	243
Medical Equipment & Supplies Manufacturing	336	336
Pharmaceutical & Medicine Manufacturing	303	635
Transportation Equipment Manufacturing	1,076	2,904

Finding

JLARC-Adjusted Estimates of Workplace Compliance Costs



OSHA Compliance Costs Are Largest Component of Workplace Estimates

■ Approach #1

- OSHA regulations comprise 51% to 67% of estimate
- Employee benefits statutes are other major cost driver

■ Approach #2

- OSHA regulations comprise 36% to 44% of estimate
- Labor-management relations are other major cost driver



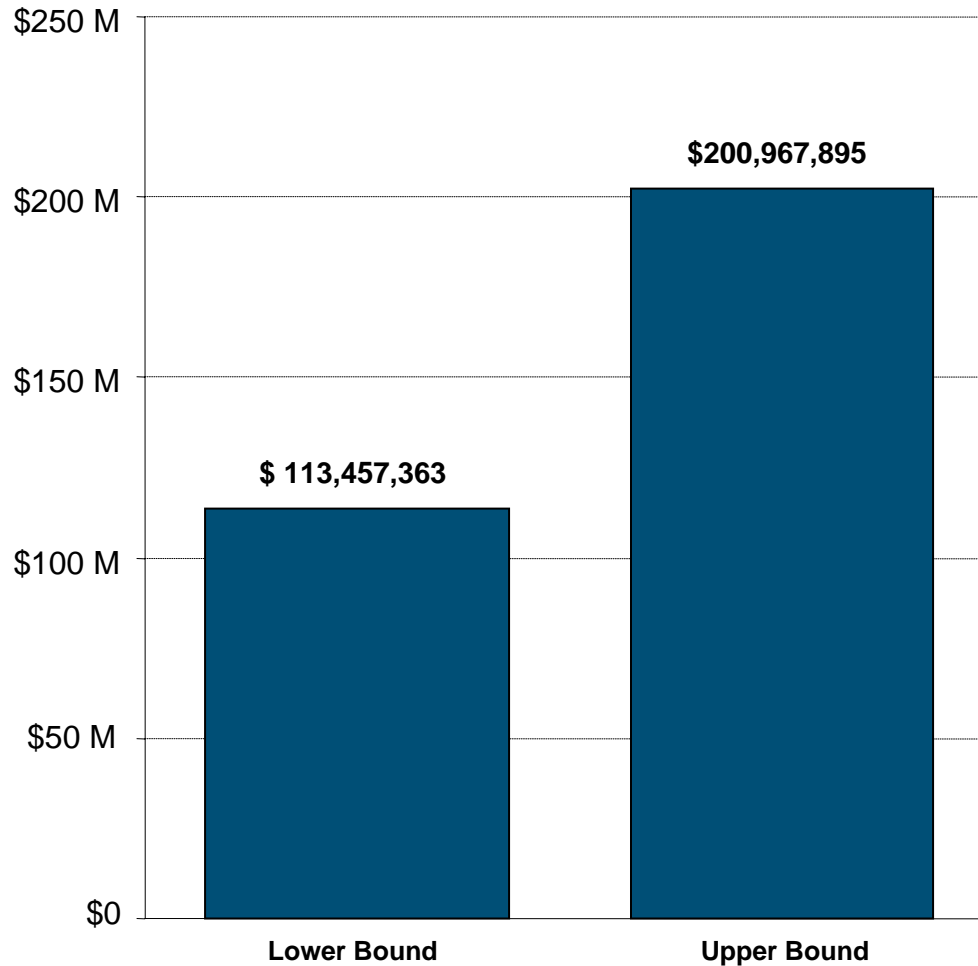
OSHA Compliance Costs Vary Substantially by Company and Sub-Sector

Per-Employee Costs, By Case Study Company

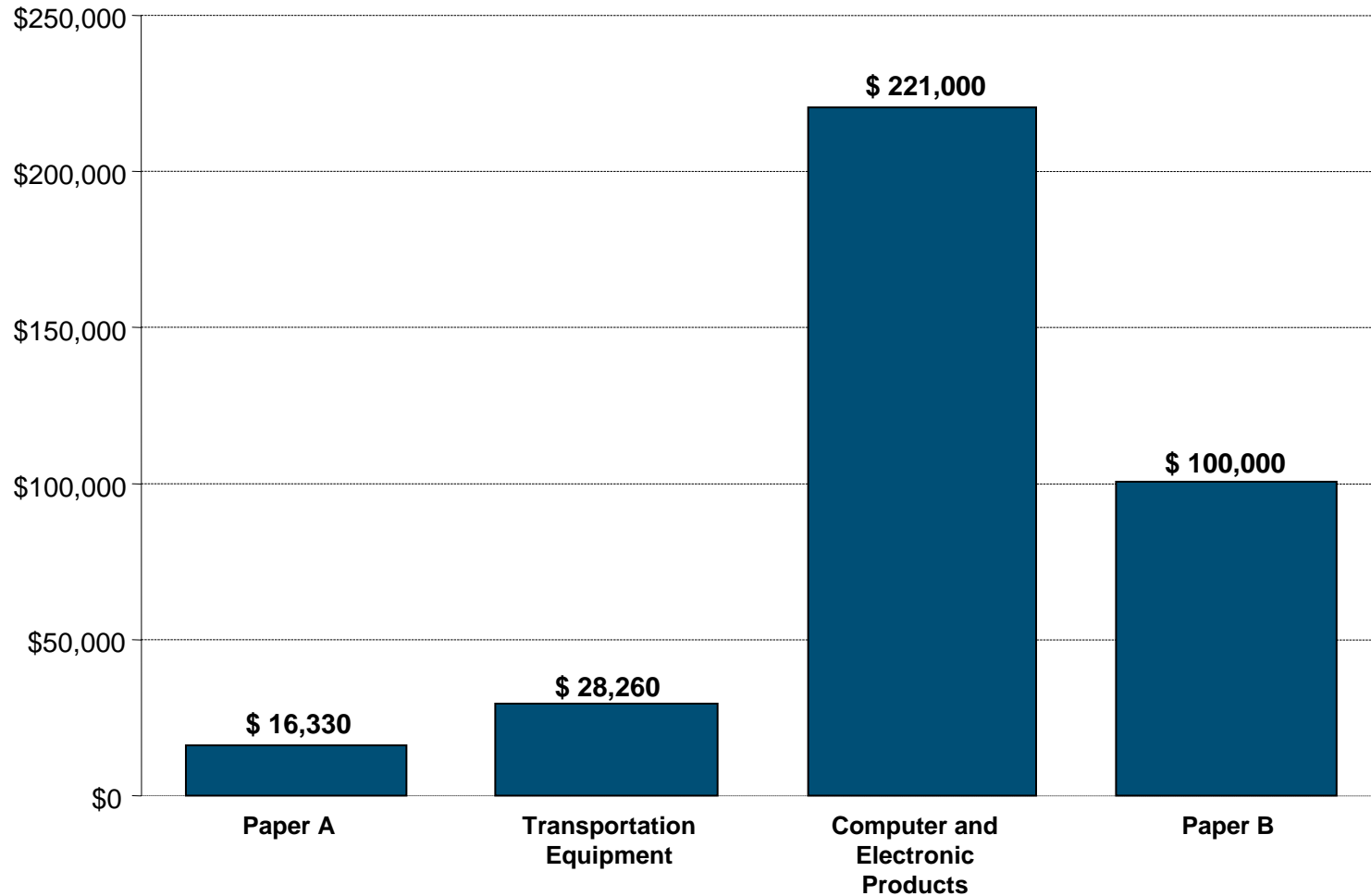
	Paper Company A	Paper Company B	Computer & Electronics Equipment	Beverage & Tobacco
Fire Protection	\$887	\$21	\$143	\$78
Personal Protective Equipment	326	70	70	284
Respiratory Protection	14	24	54	56

Finding

JLARC-Adjusted Estimates of Federal Tax and Virginia Income Tax Compliance Costs



Tax Compliance Cost Estimates Vary by Company and Sub-Sector



Compliance Costs Primarily Result From Lowering Tax Liability

■ Sales and Use Tax

- Identifying exempt items (such as production inputs) used directly in manufacturing

■ Machinery and Tools Tax

- Identifying exempt property (such as office equipment) not used directly in manufacturing production

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Approach to Other States' Analysis

- JLARC staff selected five states
 - Pennsylvania
 - Maryland
 - North Carolina
 - Tennessee
 - Georgia
- Each state's agency staff worked with JLARC staff to identify and assess applicable state regulations

JLARC and DEQ Staff Separated Federal and Virginia Environmental Regulations

- Federal Regulations initiated at the federal level and apply to all states
- Supplemental Regulations based on federal mandates
- Stand-Alone Regulations enacted by state authority alone, based on state statute, and have no supporting federal statute

Finding

- Virginia's stand-alone environmental regulations were rated as not having a large impact

Virginia's Environmental Regulations Compared to Other States

- DEQ reported that Virginia's 10 stand-alone regulations had either minimal or some impact
- North Carolina and Pennsylvania: no stand-alone regulations have a large impact
- Georgia and Tennessee: about 60 and 100% of stand-alone regulations have a large impact

Finding

- Virginia's economic and workplace regulations do not appear to add substantial costs and are similar to other states

Most Virginia Economic and Workplace Regulations Are Similar to Federal Regulations

- Most State economic regulations focus on the food and beverage manufacturing sub-sectors
 - Two major State food regulations are identical to federal regulations
 - Majority of other State food and beverage regulations are similar to federal regulations
- Most State workplace regulations are occupational safety and health regulations
 - Half are identical to federal regulations
 - Two are similar to federal regulations
 - One has no basis in federal code

Virginia's Economic and Workplace Regulations Are Similar to Other States

- Similar economic regulations for food and beverage sub-sectors and regulate specific industries similarly
 - Most states have regulations for milk and frozen ice cream and desserts
 - Some states have unique regulations for specific industries
- Similar workplace safety and health regulations
 - States have minimal stand-alone regulations
 - States have some supplemental regulations but most have minimal impact

Finding

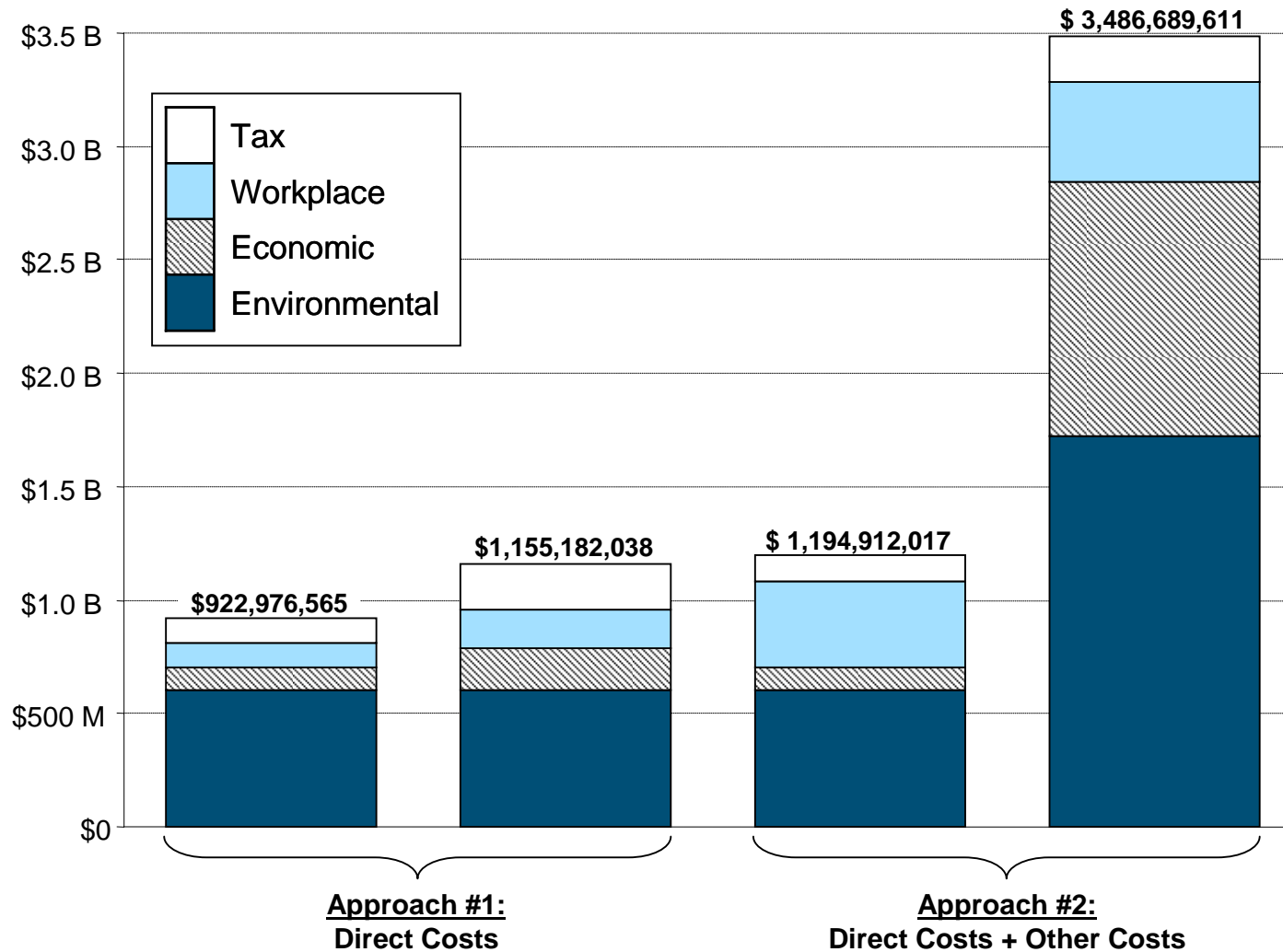
- Virginia's tax system is similar to other states except for the machinery and tools tax
 - Localities set assessment base and rate

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Finding

JLARC-Adjusted Estimates of Total Compliance Costs



Overall Themes -- Case Study Companies

- Companies could generally identify compliance costs
- Had difficulty determining what they would spend absent regulation
- Generally could not separate costs to comply with federal regulations from costs for Virginia regulations
- A company's estimates for its facility are likely more precise than aggregate estimates for all companies
- Compliance costs can vary widely

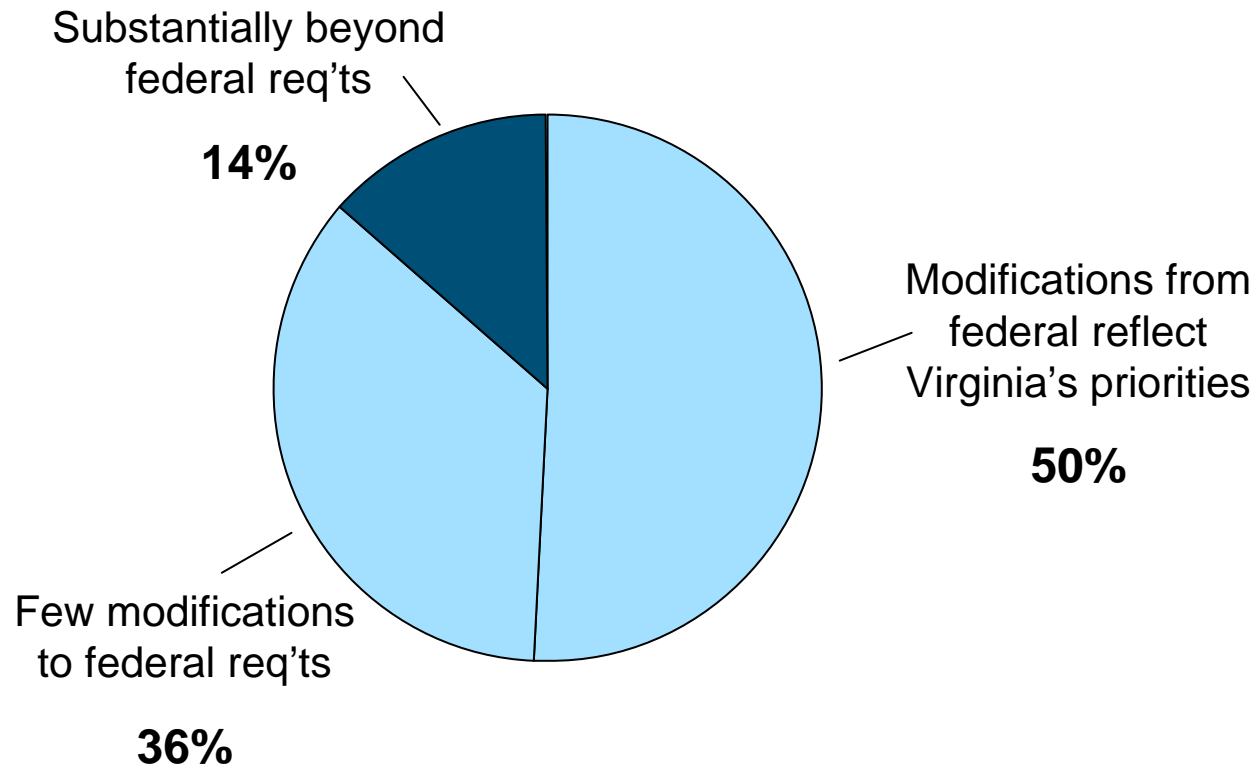
Finding

- Virginia regulations generally mirror federal regulations and do not appear to add substantial costs

Rationale

- Most Virginia regulations closely follow federal regulations and are similar to other states
- Tendency for federal regulation benefits to outweigh costs could also be applied to Virginia regulation
- Long-term, public regulatory review process that allows manufacturer involvement
- Instances in which companies “overcomply”

Low % of Survey Respondents Believe Virginia's Regulations Go Substantially Beyond Federal



N=59



Finding

- Virginia manufacturers identified several potential refinements to Virginia's environmental regulations and two areas of concern about the State's environmental regulatory approach

Manufacturers Are Concerned About the Timeliness of DEQ Permit Processing

- Number of permit applications and length of processing time have increased in recent years, with no appreciable increase in DEQ permit staffing
- 2005 peer review report of DEQ's permit process identified about 250 improvement opportunities
 - Provide technical training
 - Initiate focus groups
 - Allow unchanged application information to carry over
 - Streamline the general permit process

Additional Opportunities Exist to Reduce Pollution

- Only 1% of manufacturing facilities have participated in Governor's Environmental Excellence Award program
- Burden is on companies to participate
- No single DEQ group is primarily responsible for identifying and promoting opportunities for companies to reduce pollution

Finding

- Overlap exists between the Virginia Workers' Compensation Act and the federal Longshore and Harbor Workers' Compensation Act

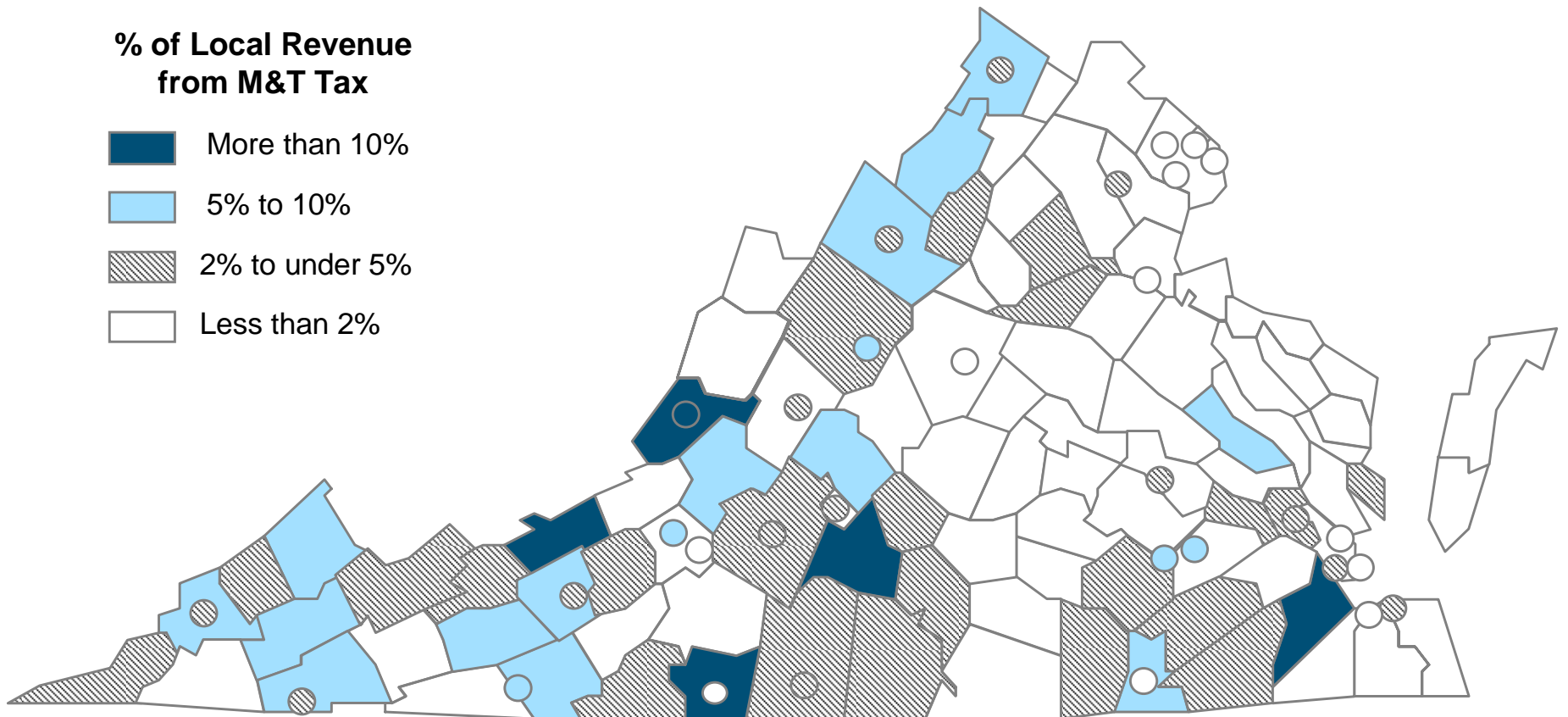
Certain Employees Can File Workers' Compensation Claims Under One or Both Acts

- Provides flexibility for employees
 - Can only receive compensation under one act
- For employers, overlap results in increased costs because of duplicative administrative and legal costs
 - One company's estimate of these costs: \$1.5 to \$2 million per year
- Shipbuilding is the manufacturing industry most affected (21,684 employees in Virginia)

Finding

- Machinery and tools tax was the most widely cited regulatory concern in the JLARC staff survey

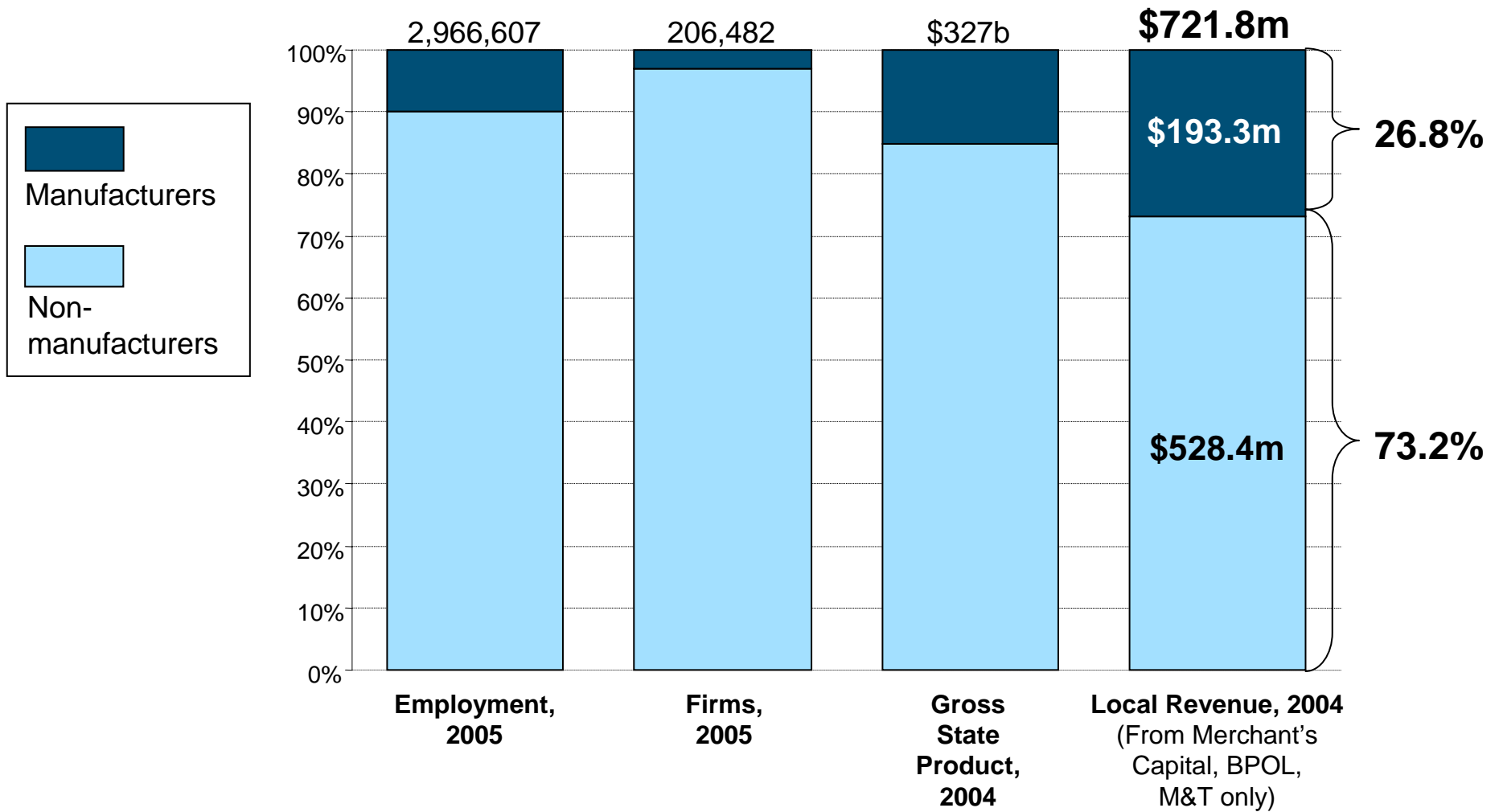
Few Localities Rely Heavily on Machinery and Tools Tax for Local Revenue



Localities Have Different Assessments and Rates

- *Code of Virginia* requires tax rate on machinery and tools to be no higher than “the rate imposed on the general class of tangible personal property”
- 70 of 129 cities and counties have a lower nominal rate of taxation for machinery and tools
- No cities or counties have a higher nominal rate of taxation for machinery and tools

Manufacturers' Share of Local Business Taxes Is Higher Than Other Measures



Finding

- Virginia regulations were not primary reason for manufacturing's decline in jobs

Rationale

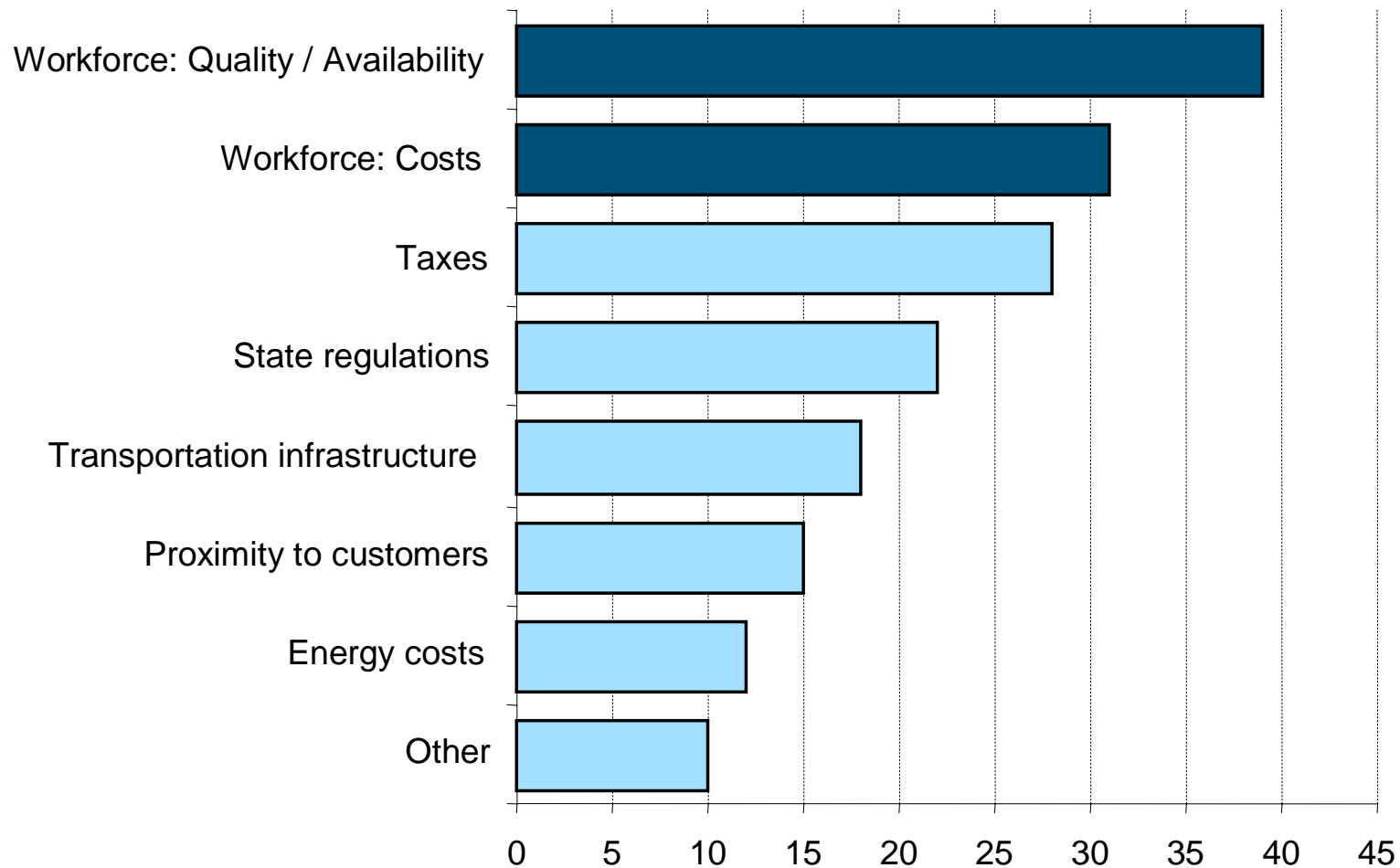
- Globalization, increased productivity, and labor costs were major reasons
 - Job loss occurred in other states, nationally, and in other industrialized nations
- Virginia's regulations closely follow federal regulations and have remained stable
- More broadly, Virginia is consistently recognized as a "business-friendly" state

Finding

- Supporting Virginia's manufacturing sector requires considering other factors

Workforce Considerations Are Most Important for Virginia Manufacturers

Manufacturer's Responses to JLARC Survey on Factors of Location Decisions



Possible Considerations to Foster Virginia's Manufacturing Sector

- What role will manufacturing play in Virginia's future economy?
- How can Virginia complement the federal American Competitiveness Initiative?
- What sub-sectors does Virginia want to recruit, maintain, or support?
- What are Virginia's competitive advantages? Where does Virginia need to improve?
- How can appropriate perspectives be included and trade-offs considered?

Key Findings

- Despite job losses, manufacturing is still critical to Virginia's economy
- Virginia's regulations were not the primary cause of job loss
- Virginia manufacturers spent an estimated \$923 million to \$3.49 billion to comply with regulations in 2005
- Virginia's regulations generally follow federal regulations and are not substantially different from other selected states
- Supporting manufacturing requires considering other factors, including workforce issues and transportation infrastructure

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and on the table by the door.

