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He has presented and published more than 30 papers in international conferences and professional journals.

Dr. Chen received a certificate of international business education and research (IBEAR) from the Marshall School of Business at the University of Southern California. He received a Ph.D. in finance and a master of arts degree in economics, each at Kent State University. Dr. Chen also received a master of international management degree from the Thunderbird School of Global Management. He earned a bachelor of science degree in international trade/ English from the University of International Business and Economics in China.

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## **Manufacturing for Global Markets**

Dr. Haiyang Chen, Dean Dr. Mohammed A. Karim, Assistant Professor Marshall University College of Business

In this era of globalization, all businesses are affected by global competition, irrespective of their participation in off-shore activities. West Virginia manufacturing firms are no different. To thrive in this competitive environment, manufacturers need to understand the global business environment, take opportunities when they are available and prepare for challenges as they arise.

As international trade is becoming increasingly important for U.S. employment and economic growth, standing on the sidelines is no longer an option for businesses. According to *Business Roundtable*, an association of CEOs of leading U.S. companies, international trade supports 38.1 million jobs in the United States, and trade-related employment is growing significantly faster than the total employment growth of the nation.

The percentage of trade-supported jobs in West Virginia is lower than those in the bordering states. Further, the contribution of manufacturing firms in West Virginia's exports is significantly smaller. In 2013, manufacturing firms in Ohio, Kentucky, Virginia, Maryland and Pennsylvania contributed 86 to 97 percent of each respective state's total exports, whereas West Virginia manufacturing firms contributed merely 47 percent.

West Virginia is also significantly behind in export-related manufacturing jobs. In 2013, West Virginia had 18,601 export-related manufacturing jobs, which was 2.6 percent of total state employment. This number is significantly smaller than figures for Kentucky, Ohio and Pennsylvania.

West Virginia has the lowest average annual wage when compared to its five bordering states. According to the Bureau of Labor Statistics, the average annual wage of West Virginia workers was five percent to 40 percent lower than the wage of workers in the five bordering states in 2013. Why did the relatively cheaper cost of labor in West Virginia fail to attract more export manufacturing firms than surrounding states, which have higher labor costs? Understanding the underlying reasons behind this is crucial for the development and implementation of effective policies, which may eventually lead to job creation and the economic growth of the state.

Bearing that in mind, we collaborated with the West Virginia Manufacturing Association (WVMA) and designed a survey of international business activities. The survey was targeted to understand global business activities of West Virginia manufacturers, the challenges they face and how academia can help to facilitate global business activities. More specifically, the survey examines three core areas: current status of global business by West Virginia manufacturers; the impediments they are facing and opportunities they are expecting; and the role of academic institutions to facilitate their international business.

Historically, West Virginia's exports heavily depended on minerals. Nearly two-thirds of the state's merchandise exports come from minerals and ores (including coal and petroleum gases)<sup>1</sup>. High dependence on natural resources branded West Virginia as a state of energy resources. Manufacturing has not been considered as the strength of the state. Besides, the global marketplace is always more competitive than the domestic markets and more expensive to enter. Market research, introduction of products, sales channels selection, product promotion, complex logistic supports, frequent foreign travel, paperwork requirements and financing foreign businesses can always add operating costs. Moreover, complications of protecting intellectual property, trademarks, complying with laws and regulations in the home and host countries, seeking government assistance, etc. all make it difficult for American companies, especially the small ones, to expand into global markets. As 77 percent of West Virginia exporters are small- or mediumsized enterprises (< 500 employees)<sup>2</sup>, it is always an uphill battle for West Virginia manufacturers to enter into the global market and compete successfully.

The examination of our survey data reveals several interesting patterns and strengthens our prior beliefs. West Virginia manufacturers export mostly to Canada, Asia and Europe, with revenue-related motive, and import mostly raw materials from China and India as inputs. These firms are predominantly small- and medium-sized enterprises and, hence, disadvantaged due to smaller sizes. When we asked survey participants about the challenges they face, the manufacturing exporters mostly mentioned financial issues (payment and cost-related), regulatory barriers and challenges from market competition. Interestingly, West Virginia export manufacturers are hopeful about their growth in foreign markets and are willing to expand their business abroad in the future. In response to the questions related to human capital, the majority of the survey participants emphasized the need for potential employees with expertise in export/import documentation. They also iterate the need for market research to identify markets for their products and services in the global arena.

In this competitive business environment, the importance of expanding in foreign markets is greater than ever. A comprehensive and well-coordinated strategic initiative could establish West Virginia as a manufacturing hub for exports. Several steps could be taken to make West Virginia manufacturing competitive in global markets:

- *A stronger coalition* comprised of West Virginia government agencies, professional associations such as the WVMA, manufacturing companies, and universities can promote and provide assistance to trade and investment for manufacturing firms.
- *Identifying niches for West Virginia manufacturers* and directing research and development, marketing and manufacturing efforts toward those niche areas.
- Improving human capital through training designed for special West
  Virginia export manufacturing needs. As many manufacturers mentioned the need for skilled labor in coming years, academic institutions such as Marshall University, West Virginia University and others may improve human capital through training designed specifically to meet West Virginia needs.
- Branding West Virginia as an attractive location for foreign investment in export manufacturing. To name a few, West Virginia can achieve that through participating in national and international trade fairs, promoting West Virginia to foreign chambers of commerce and sending delegates to

foreign countries to create awareness and to enhance the state's reputation.

The College of Business at Marshall University offers an export management course aimed at promoting expertise in exporting in the state. It includes several core aspects of business, such as marketing, management and financial issues related to export. Rather than a typical course setting, this course is comprised of guest lecturers from government agencies and regional businesses, such as the U.S. Department of Commerce, U.S. Small Business Administration, West Virginia Development Office, freight forwarders, financial institutions, law firms, travel agencies, etc. Successful completion of the course certifies the participants as export managers and significantly reduces training time for exporting firms. West Virginia University conducts a similar course at its Morgantown campus.

Although our study has identified the issues related to export and import of manufacturing firms in West Virginia, we need further research to better understand the issues associated with trade-related manufacturing. Studies similar to ours may assist the policy makers in West Virginia to take initiatives to resolve export-related issues, promote trade and brand West Virginia as a favorable market for investment. Moreover, such initiatives will open doors for stronger ties between the business community and academia. V

<sup>1</sup> Business Roundtable

<sup>2</sup> International Trade Administration