

# Impact of China-Based Manufacturing on Greater Wisconsin Manufacturing Companies

By

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A handwritten signature in cursive script, reading "Joseph A. Benkowski", is written over a solid horizontal line.

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**Abstract**

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This research studies the effects that Chinese manufacturers are having on manufacturers in the State of Wisconsin during the fall of 2003. This study examined key Wisconsin manufacturing companies which the U.S. Trade Deficit Review Commission identified as having a significant production shift from the United States to China. The main purpose of this study was to examine China-based manufacturing and its impact on the Greater Wisconsin manufacturing companies.

The survey was given over the phone to a random sample of 619 target market companies in the State of Wisconsin. Of those 619 companies there were 239 surveys that were usable and provided a response rate of 38.6%. The survey instrument was developed by the researcher, Assistant Professor of the Marketing Research class at the University of Wisconsin-Stout, and the Director of the Northwest Wisconsin

Manufacturing Outreach Center (NWOC). The types of questions included in this survey were multiple choice, dichotomous, open-ended, Likert scale, and ranking. The results of the survey were tabulated and statistical analysis was performed.

This study found that China-based manufacturing companies are having a negative impact on Wisconsin manufacturing companies. Reasons for the impact were also found throughout the analysis and recommendations were made for the manufacturing sector located in Wisconsin, along with suggestions for a follow-up study.

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# Chapter I

## Introduction

Today, in front of our eyes, another melting pot of business and industries is beginning to form and is now transforming the world's most populated country; China. China in past years was well known for its almost limitless labor force which was known to supply the world with mainly cheap textiles, toys and not much else. China today still produces cheap goods, but since China entered the World Trade Organization (WTO) foreign direct investment (FDI) has been flooding into the country. During the past three years \$112.3 billion of FDI has been invested in China and another \$85 billion over the next two years is expected (Powell, 2002). This FDI has led to China now building high-tech foundries and other manufacturing facilities which can produce anything and everything that was once produced in Europe, United States, Japan, and other Asian countries. Many of these manufacturing facilities are not domestic however; they are multinational companies which have embedded themselves in China to take advantage of their well educated, abundant, and cheaper labor workforce. China's highly skilled workforce is paid wages which are one-seventh to one-tenth of the wage levels in the United States (Prizinsky, 2003).

Besides China's cheap labor, countries are investing in China because they also want to tap into China's growing consumer market. China's population is approximately 1.26 billion, which is also 20% of the world's population (Prizinsky, 2003). Tapping into this consumer market from outside the country was near impossible until China joined the WTO in 2001. Since then, China has been increasingly exporting goods not only to

the United States, but all over the world. The effects of this are that countries around the world are importing goods from China, which is causing trade deficits to countries around the world.

Another advantage that China has over the United States is the fact that China's currency, the yuan, is well below that of the United States currency. According to Jeffery Garten, China's currency remains fixed to the dollar at a rate of 8.2 to 1. Every time the United States drops the value of its currency, the Chinese currency immediately drops the value of its currency. This causes Chinese exported goods to become even more competitive to the goods produced in the United States. In a recent debate in July 2003, a group of panelist gathered to figure out how to respond to manufacturing threats to china. In the debate Larry Sippy, chairman of the National Tooling & Machining Association and president of Sipco Molding Technologies, drew the attention of the audience when he said big changes are needed in U.S government policies.

“We want our government to quit giving away our competitive advantage by supporting a strong dollar, letting less-developed countries off the hook on international trade agreements, allowing other governments to peg their currency to the dollar and imposing costs on small and medium-sized companies with taxes and regulations”, he said (Toloken, 2003).

This study is the result of the increasing concerns that competition from China is severely affecting businesses in Wisconsin. While there has been much information in the media about the loss of manufacturing work and jobs to China, few studies have examined the true impact on the local economies. It's not just Wisconsin or the Midwest that is feeling the effects of China's competition, the United States as a whole is.

According to the National Association of Manufacturers (the NAM), in 2002 the United States imports from China was \$125 billion, while exports to China was \$22 billion, which resulted in a trade deficit with China of \$103 billion. This was the largest trade deficit that the United States had with any country in the world.

The trade deficit especially hurts Wisconsin because it means that much of the goods once produced in Wisconsin are now produced in China and the rest of the world. This means that jobs have to be eliminated in order for the companies to stay competitive. According to US Department of Labor, Bureau of Labor Statistics, there were approximately 579,000 people employed in manufacturing jobs in 2001 ([www.wischamberfoundation.org](http://www.wischamberfoundation.org)). This ranks Wisconsin number two for the most employees in manufacturing compared to the rest of the United States. By 2002 the Department of Workforce Development has already estimated a loss of 12,000 manufacturing jobs in Wisconsin and the loss are continuing to increase each day ([www.wischamberfoundation.org](http://www.wischamberfoundation.org)).

The loss of manufacturing jobs in Wisconsin is causing a downward spiral effect on the state's economy. With the loss of jobs comes an increase in workers compensation and other state organizations used to benefit workers who are without jobs. The results of this are that taxes are increased in order to help keep the education system intact along with other county and city projects. The tax burden then falls on those who are employed in Wisconsin. The increase in taxes to the working individuals causes them not to consume as many goods, which then in turn means that companies who produce or sell goods suffer financially. This leads brings us back to the beginning were due to lack of consumption causes companies to cut jobs in order to stay competitive.

### Problem Statement

The purpose of this study is to examine the impact of China-based manufacturing on the Greater Wisconsin manufacturing companies. This study will be conducted as a result of increasing concerns by Wisconsin manufacturing clients that competition from China is severely affecting their businesses. This paper will include data which will explain whether or not China-based manufacturing companies have an effect on local Wisconsin companies, and if so, the data will show the possible contributing factors. The data will also show what type of businesses are most likely to be affected by China's manufacturing and why.

The study will look at 622 randomly chosen local Wisconsin companies which produce, sell, or consume products in various types of industries. A telephone survey will be administered by students in a marketing class at the University of Wisconsin-Stout. The survey will be conducted with the firm's top executive, i.e. vice president, general manager, and/or the operations manager. The data will then be collected and analyzed so that conclusions can be made from the results. After studying the results and reviewing the literature, possible solutions will be made.

### Research Objectives

The objectives of this study are:

1. Determine if the target market is facing competition from manufacturing firms that operate in China.

2. Identify if the source of Chinese competition is from multinational companies utilizing Chinese manufacturing firms, Chinese-owned manufacturing firms or both.
3. Determine if the target market perceives a positive or negative impact due to China's manufacturing presence.
4. Identify the percent increase or decrease in future sales if the target market does not make any changes in response to Chinese competition.
5. Determine the target market's overall opinion regarding firms operating in China (i.e., production costs, lead-time, quality, technology, labor costs, financial terms, social and governmental restraints, environmental restrictions, and supplemental costs).
6. Determine any perceived differences between manufacturing firms operating in China and those operating in the United States.
7. Identify any countries that the target market believes will be a competitive threat over the next three years. In addition, identify the magnitude of the impact that each country will have as perceived by the target market.
8. Identify what, if any, actions the target market is taking in response to manufacturing competition from other countries.
9. Determine what the State of Wisconsin should do in response to competition from other countries.
10. Determine if the Target market is familiar with Manufactures Extension Partnership (MEP) and its purpose.

11. Determine if MEP has helped the target market to become more productive and efficient.
12. Determine the target market's direct demographic information. (i.e., number of employees, geographic location of markets, type of operation (Head Quarters(HQ), branch, or stand-alone)

### Significance of the Study

This study is important for manufacturing companies in Wisconsin to help compete with China's manufacturing if it is shown that China is a major competitor with Wisconsin. If the results show that China is a major competitor, Wisconsin companies may be able to decrease lay-offs, increase company profits, increase Wisconsin's economy, and possibly make a safer work environment and a more efficient production process. If Wisconsin companies need to become more competitive as a result of these study. There may be an increase in orders for products from other manufacturers which may, in effect, lead to better job security for employees. Also, with increased orders for products due to better competitiveness, companies may be able to increase their profits through selling more products. As Wisconsin companies increase their profits the state may profit from the taxes the companies would have to pay and the workers would have more compensation for the work they do, which would increase the spending in the local communities.

Furthermore, as companies increase their profits they may have more money to invest in employee safety, training, and research and development so that they can produce products more effectively and efficiently. Also, if Wisconsin companies are able to

reduce huge losses of manufacturing jobs to China, because of this study, it may help to decrease the possibility of Wisconsin becoming a two-tier work economy of highly technical and low-skilled workers that squeezes out Middle America.

### Limitations

The limitations of this study are:

1. The study is only able to look at 619 of the more than three thousand manufacturing companies in Wisconsin.
2. Each company may run differently because of competitive advantages over other companies in the same market, which would make each company unique in its own way and also would make this study hard to generalize for other similar manufacturing companies that were studied.

### Assumptions

The assumptions of the study are:

1. That every company chosen to be included in the survey will be willing to share their company's information.
2. That every company knows who or where they are losing business to.
3. That the truth about China's manufacturing sector as it relates to high-tech and high-end products is not misleading.

### Definitions

**Foreign Direct Investment (FDI)** – Direct investment in productive assets by a company incorporated in a foreign country, as opposed to investments in shares of local companies by foreign entities. *www.investorwords.com*

**Multinationals** – Multinational enterprises include enterprises, whether they are of public, mixed or private ownership, which own or control production, distribution, services or other facilities outside the country in which they are based. *International Labor Organization*

**World Trade Organization (WTO)** – An international agency which encourages trade between member nations, administers global trade agreements, and resolves disputes when they arise. *www.investorwords.com*

**Gross Domestic Product (GDP)** – The total market value of all final goods and services produced in a country in a given year, equal to the total consumer, investment and government spending, plus the value of exports, minus the value of imports.

*www.investorwords.com*

**Lead Time** – The amount of time between the placing of an order and the receipt of goods. *www.investorwords.com*

**Northwest Wisconsin Manufacturing Outreach Center (NWMOC)** – The NWMOC is a non-profit organization that helps manufacturers be successful through modern tools and strategies such as, Flow Manufacturing, Lean Manufacturing, Strategic Planning, ISO and QS 9000, ERP and MRP business systems, Business Coaching, and Supply Chain weakLink assistance. Manufacturers can greatly improve their quality, lead-time, productivity and profitability. *http://nwmoc.uwstout.edu*

**Wisconsin Manufacturing Extension Partnership (WMEP)** – Provides technical expertise and hands-on implementation assistance to small and midsize manufacturing firms on advanced manufacturing technologies and business practices. *[www.wmep.org](http://www.wmep.org)*

## Chapter II

### Review of Literature

This chapter summarizes literature regarding the past history of China's economy, and also includes the effects of China's entry into the World Trade Organization (WTO) for both China and the United States (U.S.), and China as a market for the United States. Also, this chapter will take a closer look at China's threat to the world and how the relations are between the U.S. and China. Then, this chapter will inspect the reasons why U.S. companies are penetrating China. Next, there will be an examination of some of the major industries in the United States that are currently being affected by China, and then how China's currency has affected the U.S. along with other nations. Finally, there will be a summary of Wisconsin, its economy, and the effects of overseas competition.

### China's Past Economy

Since the late 1970's few nations have dramatically and rapidly grown economically as China has. The country's real gross domestic product (GDP) has grown to over \$1.3 trillion from \$106 billion in 1970 (Hale, 2003). GDP is the total market value of all final goods and services produced in a country in a given year, equal to the total consumer, investment and government spending, plus the value of exports, minus the value of imports ([www.investorwords.com](http://www.investorwords.com)). For almost the last two decades China has experienced tremendous economic growth while the rest of the industrial world has been experiencing an economic recession. China, the world's most populous nation, has radically liberalized its economy and gone from producing mainly low-quality and low-tech goods, to now being able to produce relatively high-tech and very sophisticated

exportable goods. A major factor of this is that China in 1978 initiated a successful Reform and Open Door policy which has promoted China's economic growth. This policy along with a vibrant private sector has attracted nearly \$500 billion in Foreign Direct Investment (FDI), which has generated a significant growth and economic change (Hale, 2003). Foreign direct investment is direct investment in productive assets by a company incorporated in a foreign country, as opposed to investments in shares of local companies by foreign entities ([www.investorwords.com](http://www.investorwords.com)). The important donation of FDI to China's growth can be best understood by taking a closer look at China's "Open Door policy".

After the communist victory in 1949, China isolated itself from the industrial world for about 30 years (Fan, 1998). According to Fan, largely due to military conflicts and political reasons, the government had pursued a policy of self-reliance for that period, excluding foreign investment and limiting international trade with the industrial world. Also during that period, the economic system that China adopted was that of a Communist state planning system. This centrally planned economy, prior to 1978, dictated to every factory by the state the products to be made and in what quantity, what materials should be used, where the materials should come from, how much they should cost, and where these products should be sold and for how much. The system was characterized by serious market distortions, inefficient bureaucratic administration, an unmotivated work force, along with many other types of inefficiencies. As a result, when the economic reforms were set off in 1978, China noticed that it not only had a major shortage of capital relative to its plentiful work force but also had backward production technology relative to the rest of the industrial world. A clear strategy to

overcome the technological gap in China was to utilize foreign advanced technology, mainly by attracting FDI. China's choice to open its economy by promoting trade and FDI seems to have given it an advantage, and helped China integrate more thoroughly into the world economy than did South Korea or Japan after World War II. More recently, China has entered the World Trade Organization (WTO) which has further opened their markets to other countries.

### China's Entry into the World Trade Organization

In 2001, after fifteen years of hard negotiations in, China became a member of the World Trade Organization (WTO). The WTO is an international agency which encourages trade between member nations, administers global trade agreements and resolves disputes when they arise ([www.investorwords.com](http://www.investorwords.com)). Before China entered the WTO, China had the world's tenth largest trading economy and the third largest economy after the United States and Japan. A World Bank report estimates that China's share of world trade may triple from 3 percent in 1992 to 9.8 percent in 2020, making China the world's largest trading nation after the United States (Cheng, 2003). China's application to the WTO has come under fire because China was still considered a developing country despite its remarkable trade and economy.

With China's WTO membership many changes have to be made including laws, policies, and institutions in order to bring them into conformity with the rest of the countries under the international trade norms. Much of the controversy and negotiations that took place in order for China to become a member of the WTO centered around many of the Chinese practices which disturbed trade flows in and out of China, such as

nontariff barriers and high tariffs, restrictions on foreign investment, government subsidies, ineffective protection of intellectual property rights, and lack of national treatment for foreign firms.

### China's Threat to the World

By September 2002, China's official foreign reserves had reached \$258.6 billion; the world's second largest, after Japan's (Hsiung, 2003). According to Hsiung, scarcely five months after China's accession, the WTO announced in a report released on May 2, 2002, that according to the gross national product (GNP) figures China's economy had become in 2001 the world's fourth largest, exceeded only by the economies of the EU, the United States, and Japan. Also, with reference to imports and exports, China ranked sixth in the world out of the thirty top trading nations. These rankings are giving people around the world fear of a new world leader in the future.

With China's WTO membership there has been three more additional possibilities that could create a good scare. The first is that China may become a "sink for cheap labor," thus causing a loss of jobs not only in the United States but in other developed countries (Kurlantzick, 2002). The second worry is that China may become the world's factory. That is, that the majority of all industry products are produced in China. What if something should go wrong with this common world factory (Garten, 2002)? Third, there is a possibility that China could become unstable internally as China attempts to meet the needs of the obligations set forth by the WTO causing socioeconomic disorder within the country. Finally, a more menacing interpretation is being applied to China's motives. Many now believe that China's communist leaders are simply exploiting their

own peasant population in an attempt to capture a preponderance of Western industrial production, reduce their present technological disadvantage, and expand their already considerable military power at the expense of the United States (McGarvey, 2003). Contrary to these worries some theorists do not believe China will succumb to these pitfalls.

One perspective that is opposing China's possible negative outcomes is (Yu, 2001), who believes that China will be a good "team player", with respect to China adhering to the WTO's obligations. A similar view by an official in Washington, D.C. claims that China reasonably can be expected to take "very seriously its commitments, and is working hard to implement them" (Donnelly, 2002). A similar argument has been offered by Richard Foristel (2001), adding that China is "not an aggressive player," although "intensively nationalistic."

Foristel observed China as "now prepared to let foreign firms compete on its home turf and is teaching itself world-class management methods," adding, "The country wants an effective social security system, health care for its retired, unemployment insurance, and environmental protection."

Obviously, the long-term effects of China's entry into the WTO remain to be determined. However, right now it is far from clear as to whether or not will benefit from its entry into the WTO. The fact that China now has a voice with in the WTO for the developed nations holds the potential for an increase in China's political influence to countries around the world. China also has a chance to become a world leader with their WTO membership, competing with top nations, including the United States.

### China's Relations with the U.S.

There are many in the United States who are aware of China's economic drive, courtesy of its WTO membership, as the beginning of "an inescapable process of China replacing the United States as the dominant power in Asia" (Perlez, 2002). For the individuals who hold this perspective they can point to the spiraling increases in U.S. trade deficits with China, which reached \$74.7 billion in 1999 and \$90.2 billion in 2001 (Hsiung, 2003). To put it in simple terms: For every dollar of goods the United States sends to China, they export back \$6 worth (McGarvey, 2003). To them, the issue is not just about trade, but dread that the United States and China will be in a strong competition over who will be the dominant power over the Asia Pacific Region. Others in the United States point out that the removal of global textile restrictions coupled with China's continued unfair trade practices as two of the key factors to any gains in trade with China. However, optimists of the United States-China relations believe that China's participation in the world market will stimulate U.S. exports to the country and to help eliminate the United States trade gap with China. It should be known however, that the U.S. trade deficit with China now is the largest in the world, standing at \$103 billion in 2002 (Vargo, 2003). Furthermore, Vargo explains, China now accounts for close to one-third of America's total deficit in manufactured goods trade.

At the center, China's WTO accession to the United States means greater accessibility to China's resources and markets. At the end of the day, firms, not governments, will largely determine the delivery of goods and services to China (Quinlan, 2002). The majority of U.S. companies do not see China any differently then

they do any other foreign market. That is, U.S. companies would rather sell their products through their foreign affiliates rather than have to ship the products overseas. Especially when there are huge advantages in a country such as inexpensive labor and an enormous consumer market waiting to be tapped.

With China's massive labor and consumer markets which set it apart from the rest of the world, it makes it hard for many U.S. companies to not want to penetrate the walls of China. For companies such as Eastman Kodak, Motorola, General Motors, Compaq, and IBM find that by not being in China they are at a competitive disadvantage to their major competitors. For these companies along with many others, China's admission into the WTO represents a go ahead to not only trade, but also to invest. These companies also want to and need to enhance their existing ties with their foreign affiliates or instead create new ones. China's accession into the WTO will allow U.S. parent companies and affiliates to become even more integrated due to the elimination of many nontariff barriers, lower tariffs, improved intellectual property rights, and industry deregulation. A positive attribute of lower tariffs is that it will allow both U.S. and China to exchange parts, materials, and finished goods on a more cost-effective basis. The greatest danger on the U.S. and China trade front is that while many in Washington view China as a "strategic partner," American businesses have increasingly embraced the mainland as a "strategic partner" (Quinlan, 2002).

### U.S. Multinationals in China

U.S. multinationals originally penetrated China due to their massive and untouched consumer market. Multinationals enterprises include enterprises, whether they are public, mixed or private ownership, which own or control production, distribution, services or other facilities outside the country in which they are based (International Labour Organization). Total assets of U.S. multinationals in China ballooned from \$2.1 billion in 1990 to nearly \$33 billion by 1999 (Quinlan, 2002). According to Quinlan, in the early 1990's, reaching the Chinese consumer required "barrier-jumping" investments to overcome tariffs and other measures that discriminated against trade. After the multinational corporations were inside China, U.S. affiliates were mostly independent, with few links to their parent company. Also with trade restrictions and transportation costs integration of parent firms with their affiliates was slowed down. So the bulk of what the affiliates produced was not for export but for the local markets in China. Accordingly, local sales by U.S. affiliates accounted for more than 90 percent of their total sales in 1990 (Quinlan, 2002). Quinlan states that in addition, that share then declined slightly but still hovered around 84 percent in 1995, well above the global average of 67 percent.

Today, the key motivation for U.S. multinationals is still access and to tap into the Chinese consumer market. China now has high penetration rates for a wide range of consumer goods, that is, today many more Chinese consumers buy many more goods (Hale, 2003). One of the critical challenges of U.S. multinationals is to get to the isolated customers in a fragmented country such as China. The mainland of China is not a unified market such as the United States, but many markets made up of varying dialects,

infrastructure, and different economic developments. These issues combined with high sensitivity to the brands they choose, quality-control concerns, and barriers between countries, mean that U.S. multinationals must adapt to the local tastes, customs and market conditions in China.

To U.S. firms China has turned out to be more than just a market. U.S. multinational firms have found that since China's economic conditions and investment policies have changed over time, the U.S. also had to change their strategies when dealing with China. So, by the mid-1990's U.S. multi-nationals had moved from their previous independent affiliates strategies to those of more market-seeking strategies. Market-seeking investment was increasingly complemented by efficiency-seeking investment as more U.S. firms turned to the mainland as a low-cost and more liberal economic policies allowed firms to outsource more functions and transfer more activities to their affiliates (Quinlan, 2002). In the meantime, U.S. parent-affiliate linkages became much tighter and more complex. The primary reason for this increase in integration was due to the manufacturing of goods to the Chinese market and goods for export, as was the increase in more labor-intensive production.

#### Industries Affected by China

Manufacturing is truly the innovation industry in the United States, without which the rest of the economy could not prosper (Vargo, 2003). Furthermore, Vargo states, manufacturing performs over 60% of the nation's research and development. Manufacturing dictates the technological ability of the U.S. to sustain its global leadership and national security. In addition, manufacturing is vital to the U.S. to

maintain the standard of living because it is the means in which the United States pays its way in the world.

China is a growing concern among manufactures in the Midwest. Despite recent promising signs that the manufacturing sector is recovering from its three year long recession, U.S. manufacturers continue to struggle in the face of weak demand and the most intense global competition in history (Vargo, 2003). A poll taken during a China business strategy conference in Cleveland revealed that 85% of the 360 companies that responded said they estimated they lose between 5% and 20% of their jobs to Chinese companies (Prizinsky, 2003). Furthermore, the article states, the remaining 15% said things are even worse: they lose one-third to more than half their bids to Chinese producers. Franklin J. Vargo, the vice president of international economic affairs for the National Association of Manufactures (NAM), stated that shipments of manufactured goods have fallen an astonishing \$270 billion since 2000, and 2.8 million American factory jobs have been lost (Vargo, 2003). The NAM represents 14,000 U.S. manufacturing companies, including 10,000 small and medium-sized firms. In addition, Vargo declared that manufacturing represents 14 percent of the American workforce, but has accounted for nearly 90 percent of all job losses since total U.S. employment peaked in March 2001.

One of the largest threats to U.S. manufacturing has been to the textile industry. Although the U.S. law dealing with China's accession to the World Trade Organization contains safeguard provisions to restrict imports if there are surges,

“The U.S. government has stood by while China's textile and apparel exports to the United States have surged 140 percent from March 2002 to March 2003, the biggest increase in history. During the same one year

period, the U.S. textile industry closed more than 50 plants and more than 40,000 textile workers lost their jobs” (Hagstrom, 2003).

More than 200 U.S. textile plants have closed since 1997, putting about 200,000 people out of work, according to the American Textile Manufacturers Institute (Kirchhoff, 2003). Kirchhoff explains, the textile industry predicts China could eventually capture most of the U.S. market.

Another industry that is facing similar circumstances is the electronics and hardware industry. China has become the largest single exporter of high-tech goods including components and equipment to the U.S. (Purchasing, 2003). One common reason why China has such market dominance is because of their plentiful and inexpensive labor; also bulk component prices are much cheaper in the Far East compared to the United States. China’s cost of labor is about 53 cents an hour (Pryweller, 2003). Also, a well-paid engineer in China pockets well under \$10, 000 a year (James, 2003). What’s most remarkable is that Chinese-produced power supplies, despite the high manual-labor content, are of high quality (Mankikar, 1997).

Furthermore, Mankikar explains, that the typical defect rates are 500 defects per million (dpm); in some instances, the manual-intensive procedures have yielded defect rates as low as 250 dpm. This means that China’s industries can put more workers on an assembly line to inspect products and reach close to the same dpm rates as the U.S. can by using more mechanical machinery to do the work. The difference is that by the U.S. using more innovative machinery, which requires less people to operate, causes people to loss their jobs. Industries such as chemicals, wood, paper, steel, furniture, plastics, and tool and die have all appealed to Washington to stop “unfair” Chinese competition. One

of the biggest issues of “unfair” Chinese competition is the overvalued American dollar to the undervalued Chinese yuan.

### China's Currency

Unlike most other countries that allow market forces to set the relative value of their currencies, China has pegged the value of its yuan at around 8.3 per U.S. dollar since 1994 (Triplett, 2003). In addition, Triplett says, Given China's remarkable growth, economists estimate the yuan may be now be undervalued by up to 40 percent. Every time the dollar notches down, the Chinese currency automatically follows suit, making that country's exports even more competitive (Garten, 2003). China is more competitive because they are able to produce products much cheaper than they should be, further hampering U.S. manufacturers ability to compete. A slow decline of the U.S. dollar is the least disruptive way for the United States to put its financial balance on more sustainable footing, for now the dollar has a long way to go. C. Fred Bergsten, director of the Institute for International Economics, told Congress in late June that although the dollar has dropped against other currencies by 10% to 20% since early 2002, it's only halfway to where it should be (Garten, 2003).

In order for this strategy to work, other nations must allow market forces to work and to allow their currencies to climb. However, as long as the tight yuan and U.S. dollar linkage exists, other Asian nations won't allow their currencies to move upward. The other Asian nations refuse to put themselves at a competitive disadvantage. China has maintained there devalued yuan against the dollar despite an enormous increase in productivity, product range, production capability, foreign investment inflows, quality,

and other factors that would cause most other countries to increase the value of their currency. China, for now, does not want to increase the value of its yuan because they feel that their trade surplus would not last. Also, China feels its currency reserves contain speculative funds that could quickly reverse course (Garten, 2003). Furthermore, China is afraid that by increasing their yuan that a social upheaval could occur because of higher unemployment resulting from a decline in exports.

China's ability to prevent the upward mobility of its currency has allowed China to accumulate dollar reserves quicker than any other nation. China's reserves at the end of the end of August 2003 stood at \$365 billion dollars, 120 percent of China's annual exports and nearly one-third of China's \$1.23 trillion GDP (Vargo, 2003). Furthermore, Vargo adds, China has added \$110 billion to its dollar reserves in just the last 12 months, which is the largest increase in the world. In addition, China's massive purchases of dollars are pumping so much into their local currency, that the Chinese economy is running a great risk of becoming overheated. And risks a severe asset bubble, in which the inflation that will follow because of it could further diminish the living standards of many in the country. The International Monetary Fund's (IMF) recent international economic report makes it plain that currency reserve buildups by Asian nations are destabilizing to the world economy and need to be addressed (Vargo, 2003). As a result, a currency revaluation that would slow China's reserve buildup would be a "win-win" situation for not only China and the U.S., but also for the rest of the world.

### Wisconsin Manufacturing

During the 20<sup>th</sup> century, Wisconsin, due to the increase in automobile manufacturing became a large and unstable machining industry. The machining industry, which provides over half of Wisconsin's exports, is the sector most sensitive to export fluctuation and import competition (Nichols, 2000). Wisconsin's manufacturing sector is an industry which requires workers to be highly skilled in the metal trades. The percent of Wisconsin's workforce employed in the manufacture of non-electrical machinery is the largest of any state in America (Nichols, 2000).

By early 1998, businesses were thriving, manufacturers were paying overtime, and the largest challenge they faced was to find enough skilled workers to fill many empty positions. Today, the scenery is significantly different. The labor shortage has been replaced with massive cutbacks in manufacturing employment. There have been 88,000 jobs lost in the past three years (Content, 2003). The United States as a whole has lost 2.8 million manufacturing jobs since 2000 (Vargo, 2003). Phyllis Eisen of the Manufacturing Institute said, "Some of those jobs are gone forever, either moved offshore or replaced by high-tech processes that boost productivity" (Content, 2003). The major cause of the job losses in Wisconsin along with the rest of the United States is the threat of Chinese manufacturing. Eisen added, "China's going to be, certainly to this decade alone, what Japan was to the 1980's, only blown up 20 times the size" (Content, 2003). Daniel Meckstroth, an economist with the Manufacturers Alliance in Washington, D.C. added "what's amazing about this downturn is its duration, you have to go back to the Great Depression to find anything that's been as long as this downturn in manufacturing" (Content, 2003).

Wisconsin does not only represent the metal, machinery, and auto industries. The state's industries also embody the paper, wood, plastics, and textiles industries. These industries also represent the immense amount of people in the state who are unemployed.

## Chapter III

### Research Methods

This chapter will examine what population, sample, design and instruments were used in order to further investigate the purpose of this study. The purpose of this study is to determine how much of an impact, if any, China's manufacturing has on Wisconsin's manufacturing sector's target market.

Objectives for this study are:

1. Determine if the target market is facing competition from manufacturing firms that operate in China.
2. Identify if the source of Chinese competition is from multinational companies utilizing Chinese manufacturing firms, Chinese-owned manufacturing firms or both.
3. Determine if the target market perceives a positive or negative impact due to China's manufacturing presence.
4. Identify the percent increase or decrease in future sales if the target market does not make any changes in response to Chinese competition.
5. Determine the target market's overall opinion regarding firms operating in China (i.e., production costs, lead-time, quality, technology, labor costs, financial terms, social and governmental restraints, environmental restrictions, and supplemental costs).
6. Determine any perceived differences between manufacturing firms operating in China and those operating in the United States.
7. Identify any countries that the target market believes will be a competitive threat over the next three years. In addition, identify the magnitude of the impact that each country will have as perceived by the target market.
8. Identify what, if any, actions the target market is taking in response to manufacturing competition from other countries.
9. Determine what the State of Wisconsin should do in response to competition from other countries.

10. Determine if the Target market is familiar with Manufactures Extension Partnership (MEP) and its purpose.
11. Determine if MEP has helped the target market to become more productive and efficient.
12. Determine the target market's direct demographic information. (i.e., number of employees, geographic location of markets, type of operation (Head Quarters (HQ), branch, or stand-alone)

### Population and Sample

The population of this study included 3,116 manufacturing companies, which have been identified by the U.S. Trade Deficit Review Commission (USTDRC) as having a significant production shift from the U.S. to China. The 3,116 companies were determined by Reference USA software (2003) which was located in the University of Wisconsin-Stout's Placement and Co-Op office. With using the Reference USA software the ten SIC numbers were inputted. Next, the state (Wisconsin), counties, and number of employees (10-499) were selected. The next step that was used was selecting each of the 72 counties in Wisconsin separately, and then printing out the manufacturing companies that were listed for each county. Once each county's manufacturing companies were printed out they were then taken to the Marketing Research Class (BUMKG-479) to select a sample from the 3,116 companies.

The University of Wisconsin Stout's Marketing Research class choose to us a random ordinal technique used for sample selection. Out of 3,116 companies, every fifth company was selected in order to make up the sample size of 600 ( $3,116 / 600 = 5.19$ ; rounded to 5). The total sample size was then 623 companies. To select a random sample a page containing a list of companies was randomly selected from the pile and a pencil was dropped to select the first company for the sample. After that, every fifth

company was selected. Some duplicate companies were found because the same company was located in different Wisconsin counties. The counting continued from the 5<sup>th</sup> company (the duplicate) in order to maintain the random sampling procedure. A total of four companies were found to be duplicates, which brought the final sample size to 619 companies.

### Research Design

The design used in this study is descriptive. The survey used was based on a previous study and survey conducted by Minnesota Technology, Inc. The respondents to the survey will be a top company officer, including the owner, Chief Executive Officer (CEO), Chief Operating Officer (COO), President, Vice President, and General Manager. The survey's eighteen questions will target manufacturing sectors that researchers for the U.S. Trade Deficit Review Commission (USTDRC) identified as having significant production shifts from the U.S. to China. These are:

SIC 22	Textile mill products
SIC 23	Apparel and other textile products
SIC 26	Paper and allied products
SIC 28	Chemical and allied products
SIC 30	Rubber and misc. plastic products
SIC 34	Fabricated metal products
SIC 35	Industrial machinery and equipment
SIC 36	Electrical and electronic equipment
SIC 37	Transportation equipment
SIC 39	Games, toys, etc. and sporting goods NEC

This survey will be conducted by twenty University of Wisconsin-Stout students participating in the Marketing Research class (BUMKG-479) under the supervision of Assistant Professor Thor Burnvedt, and Project Coordinator Eric Weiss during the fall of 2003. Due to time, and financial constraints, it was determined that a

telephone survey will be utilized to interview the individuals included in this study. This technique is expected to result in a 50% (+/- 10%) response rate and will allow the researchers to gather the required data in a fast and cost effective manner.

The Director of the Northwest Wisconsin Manufacturing Outreach Center (NWMOC) approved the survey prior to its use in the field. The survey included 18 questions that are directly related to the objectives of the study and was designed to take a maximum of 12 (+/-2) minutes to complete. Also, the individuals administering the phone survey will be instructed to attempt to make contact with a person in an executive position within the company three times before revoking that company from the study.

The types of questions that are included in this survey are:

- Dichotomous (yes/no)
- Multiple Choice
- Open-ended
- Likert Scale
- Ranking

A pilot test was given to four companies and conducted by four members of the Marketing Research class to prove its effectiveness. The pilot test was used to ensure that each survey could be completed in an average of 12 minutes. Also, to make certain the survey was clear to the interviewees, and also to make sure the survey was easy for the interviewer to administer. After conducting the pilot test, the Marketing Research team concluded that the survey was clear, accurate, and ready for data collection. See Appendix A for a sample of the survey instrument used.

### Instrumentation

The data from the surveys was collected from each of the twenty students participating in University of Wisconsin-Stout's Marketing Research class (BUMKG-479). Each student roughly got 30 surveys ( $619 / 20 = 30.95$ ) to administer to the participants that were selected. The participants were top company officials, such as, CEO's, COO's, owners, presidents, vice presidents, etc. The responses from the participants were collected over the phone and recorded on survey print out. The data was then inputted into a Microsoft Excel spreadsheet. From the Excel spreadsheet results from the data were analyzed and interpreted.

The survey was developed during three weeks of the 2003 fall semester at the University of Wisconsin-Stout (October 13<sup>th</sup> - October 13<sup>th</sup>). The pilot test for the survey was conducted on November 4<sup>th</sup> 2003. Next, the survey was administered from November 6<sup>th</sup> to the 18<sup>th</sup>. Finally, the data was inputted into a Microsoft Excel spreadsheet from November 19<sup>th</sup> to the 21<sup>st</sup>.

Each of the questions represented in survey, for the exception of question 1, corresponded to the twelve objectives listed on page 25. Each of the twelve objectives is related to the overall research problem of this study; is Chinese manufacturing having an impact on Wisconsin manufactures? The types of questions included in this survey were multiple choice, dichotomous, open-ended, Likert scale, and ranking.

The limitations of this study are that potential problems do exist with data collection through survey/questionnaire. One of the problems is that some questions are predetermined and there are missing issues. This problem was minimized by first getting approval from the Director of the Northwest Wisconsin Manufacturing Outreach Center

before administering the survey. The second potential problem is that there is over interpretation of the data. Over interpretation of the data was addressed through the focus on the companies which the researchers of the USTDRC identified as having a significant production shift from the U.S. to China. Finally, response bias can occur when getting information from only one source for information. This problem was reduced by involving ten different manufacturing industries in the study. Also, a random ordinal sample was taken to add to the studies validity in giving each of the 3,116 participants an equal opportunity to be included in the research study.

## Chapter IV

### Results

The purpose of this study was to assess the impact of Chinese manufacturing on small to medium sized manufacturers within the State of Wisconsin. The target market consisted of 619 small to medium-sized manufactures that employed between 10 and 499 employees and had physical plant operations inside the State of Wisconsin. Of the 619 manufactures, 239 provided useable information. This resulted in a total response rate of 38.6%.

The objectives of this study were fulfilled by the target market's response to eighteen survey questions. The answers to the questions in the survey were sorted by: total respondents, and the Northwest Wisconsin Manufacturing Outreach Centers 33 county district versus Wisconsin Manufacturing Extension Partnerships 39 county district. This chapter will show results in regard to the twelve objectives of this study.

### Findings

Descriptive statistics were utilized to illustrate results of all survey responses showing either or both percentages or mean averages for the total group of respondents. Tables have been created showing aggregate responses for each question. Graphs and tables for each item can be found in Appendix B. The responses for the open-ended questions can be found in Appendix C.

	<b>Total</b>		<b>WMEP</b>		<b>NWMOC</b>	
	#	%	#	%	#	%
<b>Yes</b>	159	66.5	132	70.2	27	52.9
<b>No</b>	80	33.5	56	29.8	24	47.1
<b>Total</b>	239	100.0	188	100.0	51	100.0

The first objective determined if the target market was facing competition from manufacturing firms that operate in China. This objective was reached using question number 3. The possible responses for this question were either “Yes” or “No.” Of those surveyed, 159 or 66.5% responded that they are Facing Competition from manufacturing firms operating in China; and 80 or 33.5% responded that they are Not Facing Competition from manufacturing firms operating in China.

	<b>Total</b>		<b>WMEP</b>		<b>NWMOC</b>	
	#	%	#	%	#	%
<b>Multinational manufacturing firms operating in China</b>	34	14.2	29	15.4	5	9.8
<b>Chinese-owned manufacturing firms</b>	27	11.3	21	11.2	6	11.8
<b>Both</b>	98	41.0	82	43.6	16	31.4
<b>No Response</b>	80	33.5	56	29.8	24	47.0
<b>Total</b>	239	100.0	188	100.0	51	100.0

The second objective identified if the source of Chinese competition was from multinational companies utilizing Chinese manufacturing firms, Chinese-owned manufacturing firms, or both. Of the 159 respondents who answered Yes to question 3 (facing competition from manufacturing firms operating in China), 34 or 14.2% said the source of competition was from multinational manufacturing firms operating in China; 27 or 11.3% said the source of competition was from Chinese-owned manufacturing firms;

and 98 or 41.0% said that the source of competition was from both multinational manufacturing firms operating in China and Chinese-owned manufacturing firms. The respondents who answered no to question 3 had No Response, totaling 80 or 33.5%.

	Total		WMEP		NWMOC	
	#	%	#	%	#	%
<b>Benefits your company</b>	17	7.1	12	6.4	5	9.8
<b>Hurts your company</b>	160	67.0	132	70.2	28	54.9
<b>Has no impact on your company</b>	62	25.9	44	23.4	18	35.3
<b>Total</b>	239	100.0	188	100.0	51	100.0

Objective three determined if the target market perceived a positive or negative impact due to China's manufacturing presence. Of those surveyed, 159 or 66.5% responded that they are Facing Competition from manufacturing firms operating in China; and 80 or 33.5% responded that they are Not Facing Competition from manufacturing firms operating in China. Furthermore, of the total respondents, 17 or 7.1% responded that they have benefited from China's manufacturing presence; 160 or 67.0% responded that they Have Been Hurt by China's manufacturing presence; and 62 or 25.9% have Not Been Impacted by China's manufacturing presence.

The 3 most popular answers for benefiting a company were some companies are using China manufactured products with 5 total respondents, Cheaper Materials with 3 total respondents, and Makes Company More Competitive with 2 total respondents.

The 3 most popular answers for hurting a company were Lost Customers/Sales with 76 respondents, Mass Production/Cheaper Labor/Lower Cost in China with 43 respondents, and Competition (increased or unfair) and Growth Difficult with 15 respondents. The 3 most popular answers for having no impact were No Response with 21 respondents, No Competition with China with 16 respondents, and Rare/Specialized Industry or No Major Impact with 15 respondents. A detailed list of responses is available in Appendix C.

#### Percent increase in sales for 2003

	Total		WMEP		NWMOC	
	#	%	#	%	#	%
No increase	233	97.5	183	97.3	50	98.0
An increase	6	2.5	5	2.7	1	2.0
Total	239	100.0	188	100.0	51	100.0

The fourth objective identified the percent increase or decrease in future sales if the target market did not make any changes in response to Chinese competition. Of the total respondents, 233 or 97.5% stated that they have Not Yet Experienced an increase in sales for 2003 and 6 or 2.5% Have Experienced an increase in sales for 2003. The average percent in sales of the 6 companies that reported increase in sales in 2003 was an increase of 8.0%.

#### Percent decrease in sales for 2003

	Total		WMEP		NWMOC	
	#	%	#	%	#	%
No decrease	123	51.5	89	47.3	34	66.7
A decrease	116	48.5	99	52.7	17	33.3
Total	239	100.0	188	100.0	51	100.0

Of the total respondents, 123 or 51% responded that they have Not Experienced a decrease in sales in 2003; and 116 or 48% Have Experienced a decrease in sales in 2003.

The average percent decrease in sales of the 116 companies that reported a decrease in sales in 2003 was a decrease in of 14.5%.

#### Percent increase in sales for 2004

	Total		WMEP		NWMOC	
	#	%	#	%	#	%
No increase	231	96.7	182	96.8	49	96.1
An increase	8	3.4	6	3.2	2	3.9
Total	239	100.0	188	100.0	51	100.0

Of the total respondents, 231 or 96.7% responded that they Do Not Expect to experience an increase in sales in 2004 and 8 or 3.4% Expect to experience an increase in sales in 2004. The average percent increase in sales of the 8 companies that Expect to experience an increase in sales in 2004 was an increase of 10.8%.

#### Percent decrease in sales for 2004

	Total		WMEP		NWMOC	
	#	%	#	%	#	%
No decrease	124	51.9	92	48.9	32	62.7
A decrease	115	48.1	96	51.1	19	37.3
Total	239	100.0	188	100.0	51	100.0

Of those interviewed, 124 or 51.9% responded that they Do Not Expect to experience a decrease in sales in 2004; and 115 or 48.1% Expect to experience a decrease in sales in 2004. The average percent decrease in sales of the 115 companies that Expect to experience a decrease in sales in 2004 was a decrease of 16.2%.

#### Percent increase in sales through 2005

	Total		WMEP		NWMOC	
	#	%	#	%	#	%
No increase	230	96.2	182	96.8	48	94.1
An increase	9	3.8	6	3.2	3	5.9
Total	239	100.0	188	100.0	51	100.0

Of the total respondents, 230 or 96.2% responded that they Do Not Expect to experience an increase in sales in 2005 and 9 or 3.8% Expect to experience an increase in sales in 2005. The average percent increase in sales of the 9 companies that Expect to experience an increase in sales through 2005 was an increase of 12.2%.

#### Percent decrease in sales through 2005

	Total		WMEP		NWMOC	
	#	%	#	%	#	%
No decrease	128	53.6	96	51.1	32	62.7
A decrease	111	46.4	92	48.9	19	37.3
Total	239	100.0	188	100.0	51	100.0

Of those surveyed, 128 or 53.6% responded that they Do Not Expect experience a decrease in sales in 2005. In addition, 111, or 46.4% Expect to experience a decrease in sales in 2005. The average percent decrease in sales of the 111 companies that Expect to experience a decrease in sales through 2005 was a decrease of 25.6%.

#### Percent increase in sales through 2007

	Total		WMEP		NWMOC	
	#	%	#	%	#	%
No increase	231	96.7	183	97.3	48	94.1
An increase	8	3.3	5	2.7	3	5.9
Total	239	100.0	188	100.0	51	100.0

Of the total respondents, 231 or 96.7% responded that they Do Not Expect to experience an increase in sales through 2007 and 8 or 3.3% Expect to experience an increase in sales in through 2007. The average percent increase in sales of the 8 companies that Expect to experience an increase in sales through 2007 was an increase of 12.5%.

**Percent decrease in sales through 2007**

	<b>Total</b>		<b>WMEP</b>		<b>NWMOC</b>	
	#	%	#	%	#	%
No decrease	136	56.9	105	55.9	31	60.8
A decrease	103	43.1	83	44.1	20	39.2
<b>Total</b>	<b>239</b>	<b>100.0</b>	<b>188</b>	<b>100.0</b>	<b>51</b>	<b>100.0</b>

Of those interviewed, 136 or 56.9% responded that they Do Not Expect to experience a decrease in sales through 2007 and 103 or 43.1% expect to experience a decrease in sales through 2007. The average percent decrease in sales of the 103 companies that expect to experience a decrease in sales through 2007 was a decrease of 31.5%.

Objective five determined the target market's overall opinion, regarding firms operating in China. The target market's overall opinion was based on production cost, lead-time, quality, technology, labor cost, financial terms, social and governmental restraints, environmental restrictions, and supplemental costs.

**Can produce at less cost**

	<b>Total</b>		<b>WMEP</b>		<b>NWMOC</b>		<b>Weighted Average</b>
	#	%	#	%	#	%	
<b>(5) Strongly agree</b>	186	77.8	148	78.7	38	74.5	4.7
<b>(4) Somewhat agree</b>	41	17.2	31	16.5	10	19.6	
<b>(3) Uncertain</b>	7	2.9	5	2.6	2	3.9	
<b>(2) Somewhat disagree</b>	3	1.3	2	1.1	1	2.0	
<b>(1) Strongly disagree</b>	2	0.8	2	1.1	0	0.0	
<b>Total</b>	<b>239</b>	<b>100.0</b>	<b>188</b>	<b>100.0</b>	<b>51</b>	<b>100.0</b>	

Of those surveyed, 186 or 77.8% Strongly Agreed with the statement that overall, firms operating in China can produce at Less Cost, and 41 or 17.2% Somewhat Agreed with the statement that overall, firms operating in China can produce at Less Cost.

#### Can produce with quicker turnaround

	Total		WMEP		NWMOC		Weighted Average
	#	%	#	%	#	%	
(5) Strongly agree	6	2.5	4	2.2	2	3.9	2.2
(4) Somewhat agree	20	8.4	19	10.1	1	2.0	
(3) Uncertain	67	28.0	51	27.1	16	31.4	
(2) Somewhat disagree	72	30.1	53	28.2	19	37.3	
(1) Strongly disagree	74	31.0	61	32.4	13	25.4	
<b>Total</b>	<b>239</b>	<b>100.0</b>	<b>188</b>	<b>100.0</b>	<b>51</b>	<b>100.0</b>	

Of those interviewed, 74 or 31.0% Strongly Disagreed with the statement that overall, firms operating in China can produce with quicker turnaround, 72 or 30.1% Somewhat Disagreed with the statement that overall, firms operating in China can produce with Quicker Turnaround and 67 or 28.0% were uncertain about the statement.

#### Can produce a better quality product

	Total		WMEP		NWMOC		Weighted Average
	#	%	#	%	#	%	
(5) Strongly agree	0	0.0	0	0.0	0	0.0	2.0
(4) Somewhat agree	10	4.2	9	4.8	1	2.0	
(3) Uncertain	59	24.7	46	24.5	13	25.5	
(2) Somewhat disagree	87	36.4	71	37.7	16	31.4	
(1) Strongly disagree	83	34.7	62	33.0	21	41.1	
<b>Total</b>	<b>239</b>	<b>100.0</b>	<b>188</b>	<b>100.0</b>	<b>51</b>	<b>100.0</b>	

Of the total respondents, 87 or 36.4% Somewhat Disagreed with the statement that overall, firms operating in China can produce a Better Quality Product, 83 or 34.7% Strongly Disagreed with the statement that overall, firms operating in China can produce a Better Quality Product and 59 or 24.7% were uncertain about the statement.

**Are more highly tooled**

	Total		WMEP		NWMOC		Weighted Average
	#	%	#	%	#	%	
							2.3
<b>(5) Strongly agree</b>	5	2.1	3	1.7	2	3.9	
<b>(4) Somewhat agree</b>	25	10.5	23	12.2	2	3.9	
<b>(3) Uncertain</b>	67	28.0	50	26.6	17	33.3	
<b>(2) Somewhat disagree</b>	78	32.6	64	34.0	14	27.5	
<b>(1) Strongly disagree</b>	64	26.8	48	25.5	16	31.4	
<b>Total</b>	239	100.0	188	100.0	51	100.0	

Of those surveyed, 78 or 32.6% Somewhat Disagreed with the statement that overall, firms operating in China are more highly Tooled, 67 or 28.0% were Uncertain about the statement, and 64 or 26.8% Strongly Disagreed with the statement that overall, firms operating in China are More Highly Tooled. The weighted average can be found in the above table.

**Can produce with cheaper labor**

	Total		WMEP		NWMOC		Weighted Average
	#	%	#	%	#	%	
							4.9
<b>(5) Strongly agree</b>	227	95.1	178	94.7	49	96.1	
<b>(4) Somewhat agree</b>	8	3.3	6	3.2	2	3.9	
<b>(3) Uncertain</b>	1	0.4	1	0.5	0	0.0	
<b>(2) Somewhat disagree</b>	1	0.4	1	0.5	0	0.0	
<b>(1) Strongly disagree</b>	2	0.8	2	1.1	0	0.0	
<b>Total</b>	239	100.0	188	100.0	51	100.0	

Of those interviewed, 227 or 95.1% Strongly Agreed with the statement that overall, firms operating in China can produce with Cheaper Labor.

**Receive more favorable financial terms**

	Total		WMEP		NWMOC		Weighted Average
	#	%	#	%	#	%	
							4.0
<b>(5) Strongly agree</b>	97	40.6	84	44.7	13	25.5	
<b>(4) Somewhat agree</b>	40	16.7	28	14.9	12	23.5	
<b>(3) Uncertain</b>	96	40.2	70	37.2	26	51.0	
<b>(2) Somewhat disagree</b>	6	2.5	6	3.2	0	0.0	
<b>(1) Strongly disagree</b>	0	0.0	0	0.0	0	0.0	
<b>Total</b>	239	100.0	188	100.0	51	100.0	

Of those surveyed, 97 or 40.6% Strongly Agreed with the statement that overall, firms operating in China receive More Favorable Financial Terms, 96 or 40.2% were uncertain about the statement, and 40 or 16.7% Somewhat Agreed with the statement that overall, firms operating in China receive more Favorable Financial Terms.

**Do not deal with social restraints**

	Total		WMEP		NWMOC		Weighted Average
	#	%	#	%	#	%	
							4.2
<b>(5) Strongly agree</b>	120	50.2	98	52.1	22	43.1	
<b>(4) Somewhat agree</b>	48	20.1	37	19.7	11	21.6	
<b>(3) Uncertain</b>	65	27.2	48	25.6	17	33.3	
<b>(2) Somewhat disagree</b>	5	2.1	4	2.1	1	2.0	
<b>(1) Strongly disagree</b>	1	0.4	1	0.5	0	0.0	
<b>Total</b>	239	100.0	188	100.0	51	100.0	

Of those interviewed, 120 or 50.2% Strongly Agreed with the statement that overall firms operating in China Do Not Deal With Social Restraints, 65 or 27.2% were Uncertain about the statement, and 48 or 20.1% Somewhat Agreed with the statement that overall firms operating in China Do Not Deal With Social Restraints.

**Do not face environmental restrictions**

	Total		WMEP		NWMOC		Weighted Average
	#	%	#	%	#	%	
							4.3
<b>(5) Strongly agree</b>	137	57.3	112	59.6	25	49.0	
<b>(4) Somewhat agree</b>	50	20.9	36	19.2	14	27.5	
<b>(3) Uncertain</b>	43	18.1	34	18.1	9	17.6	
<b>(2) Somewhat disagree</b>	8	3.3	5	2.7	3	5.9	
<b>(1) Strongly disagree</b>	1	0.4	1	0.5	0	0.0	
<b>Total</b>	239	100.0	188	100.0	51	100.0	

Of those surveyed, 137 or 57.3% Strongly Agreed with the statement that overall firms operating in China Do Not Face Environmental Restrictions, 50 or 20.9%

Somewhat Agreed with the statement that overall firms operating in China Do Not Face Environmental Restrictions, and 43 or 18.1% were Uncertain about the statement.

**Do not pay supplemental costs, such as health insurance and retirement contributions**

	Total		WMEP		NWMOC		Weighted Average
	#	%	#	%	#	%	
							4.2
<b>(5) Strongly agree</b>	122	51.0	98	52.2	24	47.1	
<b>(4) Somewhat agree</b>	47	19.7	37	19.7	10	19.6	
<b>(3) Uncertain</b>	60	25.1	45	23.9	15	29.4	
<b>(2) Somewhat disagree</b>	9	3.8	7	3.7	2	3.9	
<b>(1) Strongly disagree</b>	1	0.4	1	0.5	0	0.0	
<b>Total</b>	239	100.0	188	100.0	51	100.0	

Of the total respondents, 122 or 51.0% Strongly Agreed with the statement that overall firms operating in China Do Not Pay Supplemental Costs, such as health insurance and retirement contributions, 60 or 25.1% were Uncertain about the statement, and 47 or 19.7 % Somewhat Agreed with the statement that overall firms operating in China Do Not Pay Supplemental Costs.

**Do not have to worry about legislative restraints**

	Total		WMEP		NWMOC		Weighted Average
	#	%	#	%	#	%	
							4.1
<b>(5) Strongly agree</b>	117	49.0	96	51.1	21	41.2	
<b>(4) Somewhat agree</b>	54	22.6	42	22.3	12	23.5	
<b>(3) Uncertain</b>	53	22.2	37	19.7	16	31.4	
<b>(2) Somewhat disagree</b>	13	5.4	11	5.9	2	3.9	
<b>(1) Strongly disagree</b>	2	0.8	2	1.1	0	0.0	
<b>Total</b>	239	100.0	188	100.0	51	100.0	

Of those interviewed, 117 or 49.0% strongly agreed with the statement that overall firms operating in China do not have to worry about legislative restraints, 54 or 22.6% somewhat agreed with the statement that overall firms operating in China do not have to worry about legislative restraints, and 53 or 22.2% were uncertain about the statement.

**Are not concerned about intellectual property rights**

	Total		WMEP		NWMOC		Weighted Average
	#	%	#	%	#	%	
							4.2
<b>(5) Strongly agree</b>	129	54.0	108	57.4	21	41.2	
<b>(4) Somewhat agree</b>	50	20.9	37	19.7	13	25.5	
<b>(3) Uncertain</b>	46	19.2	34	18.1	12	23.5	
<b>(2) Somewhat disagree</b>	10	4.2	6	3.2	4	7.8	
<b>(1) Strongly disagree</b>	4	1.7	3	1.6	1	2.0	
<b>Total</b>	239	100.0	188	100.0	51	100.0	

Of the total respondents, 129 or 54.0% strongly agreed with the statement that overall firms operating in China are not concerned about intellectual property rights, 50 or 20.9% somewhat agreed with the statement that overall firms operating in China are not concerned about intellectual property rights, and 46 or 19.2% were uncertain about the statement.

**Do not abide by free trade laws**

	Total		WMEP		NWMOC		Weighted Average
	#	%	#	%	#	%	
							3.9
<b>(5) Strongly agree</b>	93	38.9	77	41.0	16	31.4	
<b>(4) Somewhat agree</b>	43	18.0	38	20.2	5	9.8	
<b>(3) Uncertain</b>	84	35.1	60	31.9	24	47.1	
<b>(2) Somewhat disagree</b>	15	6.3	12	6.4	3	5.9	
<b>(1) Strongly disagree</b>	4	1.7	1	0.5	3	5.9	
<b>Total</b>	239	100.0	188	100.0	51	100.0	

Of those surveyed 93 or 38.9% strongly agreed with the statement that overall firms operating in China do not abide by free trade laws, 84 or 35.1% were uncertain about the statement, and 43 or 18.0% somewhat agreed with the statement that overall firms operating in China do not abide by free trade laws.

The sixth objective determined any perceived differences between manufacturing firms operating in China and those operating in the United States. The question for this objective was an open-ended question and a detailed list of responses is available in Appendix C. The 3 most popular answers were Unlimited Cheaper Human Labor with 111 total respondents. No Response with 61 total respondents, and Political Structure in China along with Government Support with 28 total respondents.

The seventh objective was to identify any countries that the target market believes will be a competitive threat over the next three years. In addition, identify the magnitude of the impact that each country will have as perceived by the target market.

Positive			RANK					
1st			2nd			3rd		
	#	%		#	%		#	%
<b>Canada</b>	42	12.9	<b>Mexico</b>	14	4.3	<b>Mexico</b>	8	2.5
<b>China</b>	18	5.5	<b>UK</b>	14	4.3	<b>UK</b>	7	2.1
<b>Mexico</b>	13	4.0	<b>Germany</b>	11	3.4	<b>China</b>	4	1.2
<b>UK</b>	11	3.4	<b>Japan</b>	10	3.1	<b>Australia</b>	4	1.2
<b>Japan</b>	8	2.5	<b>India</b>	8	2.5	<b>Canada</b>	4	1.2
<b>Germany</b>	7	2.1	<b>Canada</b>	8	2.5	<b>Japan</b>	4	1.2
<b>Korea</b>	5	1.5	<b>Italy</b>	5	1.5	<b>Germany</b>	4	1.2
<b>Total</b>	104	31.9	<b>Total</b>	57	21.6	<b>Total</b>	35	10.6

Of those surveyed, 42 respondents or 12.9% ranked Canada as the most positive impact. 14 respondents or 4.3% ranked Mexico as having the second most impact. 8 respondents or 2.5% ranked Mexico as having the third most impact.

Negative			RANK					
1st			2nd			3rd		
	#	%		#	%		#	%
<b>China</b>	123	23.8	<b>Mexico</b>	34	6.6	<b>India</b>	14	2.7
<b>Mexico</b>	18	3.5	<b>China</b>	26	5.0	<b>Taiwan</b>	11	2.1
<b>Canada</b>	10	1.9	<b>India</b>	23	4.4	<b>Mexico</b>	9	1.7
<b>Germany</b>	9	1.7	<b>Korea</b>	13	2.5	<b>Korea</b>	9	1.7
<b>India</b>	5	1.0	<b>Japan</b>	10	1.9	<b>Japan</b>	8	1.5
<b>France</b>	5	1.0	<b>Taiwan</b>	9	1.7	<b>Germany</b>	7	1.3
<b>Japan</b>	4	0.8	<b>Brazil</b>	4	0.8	<b>China</b>	5	1.0
<b>Total</b>	174	33.7	<b>Total</b>	119	22.9	<b>Total</b>	63	12.0

Of those surveyed, 123 respondents or 23.8% ranked China as having the worst impact. 34 respondents or 6.6% ranked Mexico as having the second worst impact. 14 respondents or 2.7% ranked India as having the third worst impact.

The eighth objective identified what, if any, actions the target market was taking in response to manufacturing competition from other countries. This question was an open-ended and a detailed list of responses is available in Appendix C. The 3 most

popular responses were No Response with 71 respondents, Create Higher Quality/Faster Delivery/Faster Turnaround with 37 respondents, and Control Pricing/Cut Costs/ More Efficient Pricing with 34 respondents.

Objective nine determined what the State of Wisconsin should do in response to competition from other countries. A detailed list of responses for this open-ended question can be found in Appendix C. The 3 most popular responses were Financial Relief/State Funding /Lower Taxes with 59 respondents, No Response with 54 respondents, and Government/States Create/Enforce Laws to resolve with 25 respondents.

The tenth objective determined if the target market was familiar with Manufactures Extension Partnership (MEP) and their purpose.

	<b>Total</b>		<b>WMEP</b>		<b>NWMOG</b>	
	#	%	#	%	#	%
<b>Yes</b>	82	34.3	67	35.6	15	29.4
<b>No</b>	157	65.7	121	64.4	36	70.6
<b>Total</b>	239	100.0	188	100.0	51	100.0

Of those surveyed 157 or 65.7% responded yes, that they are familiar with MEP and its purpose and 82 or 34.3% responded no that they are not familiar with MEP and its purpose.

Objective eleven determined if MEP has helped the target market become more productive and efficient. The three most popular responses were No Response with 42 respondents, Hasn't Helped with 18 respondents and Has Not Yet Participated with 17 respondents. The question for this objective was open-ended and a detailed list of responses is listed in Appendix C.

The twelfth objective determined the target market's direct demographic information (i.e., number of employees, geographic location of markets, type of operation (Head Quarters (HQ), branch or stand-alone). Questions 15 and 16 of the survey addressed this objective.

**Question 15:** *Currently, do you conduct most of your business:*

	Total		WMEP		NWMOC	
	#	%	#	%	#	%
<b>Within 50 miles of your location</b>	24	10.0	19	10.1	5	9.8
<b>Beyond 50 miles of your location, but still in Wisconsin</b>	48	20.1	42	22.3	6	11.8
<b>Nationally</b>	129	54.0	97	51.6	32	62.7
<b>Internationally</b>	35	14.6	28	14.9	7	13.7
<b>Other</b>	3	1.3	2	1.1	1	2.0
<b>Total</b>	239	100.0	188	100.0	51	100.0

Of those surveyed, 129 or 54.0% responded that they conduct most of their business nationally, 48 or 20.1% responded that they conduct most of their business beyond 50 miles of their location but still in the State of Wisconsin, and 35 or 14.6% responded that they conduct most of their business internationally.

**Question 16:** *How many people do you employ?*

**Full Time**

	Total	WMEP	NWMOC
<b>Average</b>	84.9	75.5	119
<b>Maximum</b>	2000	1578	2000
<b>Median</b>	35	35	40
<b>Minimum</b>	1	1	1

Of those surveyed, the maximum number of full time employees was 2,000 and the minimum number of full time employees was 1. The average number of full time employees in the companies surveyed was 84.5 and the median was 35.

**Part Time**

	<b>Total</b>	<b>WMEP</b>	<b>NWMOC</b>
<b>Average</b>	11.2	8.9	19
<b>Maximum</b>	400	400	160
<b>Median</b>	3	3	5
<b>Minimum</b>	1	1	1

Of those surveyed, the maximum number of part time employees was 400 and the minimum number of part time employees was 1. The average number of part time employees in the companies surveyed was 11.2 and the median was 3.

The answers to the open-ended questions to the objectives above can be found in Appendix C.

## Chapter V

### Summary, Conclusions and Recommendations

The focus of this study was to get a better understanding of Chinese manufacturing and to determine whether Chinese manufacturing is having an effect on Wisconsin manufacturers. In this chapter the study is finalized. A summary of the study will be followed by conclusions based upon results of the study and then recommendations related to the study will be made.

### Summary of Study Procedures

The purpose of this study was to determine the impacts of Chinese-based manufacturers are having on Wisconsin manufacturing companies. The study began with an introduction which described why this study was needed. Next, this paper included a review of literature in which I examined recent literature on this topic. In the third chapter, twelve research objectives were stated and then applied to an eighteen question phone survey which represented the objectives.

The population of this study included 3,116 manufacturing companies, serving in industries which were identified by the USTDRC as having a significant production shift from the United States to China. Of the 3,116 manufacturing companies 623 companies were randomly selected. However, four of the companies in the sample were duplicates, and therefore brought the total sample size to 619 companies. The 619 companies chosen were then administered the phone survey.

The survey was conducted by 20 students participating in the Marketing Research class (BUMKG-479) at the University of Wisconsin-Stout. The students were under the supervision of Assistant Professor Thor Burnvedt, and Project Coordinator Eric Weiss

during the fall of 2003. Due to time, and financial constraints, it was determined that a telephone survey would be utilized to the individuals included in this study. The survey included dichotomous (yes/no), multiple choice, open-ended, Likert scale, and ranking questions.

Questions 1 and 2 of the survey were used to determine if the person on the other end of the phone was an executive in the company. Question 3 of the survey was used to determine the first objective which was to determine if the target market was facing competition from China. The second objective was to identify the source of Chinese competition. This objective was identified by using question 4 of the survey. Questions 5 and 6 of the survey were used to examine objective 3, which was to determine the perceived positive or negative impact Chinese competition is having on their company. Objective 4 of the study was determined by asking questions 7 and 8 of the survey. Next, question 9 of the phone survey was used to identify objective 5, which was to determine the target markets overall opinion of firms operating in China. The sixth objective was determined by question 10 of the survey and identified whether the respondent perceived any differences between manufacturing firms operating in China and those operating in the United States.

Objective 7 of the study was to identify the countries that the respondent believes are going to be a competitive threat over the next three years and the magnitude of the impact that each country will have on their company. This objective was obtained by questions 12.1 and 12.2 of the phone survey. Question 13 of the survey was used to determine what actions they plan to take in response to questions 12.1 and 12.2. This question was in relation to objective 8 in the study. The ninth objective was to determine

what the State of Wisconsin should do in response to competition from China. This objective was determined by question 14 of the phone survey. Question 17 of the survey was asked to determine objective 10 of the study. This objective was to identify whether or not the target market was familiar with MEP and its purpose. Objective 11 of the study was to determine whether MEP has helped their company become more productive and efficient. This objective was determined by using question 18 of the survey. Finally, objective 12 was used to determine the company's demographic information. Questions 15 and 16 were used to answer this objective.

The target market consisted of 619 small to medium-sized manufactures that employed between 10 and 499 employees and had physical plant operations inside the State of Wisconsin. Of the 619 manufactures, 239 provided useable information. This resulted in a total response rate of 38.6%. The answers to the questions were sorted by: total respondents, and the Northwest Manufacturing Outreach Center's (NWMOC) 33 county district, versus Wisconsin Manufacturing Extension Partnership's (WMEP) 39 county district. The results from the respondents was gathered and then tabulated.

### Conclusions and Implications

The main purpose of this study was to determine whether or not Chinese manufacturing companies were having an impact on Wisconsin manufacturing companies. After tabulating the results of the phone survey it was found that 66.5% or 159 manufacturing firms located in the State of Wisconsin are facing competition from manufacturing firms located in China. Objective two of the study was to find out were

the source of the competition was coming from. It was found that the majority of manufacturing firms operating in Wisconsin or 41.0% said that the source of competition was from both multinational manufacturing firms operating in China and Chinese-owned manufacturing firms. The third objective of the study was to find whether the impact of China's manufacturing was having a positive or negative effect on their business. It was found that 67% or 160 Wisconsin companies responded that they have been hurt by China's manufacturing presence. Whereas, only 7.1% or 17 total respondents said that they have benefited from China's manufacturing presence.

The next objective was to identify the percent increase or decrease in sales if Wisconsin companies do not make any changes to Chinese competition. The majority of respondents, which was 97% or 233 respondents, said that they have not experienced an increase in sales for 2003. The same was found to be true through the year of 2007. This means that unless Wisconsin companies begin to make changes in response to Chinese competition, the majority of Wisconsin companies will have a difficult time being profitable. Furthermore, this could lead to more layoffs from these companies. In addition, 116 companies or 48.5% have experienced a decrease in sales and the average percent decrease in sales for these companies was 14.5%. Only, 51% or 123 companies responded that they have not experienced a decrease in sales in 2003. Through 2007, these figures seem to have changed slightly with 56.9% or 136 Wisconsin manufacturing companies believe they will not experience a decrease in sales. Whereas, 103 or 43.1% still believe that they will be expecting a decrease in sales through 2007. Of these companies the average percent of decrease is expected to be an average of 31.5%. This still shows that unless changes are made by Wisconsin manufactures Chinese competition

will continue to have a negative impact on Wisconsin manufactures through the year 2007.

In objective five I wanted to find out what the overall opinions were of Wisconsin manufacturing firms on Chinese manufacturing regarding production costs, lead-time, quality, technology, labor cost, financial terms, social and government restraints, environmental restrictions and supplemental costs. The majority of total respondents, 77.8% strongly agreed with the statement that overall firms operating in China can produce at less cost. This means that Wisconsin manufacturers need to find more efficient ways to produce their products at less cost in order to stay competitive with China. With regard to Chinese manufacturing producing products with a quicker turnaround, 74 or 31% of Wisconsin manufacturers strongly disagreed. In addition, 72 or 30.1% somewhat agreed and 67 or 28% were uncertain about the statement. These results show that Wisconsin manufactures believe that they can compete with China with regards to producing products with a quicker turnaround.

Of the companies surveyed the majority either somewhat disagreed at 36.4% or strongly disagreed at 34.7% that firms operating in China can produce a better quality product. These results indicate that Wisconsin manufacturers believe that their companies can produce a better quality product than their Chinese competitors. With the question that asked if Wisconsin companies believe that Chinese firms are more highly tooled, the response indicated that the majority of Wisconsin companies somewhat disagreed at 32.6% and 26.8% strongly disagreed. These results indicate that Wisconsin manufacturers are more highly tooled than the Chinese.

The statement that Chinese manufacturers can produce products with cheaper labor than Wisconsin manufacturers had an overwhelming majority with 95.1% strongly agreeing with this statement. These results confirm what was mentioned in the literature review on how manufactures across the United States are being threatened by Chinese manufacturers. The results of the statement that Chinese manufactures are receiving more favorable financial terms from the products they produce, the majority of the respondents strongly agreed.

The majority of Wisconsin manufactures also strongly agreed with 50.2% that firms operating in China do not deal with social restraints. In addition, the majority of respondents or 57.3% also do not believe that Chinese manufacturing firms do not face environmental restrictions, and also, 20.9% somewhat agreed with this statement. With regard to the statement that Chinese manufacturers do not pay supplemental costs, such as health insurance and retirement contributions. The majority of Wisconsin manufactures strongly agreed with this statement with 51.0%. The statement that China does not have to worry about legislative restraints, the majority of Wisconsin manufacturers strongly agreed with 49.0%. Also, the majority or 54% percent strongly agreed that Chinese manufactures are not concerned about intellectual property rights. Finally, the statement that the Chinese do not abide by free trade laws, of those surveyed the majority or 38.9% strongly agreed with this statement.

### Recommendations

In order for Wisconsin manufacturers to better compete with Chinese manufacturers it is suggested that the government should implement stronger environmental laws and regulations from China if they want to carry on trade with the

United States. The government should also get involved and force Chinese manufacturers to pay for supplemental costs to their workers and that the Chinese government should enforce more legislation on Chinese manufactures. Furthermore, the Chinese government needs to enforce intellectual property rights laws on Chinese manufacturers. If both the Chinese and U.S. governments, both state and national level, get involved in enforcing Chinese manufacturing to the same guidelines that the United States and other countries involved in the WTO have to implement. Then this may help to level the playing field between Wisconsin and Chinese manufacturing firms.

#### Recommendations for Future Research

It is recommended that researchers in the future should define the terms in objective 5 in this research paper in order to decrease the number of respondents who responded “uncertain” to the statements provided. Furthermore, in order to decrease the number of respondents who responded “uncertain” to the statements, the survey could be mailed or faxed to the respondents. This would allow the respondents more time to think about the answers to the questions or to research their company further in order to get more accurate information. This may increase the response rate since 165 of the 619 companies researched refused to participate, and increase the validity of the information provided by the respondents.

The software program Reference USA, was used to locate the manufacturing firms included in this study by imputing the SIC codes. It is recommended that possibly a better software program be used or a more updated version, since 87 of the 619 companies researched were either “unavailable” or “out of business/moved”. This would have helped the response rate and improved the validity.

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## Appendix A

### Survey Instrument

## China Study

Survey # \_\_\_\_\_ Interviewer \_\_\_\_\_  
 Date \_\_\_\_\_ Time \_\_\_\_\_ : \_\_\_\_\_ a.m./p.m.  
 Call Back: Date \_\_\_\_\_ Call Back: Time \_\_\_\_\_ : \_\_\_\_\_  
 a.m./p.m.

Name \_\_\_\_\_ SIC Code \_\_\_\_\_

Business Name \_\_\_\_\_

Business Address \_\_\_\_\_

City \_\_\_\_\_ Zip Code \_\_\_\_\_

Phone \_\_\_\_\_ Email \_\_\_\_\_

**Read:** *Hello, this is \_\_\_\_\_, calling from the University of Wisconsin-Stout. May I speak with an executive officer, such as the President, CEO, COO, or chief officer? (Improvise in order to speak to this person)*

**Introduction: (Read)**

*Hello, this is \_\_\_\_\_, calling from the University of Wisconsin-Stout. I am calling on behalf of the Stout Technology Transfer Institute (STTI), a state sponsored, non-profit organization that assists Wisconsin manufacturers. I am not trying to sell anything. You have been randomly selected to be 1 of only 300 Wisconsin companies surveyed. Today, we are conducting a short survey concerning the impact of competition from Chinese firms. All information you provide is completely confidential; participation in this survey is voluntary. The survey will take approximately 10-12 minutes to complete. My first question is to confirm.....*

1. Are you the company President, CEO, COO or a similar executive position?
  - a. Yes (continue to question 2)
  - b. No (ask to be connected to that person; repeat introduction)
  
2. What is your title? (record answer exactly as given)
 

\_\_\_\_\_

\_\_\_\_\_
  
3. Is your company facing competition from manufacturing firms operating in China?
  - a. Yes (continue to question 4)
  - b. No (skip to question 5)
  
4. What is the source of competition? (read options and check the appropriate response)
  - a. **ROTATE:** Multinational manufacturing firms operating in China
  - b. **ROTATE:** Chinese-owned manufacturing firms
  - c. **Do NOT rotate:** Both

5. What impact does China's becoming a manufacturing presence have on your business's sales?

(read options and check appropriate response)

- a. Benefits your company (ask question 6 then continue to question 7)  
 b. Hurts your company (ask question 6 then skip to question 8)  
 c. Has no impact on your company (ask question 6 then skip to question 9)

6. How does it \_\_\_\_\_ your company? (insert response to question 5)

Benefit (continue to question 7)

Hurt (skip to question 8)

Have no impact on (skip to question 9)

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7. If you don't make any changes in response to Chinese competition, what do you predict will be the impact of that competition on your sales over the next several years? (Read each statement and record numerical responses) (skip to question 9)

Percent increase in sales this year, 2003	%
Percent increase in sales next year, 2004	%
Percent increase in sales over the next 3 years, through 2005	%
Percent increase in sales over the next 5 years, through 2007	%

If you don't make any changes in response to Chinese competition, what do you predict will be the impact of that competition on your sales over the next several years? (Read each statement and record numerical responses)

Percent loss in sales this year, 2003	%
Percent loss in sales next year, 2004	%
Percent loss in sales over the next 3 years, through 2005	%
Percent loss in sales over the next 5 years, through 2007	%

8. Please indicate your level of agreement with each of the following statements, using a five-point scale. After I read each item, please indicate whether you (5) strongly agree, (4) somewhat agree, (3) are uncertain, (2) somewhat disagree, or (1) strongly disagree with the statement.

(read prefix before each statement and circle correct response)

Prefix: Overall, firms operating in China...	Strongly Agree	Somewhat Agree	Uncertain	Somewhat Disagree	Strongly Disagree
Can produce at less cost.	5	4	3	2	1
Can produce with quicker turnaround.	5	4	3	2	1
Can produce a better quality product.	5	4	3	2	1
Are more highly tooled, meaning they have better	5	4	3	2	1

technology, better use of machine tools and better equipment.					
Can produce with cheaper labor.	5	4	3	2	1
Receive more favorable financial terms.	5	4	3	2	1
Do not deal with social restraints.	5	4	3	2	1
Do not face environmental restrictions.	5	4	3	2	1
Do not pay supplemental costs, such as health insurance and retirement contributions.	5	4	3	2	1
Do not have to worry about legislative restraints.	5	4	3	2	1
Are not concerned about intellectual property rights.	5	4	3	2	1
Do not abide by free trade laws.	5	4	3	2	1

9. Are there other reasons that manufacturing firms operating in China are different (advantaged or disadvantaged) from manufacturing firms operating in the United States? Please explain further.

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11. How should our Federal Government respond to the impact of foreign competition? (**Do not read responses, check all that apply, and list others**)

- a. More funding to support venture capital (develop products)
- b. More funding to increase skill levels
- c. Help in reducing health costs
- d. Develop techniques to make technology more efficient
- e. Other \_\_\_\_\_

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- 12.1 Please tell me **all** countries from which you believe you will face competition over the next 3 years. List these countries in order of the magnitude of positive impact, in other words, starting with the country posing the most positive impact as number 1. **(Do NOT list countries; record the number in the correct column; if the country is not mentioned leave the box blank)**  
**(Record answers then continue with instructions)**
- 12.2 Now list these countries in order of the magnitude of negative impact, in other words, starting with the country posing the most negative impact as number 1.

Country	Positive Ranking	Negative Ranking
Canada		
China		
France		
Germany		
India		
Japan		
Korea		
Mexico		
The Netherlands		
Singapore		
The United Kingdom		
Portugal		
Taiwan		
None		
Other:		

**If no countries were mentioned in question 12, skip to question 14.**

13. Since you have indicated that you are facing competition from firms operating in other countries, what actions will you take to respond? **(Do not read responses, check all that apply, and list others)**

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14. How should the state of Wisconsin respond to the impact of foreign competition? **(Do not read responses, check all that apply, and list others)**

- a. More funding to support venture capital (develop products)
- b. More funding to increase skill levels
- c. Help in reducing health costs
- d. Develop techniques to make technology more efficient
- e. Other \_\_\_\_\_

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15. Currently, do you conduct most of your business: **(read options and check appropriate box)**

- a. Within 50 miles of your location
- b. Beyond 50 miles of this location, but still within the state of Wisconsin
- c. Nationally, meaning, beyond the state of Wisconsin
- d. Internationally
- e. Other \_\_\_\_\_

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16. How many people do you employ?

Full time \_\_\_\_\_

Part time \_\_\_\_\_

17. Are you familiar with Manufacturers Extension Partnership (MEP) and their purpose?

- a. Yes **(continue to question 18)**
- b. No **(read explanation of MEP)**

**MEP Explanation:** MEP stands for Manufacturers Extension Partnership. MEP is a nationwide network of not-for-profit centers whose purpose is to provide small and medium sized manufacturers with the help they need to succeed. The centers are linked together through the Department of Commerce's National Institute of Standards and Technology. Centers are funded by federal, state, and local and private sources to serve manufacturers. This makes it possible for even the smallest firms to tap into the expertise of knowledgeable manufacturing and business specialists all over the United States. **(end of survey)**

18. How has Manufacturers Extension Partnership (MEP) helped your company become more productive or efficient?

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**Read:** *Thank you for taking the time to participate in this survey.*

**If you have questions regarding the survey please contact:**

**Thor Burntvedt**  
**247 Tech. Wing**  
**University of Wisconsin-Stout**  
**Menomonie, WI 54751**  
**715/232-1155 (secretary-Gail)**

## Appendix B

Tables and Graphs

**Number of Respondents who were not included in this study:**

Refused to Participate	165
Attempted 3 or More Times	65
Unavailable	48
Out of Business/Moved	39
No Answer	31
Fax Not Returned	29
Miscellaneous	3
<b>Total</b>	<b>380</b>

**Objective 1:** Determine if the target market is facing competition from manufacturing firms that operate in China.

**Question:** Is your company facing competition from manufacturing firms operating in China?

	Total %
Yes	66.5
No	33.5

**Objective 2:** Determine if the target market perceives a positive or negative impact due to China's manufacturing presence.

**Question:** What is the source of competition?

Multinational Manufacturing Firms Operating in China	34	21%
Chinese Owned Manufacturing Firms	27	17%
Both	98	62%

**Objective 3:** Determine if the target market perceives a positive or negative impact due to China's manufacturing presence.

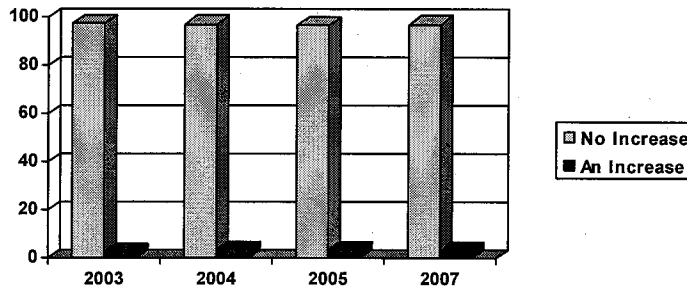
**Question:** What impact does China's becoming a manufacturing presence have on your business's sales?

Benefits	17	7%
Hurts	160	67%
No Impact	62	26%

**Objective 4:** Identify the percent increase or decrease in future sales if the target market did not make any changes in response to Chinese competition.

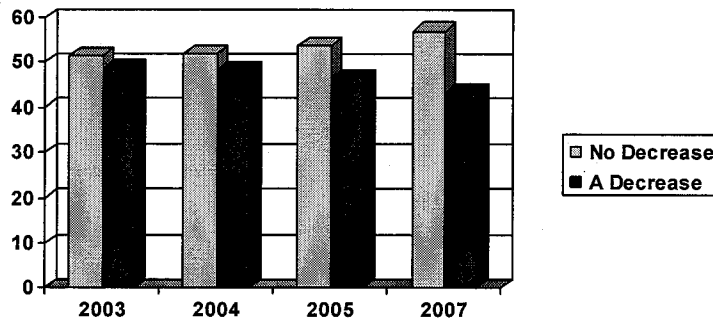
**Question 1:** If you don't make any changes in response to Chinese competition, what do you predict will be the impact of that competition on your sales over the next several years?

**Percent Increase in Sales**



**Question 2:** If you don't make any changes in response to Chinese competition, what do you predict will be the impact of that competition on your sales over the next several years?

**Percent Decrease in Sales**



**Objective 5:** Determine the target market's overall opinion, regarding firms operating in China.

- *This objective was answered using a five-point Likert scale, which produced a weighted average response.*

- 5 – Strongly Agree
- 4 – Somewhat Agree
- 3 – Uncertain
- 2 – Somewhat Disagree
- 1 – Strongly Disagree

**Question 1:** Overall firms operating in China can produce at less cost?

5 --- 4 --- 3 --- 2 --- 1  
 ↑  
 4.7

**Question 2:** Overall firms operating in China can produce with quicker turnaround?

5 --- 4 --- 3 --- 2 --- 1  
 ↑  
 2.2

**Question 3:** Overall firms operating in China can produce a better quality product?

5 --- 4 --- 3 --- 2 --- 1  
 ↑  
 2.0

**Question 4:** Overall firms operating in China are more highly tooled?

5 --- 4 --- 3 --- 2 --- 1  
 ↑  
 2.3

**Question 5:** Overall firms operating in China can produce with cheaper labor?

5 --- 4 --- 3 --- 2 --- 1  
 ↑  
 4.9

**Question 6:** Overall firms operating in China receive more favorable financial terms?

5 --- 4 --- 3 --- 2 --- 1  
 ↑  
 4.0

**Question 7:** Overall firms operating in China do not deal with social restraints?

5 --- 4 --- 3 --- 2 --- 1  
 ↑  
 4.2

**Question 8:** Overall firms operating in China do not face environmental restraints?

5 --- 4 --- 3 --- 2 --- 1

↑  
4.3

**Question 9:** Overall firms operating in China do not pay supplemental costs as health insurance and retirement contributions?

5 --- 4 --- 3 --- 2 --- 1

↑  
4.2

**Question 10:** Overall firms operating in China do not have to worry about legislative restraints?

5 --- 4 --- 3 --- 2 --- 1

↑  
4.1

**Question 11:** Overall firms operating in China are not concerned about intellectual property rights?

5 --- 4 --- 3 --- 2 --- 1

↑  
4.2

**Question 12:** Overall firms operating in China do not abide by free trade laws?

5 --- 4 --- 3 --- 2 --- 1

↑  
3.9

**Objective 6:** Determine any perceived differences between manufacturing firms operating in China and those operating in the United States.

**Question:** Are there any reasons that manufacturing firms operating in China are different from manufacturing firms operating in the United States?

### Top 3 Responses

Unlimited – Cheaper Human Labor	111
No Response	61
Government Support	28

**Objective 7:** Identify countries the target market believes will present a competitive threat over the next 3 years.

**Question 1:** Please tell me all the countries from which you believe you will face competition over the next three years. List the countries in order of magnitude of positive impact, in other words, starting with the country posing the most positive impact as number 1.

**Positive Impact**

Canada	42
China	18
Mexico	13

**Question 2:** Please tell me all the countries from which you believe you will face competition over the next three years. List the countries in order of magnitude of negative impact, in other words, starting with the country posing the most negative impact as number 1.

**Negative Impact**

China	132
Mexico	18
Canada	10

**Objective 8:** Identify what, if any, actions the target market is taking in response to manufacturing competition from other countries.

**Question:** Since you have indicated that you are facing competition from firms operating in other countries, what actions will you take to respond?

**Three Most Popular Responses**

No Response	71
Create Higher/Faster Delivery	37
Control Pricing/Cut Cost/More Efficient	34

**Objective 9:** Determine what the State of Wisconsin should do in response to competition from other countries.

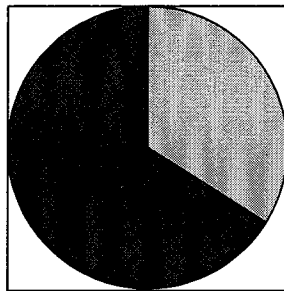
**Question:** How should the State of Wisconsin respond to the impact of foreign competition?

### Three Most Popular Responses

Financial Relief/ State Funding/ Lower Taxes	59
No Response	54
Government/ States Create/ Enforce Laws to Resolve	25

**Objective 10:** Determine if the target market is familiar with Manufacturers Extension Partnership and their purpose.

**Question:** Are you familiar with Manufacturers Extension Partnership and their purpose?



■ Yes  
■ No

**Objective 11:** Determine if Manufacturers Extension Partnership (MEP) has helped the target company to become more productive/efficient.

**Question:** How has Manufacturers Extension Partnership helped your company become more productive or efficient?

### Top 3 Responses

No Response	42	55%
Hasn't Helped	18	23%
Haven't Used Yet	17	22%

**Objective 12:** Determine the target market's direct demographic information. This information includes number of employees, geographical locations, and type of operation.

**Question 1:** Currently, where do you conduct most of your business?

Within 50 miles of location	24	10%
Within the State of WI	48	20%
Nationally	129	54%
Internationally	35	15%
Other	3	1%

**Question 2:** How many people do you employ full time and part time?

<b>Full Time</b>	<b>Part Time</b>
84.5	6.2

## Appendix C

Results of Open-Ended Questions and “Other” Responses

6. How does it \_\_\_\_\_ your company?

<b>Response: Benefits</b>	<b>NWMOC</b>	<b>WMEP</b>	<b>Total</b>
Some companies are using Chinese manufactured products	2	3	5
Cheaper materials	1	2	3
Makes company more competitive	0	2	2
Local manufacturers in China	0	1	1
Export to China	1	0	1
China is not equal in quality	1	0	1
Customer selection is limited to few manufacturers	0	1	1
<b>Response: Hurts</b>	<b>NWMOC</b>	<b>WMEP</b>	<b>Total</b>
Lost customers/sales	14	62	76
Mass production/cheaper labor/lower cost in China	7	36	43
Competition (increased, or unfair) growth difficult	5	10	15
Lowers market price	1	12	13
Does not know/ no response	0	7	7
Forces lay-offs/closings of jobs	0	5	5
Forces companies to move	0	2	2
Chinese materials supplied to Government	0	1	1
China has better technology	1	0	1
Loss of control in quality of products	0	1	1
<b>Response: No Impact</b>	<b>NWMOC</b>	<b>WMEP</b>	<b>Total</b>
No response	6	15	21
No competition with China	4	12	16
Rare/specialized industry; no major impact	7	8	15
No loss in business	2	1	3
Own locations in Asia	0	2	2
Sales are still increasing	0	2	2
Participate in same practices as competition in China	1	0	1
Distributes to Western Europe, no impact	1	0	1

**Question 10:** *Are there other reasons that manufacturing firms operating in China are different (advantaged or disadvantaged) from manufacturing firms operating in the United States?*

<b>Response</b>	<b>NWMOC</b>	<b>WMEP</b>	<b>Total</b>
Unlimited, cheaper human labor	26	85	111
No response	13	48	61
Political structure in China, government support	4	24	28
Currency unstable	0	7	7
China is unrestricted; uneven playing field	1	5	6
China has less benefits for workers	1	2	3
U.S. has better quality products than China	1	1	2
China has not the technical support	0	2	2
No unions in China	2	0	2
U.S. has higher costs and regulations	0	2	2
U.S. has higher taxes; importation/exportation taxes unequal	0	2	2
U.S. has materials requirements that China does not	0	1	1
China has greater work ethic	0	1	1
Shipping costs	0	1	1
U.S. has workman's comp	0	1	1
China invests money better	0	1	1
U.S. is spoiled	0	1	1
Communications barrier	0	1	1
China has more resources	0	1	1
China has more room for growth	1	0	1

**Question 11:** *How should our federal government respond to the impact of foreign competition?*

- a. More funding to support venture capital.*
- b. More funding to increase skill levels.*
- c. Help to reduce health costs.*
- d. Develop techniques to make technology more efficient*
- e. Other*

<b>Response</b>	<b>NWMOC</b>	<b>WMEP</b>	<b>Total</b>
a	0	6	6
b	1	1	2
c	0	9	9
d	0	8	8
Level playing field (equality and free trade)	8	61	69
Enforce/increase/modify tariffs, taxes, and duties	11	47	58
Uncertain	9	17	26
Float currency/fix currency exchange	1	22	23
Adapt to global economy/world market (don't change)	4	10	14
Subsidize costs	2	12	14
Decrease/restrict importation of goods/trade embargos	3	9	12
Abide by trade laws	1	6	7
Promote/offer incentives to keep manufacturing here/do not allow manufacturers to leave	2	5	7
Incentives for customers who buy products made in USA	0	6	6
Bring current manufacturing back to U.S.	1	5	6
Protection of property rights	1	4	5
Set standards, create restrictions on quality for foreign made products	2	1	3
Lower costs	0	2	2
Reduce restrictions on migrant employment	0	2	2
Encourage product	1	1	2

specialization here in US			
Change/modify environmental laws	0	1	1
Compare with competition and develop solution	0	1	1
Federal trucking standards	0	1	1
Break up multinational corporations	0	1	1
Return to trade agreements of the 1990's	0	1	1
Restrict overseas machining	0	1	1
Support the WGO	0	1	1

**Question 12.1:** *Please tell me all countries from which you believe you will face competition over the next three years. List these countries in order of magnitude of positive impact, in other words, starting with the country posing the most positive impact as number 1.*

Positive Rankings									
1	2	3	4	5					
Canada	42	Mexico	14	Mexico	8	Canada	5	Japan	3
China	18	UK	14	UK	7	Germany	3	Mexico	3
Mexico	13	Germany	11	China	4	Korea	2	Brazil	1
UK	11	Japan	10	Australia	4	France	2	Spain	1
Japan	8	India	8	Canada	4	Japan	2	Canada	1
Germany	7	Canada	8	Japan	4	Vietnam	2	Germany	1
Korea	5	Italy	5	Germany	4	Central America	1	India	1
Europe	4	Europe	4	Russia	3	Mexico	1	Singapore	1
Netherlands	3	France	4	Taiwan	2	Taiwan	1		
Switzerland	3	China	4	Switzerland	2	Denmark	1		
US	3	Israel	2	Austria	2	Europe	1		
France	2	Finland	2	Sweden	2	Italy	1		
Italy	2	Australia	2	Israel	1	Australia	1		
Sweden	2	Belgium	1	Korea	1	China	1		
Taiwan	1	Denmark	1	Brazil	1				
Israel	1	Venezuela	1	Netherlands	1				
Portugal	1	Portugal	1	Ireland	1				
Russia	1	Korea	1	Malaysia	1				
New Zealand	1	Switzerland	1	Singapore	1				
India	1	US	1	France	1				
Hong Kong	1	Thailand	1						
Asia	1	New Zealand	1						
Australia	1	South America	1						
Ireland	1	Netherlands	1						
Poland	1	Brazil	1						
Philippines	1	Vietnam	1						
<b>Total</b>	<b>135 Total</b>	<b>101 Total</b>	<b>54 Total</b>	<b>24 Total</b>	<b>12</b>				

**Question 12.2:** *Please tell me all countries from which you believe you will face competition over the next three years. List these countries in order of magnitude of negative impact, in other words, starting with the country posing the most negative impact as number 1.*

Negative Ranking									
1		2		3		4		5	
China	123	Mexico	34	India	14	Taiwan	8	Korea	3
Mexico	18	China	26	Taiwan	11	Mexico	7	India	2
Canada	10	India	23	Mexico	9	Japan	4	Mexico	2
Germany	9	Korea	13	Korea	9	Korea	3	South America	2
India	5	Japan	10	Japan	8	China	2	France	2
France	5	Taiwan	9	Germany	7	India	2	Switzerland	1
Japan	4	Brazil	4	China	5	Portugal	2	Hong Kong	1
Taiwan	4	Indonesia	3	Indonesia	5	Germany	2	Canada	1
Korea	3	Italy	3	Brazil	4	Vietnam	2	Pacific Rim	1
UK	2	France	3	Portugal	3	Brazil	1	Portugal	1
Europe	2	Germany	3	Netherlands	3	Chile	1	Netherlands	1
Switzerland	1	Singapore	2	Canada	3	Middle East	1		
Asia	1	South America	2	Vietnam	3	Russia	1		
Argentina	1	Russia	2	Singapore	2	Canada	1		
South America	1	Netherlands	2	Central America	2	Argentina	1		
						Central			
Pacific Rim	1	Vietnam	2	Czech Republic	2	America	1		
Third World	1	Far East	2	South America	2	Eastern Europe	1		
		Pakistan	2	Israel	1	Malaysia	1		
		Canada	1	Romania	1	Singapore	1		
		Burma	1	Afghanistan	1	South Korea	1		
		Turkey	1	UK	1	Pacific Rim	1		
		South Korea	1	Malaysia	1	Italy	1		
		Africa	1	Sweden	1	Indonesia	1		
		Thailand	1	Pakistan	1	Ukraine	1		
						United			
		Malaysia	1	Sri Lanka	1	Kingdom	1		
		Argentina	1	Far East	1				
		Philippines	1	Hong Kong	1				
		Bulgaria	1	France	1				
		Egypt	1						
		Hong Kong	1						
		UK	1						
<b>Total</b>	<b>191 Total</b>	<b>158 Total</b>	<b>103 Total</b>	<b>48 Total</b>	<b>17</b>				

**Question 13:** *Since you have indicated that you are facing competition from firms operating in other countries, what actions will you take to respond?*

<b>Response</b>	<b>NWMOC</b>	<b>WMEP</b>	<b>Total</b>
No response	18	53	71
Create higher quality/faster delivery/faster turnaround	8	29	37
Control pricing/cut costs/ more efficient pricing	6	28	34
Increase customer service/offer what China cannot	4	10	14
Use better equipment and technology	1	13	14
Venture into new products/manufacture/research into new areas	4	9	13
Join/move overseas	3	9	12
Contact government for involvement	0	11	11
Work more aggressively/specialize	2	8	10
Redefine strategy/flexible concepts/	0	6	6
Switch to automated business	1	5	6
Stay ahead of trends/stay competitive	1	4	5
Increase marketing/advertising	0	5	5
Promote products made in the US	1	4	5
Increase quality of employee training	0	4	4
Level playing field	1	3	4
Down size	1	2	3
Buy more components from China	0	3	3
Expand	1	2	3
Investigate Chinese operations and model after them	1	1	2
Develop an auxiliary facility and international port	1	1	2
Increase buying from local vendors	0	2	2
Go out of business	0	1	1
Bring in more work from the US and abroad	0	1	1
Contract manufacturing	1	0	1
Lean manufacturing	0	1	1
Adapt to global economy	0	1	1

**Question 14:** *How should the state of Wisconsin respond to the impact of foreign competition?*

- a. more funding to support venture capital*
- b. more funding to increase skill levels.*
- c. help to reduce health costs.*
- d. develop techniques to make technology more efficient*
- e. other*

<b>Response</b>	<b>NWMOC</b>	<b>MWEP</b>	<b>Total</b>
A	0	11	11
B	2	18	20
C	1	20	21
D	1	7	8
Financial relief/state funding /lower taxes	12	47	59
No response	14	40	54
Government/states create/enforce laws to resolve	3	22	25
Create incentives to keep companies in Wisconsin	0	10	10
Level playing field (equality in free trade)	1	7	8
No state involvement	2	3	5
Fewer regulations and restrictions	2	3	5
Tariffs on imports	1	4	5
Adapt to global economy/world market (don't change)	1	4	5
No importation/exportation	2	2	4
Support small/private business	4	0	4
Incentives for customers to buy USA made products	1	3	4
United States with common goals	1	2	3
Better quality products	1	2	3
Lower environmental restrictions	1	2	3
Raise taxes and regulations	0	3	3
Support MEP	0	2	2
Monitor competition	1	1	2

Send trade missions to China	0	2	2
Educate government about international issues	0	1	1
Restrict free trade	0	1	1
Work with the Chinese government	0	1	1
Support the MFIB and WIB	0	1	1
Increase job opportunities	1	0	1
Mandatory domestic purchasing	0	1	1

**Question 18:** *How has the manufacturers Extension partnership helped your company become more productive or efficient?*

<b>Response</b>	<b>NWMOC</b>	<b>WMEP</b>	<b>Total</b>
No response	10	32	42
Has not helped	4	14	18
Has not yet participated	4	13	17
Provided training courses	0	10	10
Conferences/seminars	1	5	6
Consulting	0	6	6
Lean manufacturing	1	4	5
Programs with the MEP	0	2	2
Strategic planning	0	2	2
Set up more efficient processes	1	1	2
Technology implementation	1	1	2
Lean culture development	0	1	1
Funding	0	1	1
Received information	0	1	1
MEP is a waste of money	0	1	1